Evaluating Madison From Two Wheels

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Abstract:

Bicycling is not only a childish pastime, but also an activity that can help the environment, both built and natural, while promoting equality and community among its residents. This study determines the bike-friendliness of downtown Madison, Wisconsin and how it influences the city's overall livability. Our research analyzes the ways in which a city can be made bike-friendly through the use of policy, advocacy, and infrastructure. It also examines different issues that urban cyclists encounter. These not only encompass demographic concerns regarding gender, race, ethnicity, and economic standing, but also utilitarian problems, such as convenience, accessibility, and safety.

Through cyclist surveys, interviews with key leaders in bicycle advocacy and urban design, and the construction of a map, which outlines city features that are conducive to cycling, we confirm that Madison is a bike friendly city. However, there is room for improvement. Cyclists give Madison high ratings for bike friendliness and their overall safety. These ratings can increase with further developments in bike policy and infrastructure.

Introduction:

Most all of us have memories of when we first learned how to ride a "two-wheeler." It was a day to be remembered; it was a day to be celebrated! After weeks of falling into bushes and scraping our knees, something clicked, and bicycling finally made sense. Now there was a new form of entertainment in which we could invest our time. However, little did we know, this new form of recreation would have the potential to solve some hindrances associated with modern society.

As issues of climate change and public health continue to rise, the bicycle provides a simplistic solution to these complex problems. Besides bicycling being sustainable and good for

the environment, it also promotes an active healthy lifestyle in cities. Urban cycling also helps city residents develop a sense of place. Urban designer Lars Gemzøe refers to active bicycle cities as "soft cities". According to Gemzøe,

"The soft city is the city where you see people on the streets and squares and not just metal boxes on wheels with somebody inside that are hard to see from the reflections of the windscreen. The soft city is the city where you can meet people at eye-level...and maybe even get a smile. It makes quite a difference for the experience of a city when you see people in the public spaces like the streets and squares, or if you just experience cars everywhere" (2013).

We refer to these soft cities as livable cities. One key characteristic of livable cities is an active bicycle culture with accessible infrastructure. Livable cities are associated with vibrant urban environments, which promotes on the ground interactions. Within these cities, residents feel safe, and connected as a community. Livable cities have the potential to encourage everyone who can cycle to get out on the streets and cycle. In these cities, cycling is used for primarily utility purposes; this includes commuting practices such as cycling to and from work or school, or to run errands. Therefore, a city becomes bike friendly when infrastructure, policy, and advocacy programs work together to get the most people cycling. A bike friendly city prioritizes factors of safety, accessibility, and convenience for its cyclists. This paper will review what makes a city bike friendly, and why bike friendliness is important for the development of livable cities. After we determine these factors, and conduct field research, we can assess Madison, Wisconsin as a bike friendly city.

History:

Before we examine what bicycling is like today, it is important that we take a look at the bicycle history of Wisconsin. Bicycling became popularized during the first "bicycle boom",

which occurred in the late 19th century. Prior to this, bicycling was an activity that only exclusive members of society could enjoy due to the extremely high cost of bicycles (Historic Bike Tour, 2013). During this boom bicycle prices fell with the introduction of the new "safety" bike (Gant and Hoffman, 2013, p. xxiv), and record numbers of cyclists were getting out on the streets and experiencing this new form of transportation and recreation (Taylor, 2008, p. 214). By 1895, Wisconsin was considered the most popular bicycle state in the country (Historic Bike Tour, 2013).

There were two types of bicycle advocates in Wisconsin that helped fuel this boom. The first group share similarities with bicycle advocates today. They had a more egalitarian view on bicycling and praised it for being pleasurable, affordable, practical, and efficient (Gant and Hoffmann, 2013, p.xvii). They believed that the bicycle had the potential to solve wider societal problems of equality and were encouraged by the utilitarian possibilities of what some called "the poor man's horse," (Gant and Hoffman, 2013, p.xviii).

The other group of advocates had a connection to the sport since the introduction of the bicycle (Historic Bike Tour, 2013). They are considered bicycling conservatives and were predominantly upper class white men (Gant and Hoffman, 2013, p. xviii). They were often members of the League of American Wheelman (LAW), who had a vision of bicycling as an activity that, "stressed recreation and competition". Hotels in Madison would cater to LAW members who were traveling through the city on a bike excursion throughout the state. The hotels would provide them with a luxurious place to stay and roadmaps to help navigate their rides (Wheel Fever Tour 2013). These bike trips represented the sport as something for recreation, rather than utilitarian, purposes. With a narrow framework for policy based off their

own self-interests, LAW continually put other groups of cyclists at a political disadvantage (Gant and Hoffman, 2013, p.xviii).

The conflict of interest between bicycle groups was a debate between the "athletic prowess" and "freedom and mobility" of cycling (Gant and Hoffman, 2013, p. xviii). Even though egalitarian cyclists were increasing in numbers and developing a political base, the conservative lobby dominated bicycle politics into the 20th century (Gant and Hoffman, 2013, p.xix). These cycling elites were able to, "secure a range of infrastructure benefits that didn't have to extend to other populations," (Gant and Hoffman, 2013, p.xx). This unevenness in access is something that continues today and will be addressed further in our paper.

The first bicycle boom eased society's acceptance of the automobile and American car culture. The bicycle represented a fundamental switch to private transportation, away from railroads and steamboats, which laid the foundation for the automobile (Gant and Hoffman, 2013, p.xx). In the early 20th century, bicycling was replaced by high intensity car transit. Manufacturers who traditionally made bicycles switched to automobile production (Historic Bike Tour, 2013). This development made bicycle transportation virtually non-existent, constituting solely as a form of childhood recreation. There was a small resurgence of bicycling in the Great Depression because it was a more affordable means of transportation (Historic Bike Tour, 2013). It wasn't until the 1960s and 1970s, when the second bicycle boom occurred, and bicycle transit finally reemerged (WisDOT, 2013). This second boom is partly a "rail to trail" story because many railroads in Wisconsin that were no longer in use were converted into bike trails (Historic Bike Tour, 2013). In the 1970s, Wisconsin became one of the first and only states to create a managerial position for the bicycle and pedestrian safety program (WisDOT, 2013) and ever since, cities have been petitioning for safer bicycle facilities and infrastructure.

Demographics:

The demographics of cyclists, and their motivations to cycle need to be reviewed when evaluating a city's bike friendliness. In the United States, bicyclists account for a very small percent of the total road share. In 2009, bike trips made up only one percent of all road trips (Pucher et al., 2011, p.452). Cycling in the United States is primarily for recreational and social purposes, while just 12% of all bike trips are for commuting (Pucher et al., 2011, p.454). This contrasts to a country like Denmark, where 35% of all bike trips are either to work or school (Pucher and Buehler b, 2008, p.499). Cycling, especially for utilitarian purposes, is not an activity shared equally by all American populations and geographies. This section examines urban cycling and its relation to gender, age, race, socio-economic status, and locality.

Within the one percent of utilitarian cyclists, there is an uneven gender ratio. In 2009, women made 24% of all bike trips, dropping from 33% in 2001 (Pucher et al., 2011, p.452). This disproportion is noteworthy because of historical connections between women and bicycles. During the late nineteenth and early twentieth century, women saw the bicycle as a source of freedom and mobility between public and private life. Elizabeth Cady Stanton saw the bicycle as a "revolutionary social invention that opened new avenues of pragmatic and spiritual independence," (Strange and Brown, 2002, p.611). The bicycle had a deeper societal meaning than simply providing transportation.

Given this history, why are female cyclists a minority today? In the late nineteenth and early twentieth centuries, cyclists did not have to compete with motorized vehicles for road share. Because cyclists are the minority of road users today, concerns about cycling in motorized traffic are common, especially among women (Gaard et al., 2008, p.55). Women are more likely to bike if they feel safe and comfortable, which can be improved through proper bicycle safety

infrastructure (Garrard et al., 2008, p.58). Additionally, women are often responsible for taking care of the children and running errands for the house, so they tend to "hop in the car" instead of "hop on a bike" to perform these tasks (Baker, 2009). Men who do not have the same responsibilities may have more incentive to bike for utilitarian purposes.

Unlike driving a car or riding a bus, bicycling in the United States is not a normalized form of transport. Because of this, female cyclists are constantly faced with the question of, "how to cycle as a *gendered* traveler," (Steinbach et al., 2011, p.1125). The clothes they wear and the type of bike they ride is visible to everyone. What is it that they want to represent as female cyclists? Is it a representation of an athletic tomboy, or a rider who is fashionably "cycle-chic'? (Steinbach et al., 2011, p.1125) Similar to the women who fought for suffrage and equality, female urban cyclists defy gendered traditions and create change. Historically, bicycling gave women more freedom outside the house and extended their participation in public life (Strange and Brown, 2002, p.615). Today, female cyclists are contributing to the normalization of utilitarian cycling as a mode of transport.

Age is another bicyclist demographic to consider. From 2001 to 2009 the percent of bike trips made by children younger than fifteen fell from 56% to 39% (Pucher et al., 2011, p.455). Conversely, trips made by those between 40 and 64 years old rose from 10% to 21% (2001 and 2009 respectively) (Pucher et al., 2011, p.455). With more adults cycling, this population is cutting into the percent of trips made by children. There needs to be effective policy and advocacy programs that not only increase the percent of bike trips for older populations, but for younger ones as well.

Bicycling is a relatively cheap from of transportation, and with the proper training, almost anyone can do it. Because of this convenience, it can be an egalitarian form of transport.

Despite this potential, the demographics of cyclists in the United States are often unequal. White Americans made 77% of all bike trips in 2009. Black Americans made 10% of all bike trips, making up the second largest group of cyclists (Pucher et al., 2011, p.456). Cultural differences can either encourage or inhibit cycling, which affects what groups of people choose to cycle. If certain populations are not used to bicycling, they have less incentive to start (Steinbach et al., 2011, p.1126). This demographic divide is also influenced by access. For example, 77% of Capital BikeShare members in Washington D.C. are white (The League of American Bicyclists and The Sierra Club, 2013, p.12). In addition, black Americans are 30% more likely to be in a fatal bike accident than white Americans, and Hispanics come close at 23% (The League of American Bicyclists and The Sierra Club, 2013, p.2). This unequal access and exposure to bicycle safe streets demonstrates the need for policy, infrastructure, and advocacy reforms that make bicycling a more equitable form of transport across demographic groups.

Despite these statistics, there is growing enthusiasm among minorities to bike. This can only be possible if bicycle planning and advocacy programs prioritize these underrepresented populations. For example, 60% of people of color said they would bike more, if more bike facilities were available to them (The League of American Bicyclists and The Sierra Club, 2013, p.6). The later sections will discuss specific infrastructure improvements that help make bicycling accessible for a wider range of people.

Current bicycle studies prove that overall cycling rates do not greatly differ across income classes (Pucher and Buehler, 2008b, p.504). Since bicycling is an affordable activity that can be shared across income levels, it has the potential to act as an "economic equalizer" in bike friendly cities. This adds to the social livability of a city, because it limits inequalities in transportation access. Despite this potential, inequalities in access and attitudes are still relevant.

For some lower income groups, bicycling has a stigma as being a method of transport for the "really poor". Once someone has made it financially, purchasing a car is the best way to demonstrate his or her economic success (Steinbach et al., 2011, p.1126). People with higher incomes may not see this stigma, because they do not need to prove their wealth in the same way. They may view cycling as an activity that is healthy for them and good for the environment. These cyclists would not see bicycling as form of transport that is limited by economic standing (Steinbach et al., 2011, p.1126).

If someone lives in a neighborhood with ample bicycle lanes and works in the nearby central business district, they are more likely to commute to work by bike (Schneider, 2013, p.134). These cycle-friendly neighborhoods have a higher income population and tend to be gentrified and in close proximity to a university (Pucher et al., 2011, p.461). On the other hand, low income and minority communities have limited or no access to safe bicycle infrastructure (The League of American Bicyclists and The Sierra Club, 2013, p.6). This causes an interesting dichotomy. Those with a higher income, have more opportunities to cycle to work compared to those who cannot afford to buy a car and may live farther from work. Even the praised bike sharing programs[1] are limited in their reach to minorities and lower socioeconomic populations (Toole Design Group and the Pedestrian and Bicycle Information Center, 2012, p.27). On top of this, it is found that people with lower incomes are more likely to cycle for utilitarian purposes, such as commuting to work, while people with higher incomes cycle more for recreation and exercise (Pucher et al., 2011, p.455). This means that those who cycle to work because they

[1] According to the Toole Design Group and the Pedestrian and Bicycle Information Center for USDOT Federal Highway Administration, "Bike sharing is a nonmotorized transportation service, typically structured to provide users point-to-point transportation for short distance trips (0.5 to 3 miles). It provides users the ability to pick up a bicycle at any self-service bike sharing station in the network and return it to any other bike sharing station (including the origin)," (4).

cannot afford a car get less priority in planning and policy making, when they actually need the most help. Bicycle policies need to be as comprehensive and inclusive as possible, so everyone can have an equal cycling experience.

Why is this uneven road share not present in cities like Copenhagen or Amsterdam? Not only do more people cycle (relative to population size), all demographics are active participants (Pucher and Buehler, 2008b, p.502). For example, in Denmark, women make up 45% of all bike trips. This active participation is largely due to the successful implementation of progressive bicycle policies in Northern European countries. These policies favor cycling over private car use and make driving more expensive (Pucher and Buehler, 2008b, p.502). Because cycling is prioritized and institutionalized, it is a convenient and accessible form of transport. It is undeniable that cycling has health benefits and is good for the environment, so why do transportation policies in the United States continue to favor the automobile? Additionally, what motivates Americans to cycle despite the lack of attention bicycling receives as a form of transport?

A way to determine motivation can be done by examining cyclists' opportunities and values. Robert Schneider suggests the Theory of Routine Mode Choice Decisions to explain people's choices for transport, which can be applied to bicycle use (2013, p.129). When deciding what mode of transportation to use, five factors or steps are weighted. The first step reviews awareness and availability. Commuters must know about cycling and its benefits in order to do it (Schneider, 2013, p.130). Also, if one does not have access to a bicycle, their chances of cycling are reduced (Schneider, 2013, p.131). The next step is safety and security. Schneider argues that people will choose transit modes that are perceived to meet a basic level of safety

from both cars and crime (2013, p.131). When these safety concerns are addressed, cities can maximize bike friendliness.

Continuing with Schneider, convenience and cost are the next factors involved. Schneider claims that if it is more convenient to drive somewhere than bike, driving will be the likely outcome (2013, p.132). This varies between urban and suburban areas. Biking in a city can get you quickly from one place to the next, breezing past congested traffic. However, in spread out suburbs, travel time is often quicker by car (Schneider, 2013, p.132).

The next factor Schneider considers is enjoyment, which can be experienced intrinsically or extrinsically. Intrinsically, cycling can make people feel healthier and extrinsically has environmental benefits (Schneider, 2013, p.132). At the same time there are factors of enjoyment that encourage driving, like showing off a new car (Steinbach et al., 2011, p.1126). If more people are cycling, the livability of a city increases, bringing greater levels of enjoyment to all residents.

Habit, is the last step Schneider addresses because it enforces routine choices. However, habits are likely to be broken after significant life events, such as having a child or getting your license (Schneider, 2013, p.132). Because these life events encourage driving, switching to cycling requires additional support in policy, infrastructure, and education. In order to be effective, these components need to prioritize safety, convenience, and accessibility. Once these facets are realized and consider a variety of demographic groups, cities will increase their bike friendliness and therefore livability. Urban cycling is a more equitable form of transport in these bike friendly cities.

Infrastructure:

Physical infrastructure can do much to promote cycling in a city. These designs facilitate the ease of cycling in urban environments, and therefore encourage cycling as a viable means of transportation. Extensive research has gone into the study of how urban design affects cycling, and has shown a great correlation between improved organization and increased cycling. Therefore, the goal of this research is to evaluate the methods previous studies have used to perform research on area cycling. Through research, we have determined that there is a relatively homogeneous nature of performing research on cycling infrastructure. They mainly focus on case studies in a focus city or group of cities. This is hardly a negative; as the emphasis of this section is on urban design, this research deals primarily with quantitative data. We will mimic this as we develop our own case study; by analyzing their data and conclusions, we can therefore create a case study of Madison, Wisconsin and its overall bike-friendliness.

Urban design features and individuals' environmental attitudes positively impact urban cycling (Susilo et al., 2012). On a basic, level, urban planning affects cycling simply by the diversity and density of land use zones (Susilo et al., 2012, p.190). The article, "The Influence of Individual Environmental Attitudes and Urban Design Features," builds on this idea by noting the correlation between distance to be travelled and the resultant transportation mode choice. It concludes that a high density of services in a small area lowers dependence on cars for transportation and promotes cycling. This means, in an area where there is a great mix of land use types within a small area, cycling is promoted due to the ease of access of these services and the relative hassle of using a car. On a smaller scale, however, there are provisions that assist cyclists somewhat more specifically than overall land use. These more specific elements include: secured bicycle storage, good natural surveillance, and traffic calming features (Susilo et al., 2012, p.199).

Beyond these overarching methods, smaller-scale designs can be used to improve the experience of an urban cyclist. One such method, known as "traffic calming," results in lowered traffic speeds and volumes (Litman, 1999, p.1). Traffic calming is a massive factor in the prevalence of cycling, as it affects the safety and comfort of cyclists when on roads shared with vehicles. These methods proceed further than simply lowering the speed limit of a street, and are important to recognize in observing bicycle-friendly streets; these features include, but are not limited to: enhanced speed enforcement; vehicle-type restrictions (such as limiting large trucks); increased warning signage; speed tables and raised crosswalks; median islands (also known as pedestrian refugee islands); speed humps and rumble strips; traffic circles and roundabouts; pavement treatments such as cobbles; bike lanes; curb extensions; lane narrowings and reductions; as well as many others (Litman, 1999, p.2). Traffic calming features are some of the more obvious design aspects of a city, and the aforementioned list is crucial, as it will identify areas designed with bicycles in mind when performing research in Madison.

Continuing on to a second specific feature of cycling, a slightly less impactful yet equally important subject is the awareness and education of cyclists on the road. It is the opinion of this author that many people feel unsafe or nervous when cycling, and being familiar with cycling rules and safety will promote cycling on a deeper level. "Perhaps the most important reason for the higher levels of cycling in northern Europe- especially among women, children, and the elderly- is that cycling is much safer here than in the United States." (Pucher and Buehler, 2008a, p.60) The author also states:

> "Dutch, Danish, and German children receive extensive training in safe and effective cycling techniques as part of their regular school curriculum. Most children complete such a course by the fourth grade. It includes both classroom instruction and road lessons,

first on a cycling training track just for children, and then on regular cycling facilities throughout the city. Real police officers test the children, who receive official certificates, pennants, and stickers for their bikes if they pass the test," (p.60).

Given this description, it is clear that an analysis of cycling education in Madison is a critical aspect of analyzing the bike-friendliness of the city. However, on the whole, there is little information written about cycling education, as it appears to vary significantly from city to city, as well as within countries.

The topic of bicycle parking is, similarly to cycling education, another rarely covered subject in academic journals. Whereas the topic of this paper is not to dissuade illegal parking, it is the opinion of this author that creating a legal, easy way to park one's bike (with additional provisions such as the prevention of theft through theft-proof bicycle storage facilities) will promote increased cycling. Again, using this information will be critical in field research when analyzing the location not only of bicycle parking areas, but also noting where bicycles are parked illegally. Doing such will provide insight as to where there is a need, or where there is a lack of cycling parking facilities.

A last major topic to discuss is bicycle boulevards, which are roads that are specifically catered to cyclists. Madison has several of these streets, and their influence on bicycling is ubiquitous. While still allowing motor vehicle traffic, they employ many of the features mentioned previously: traffic calming, restriction of large motor vehicles, and bicycle-specific signage and crossings (Minikel, 2011, p.242). These roads are typically provided as alternatives to arterials, or higher-volume higher-traffic roads within cities (Minikel, 2011, p.242). Besides bike paths, bicycle boulevards are the epitome of urban design with cycling in mind. Due to the lack of motor vehicle traffic, these streets have significantly lower collision rates than their

arterial counterparts (Minikel, 2011, p.246). Because safety is typically a main issue when choosing whether to cycle rather than drive a car, bicycle boulevards play an important role in allowing more people to cycle, and to do so safely. As mentioned previously, women are much more likely to bike if they feel safe. The best way to improve individual's perception of safety is through increased creation of these types of streets (Garrad et al., 2008, p.55).

Lastly, this author would like to epitomize an article with superior influence on all urban cycling design, which could easily have been titled, "Putting it all Together." The massive, 258-page "Portland Bicycle Plan for 2030" must be mentioned outright as not only does it take much of the information from the previously mentioned sources, but it coagulates that research into one solid means for designing a cycling-friendly city (Vanderslice et al., 2013, p.3). Within the scope of urban planning, the plan's optimistic goals hedge itself on firstly and simply, increasing its bicycle network (Vanderslice et al., 2013, p.41). The article goes into detail on its methods of achieving this goal, including the addition of over 200 miles of bicycle boulevards, over 100 miles of bike lanes, and almost 50 miles of roadways enhanced for cyclists. While not unique in its mentions of urban design features, it explains the methods, and future plans, for implementing these features in the "real life" city of Portland, rather than in a hypothetical research situation. The article emphasizes that all the aforementioned facilities are the primary catalyst for increased cycling: topics like bicycle parking, traffic calming, bicycle boulevards, bicycle sharing programs, and green networks. This publication is the end-all to academic research by putting the conclusions to work. Having this city's plan for improving cycling will provide a strong basis for analyzing the policy and structure of Madison.

By these features, this group has a knowledge base by which urban planning features can be effectively observed and analyzed in a new setting. The research found was perfectly

structured, starting with a general overview and moving to more specific topics, with that information culminating into an incredibly detailed plan for a cycling-improved city. All these sources will provide a considerable base for research collected on cycling in Madison, Wisconsin.

Policy:

Leaders have implemented policies in order to improve and encourage a biking lifestyle. In 1880, the League of American Wheelmen formed and urged cyclists to unite and "put pressure on politicians to meet their demands for better roads and fair treatment" (Taylor, 2008, p.217). However with the emergence of the automobile, bicycles and bicycle policy were put on the back burner. The perception of bikes had suddenly changed from an important mode of transport to a form of recreation for children. It wasn't until the late 1960s when bicycle popularity finally reemerged (Bicycle Transportation in Wisconsin). Since the second "bicycle boom", Wisconsin bike policies have strived to increase safety, and to implement infrastructures, which enhance the convenience, and overall attractiveness of cycling (Pucher and Buehler, 2007, p.53).

In Madison's initial bikeway proposal from 1980, it explains that the project's intentions "are aimed at enhancing safety for cyclists" (Traffic Engineering Division and Department of Transportation, p.1). Since the first implementation of bicycle policies, it is clear that they have enhanced public safety in multiple ways. Policies that provide protection and reduce crime produce safe streets, which generate active neighborhoods and community members. Providing bike safety education to all, bikers and motorists alike, will unite community members and ensure that everyone is informed of current traffic rules and regulations. In order to implement

these safety regulations, police enforcement is necessary. A combination of these safety measures ultimately provides protection for entire bicycle communities.

The greatest problem with owning and operating a bicycle in Wisconsin is theft (Wisconsin Department of Transportation and Wisconsin Department of Natural Resources, 1974, p.24). As such, policies should be adopted to help reduce crime and provide opportunities for safe recreation and active living (Sallis, J. et al., 1998, p.381). In order to prevent theft, cities need to provide safe and proper parking facilities. More than protected bike lanes, this will best protect the most essential tool for bicyclist - their bikes. With proper parking amenities, this will administer positive effects on communities. Proper parking facilities ensure a safe place for bikers to lock their bikes. When cities install more bicycle parking, this infrastructure will encourage more people to cycle because the cyclists will feel reassured, knowing their bike is safe. In our survey we will use this information to gage Madison's perception whether the city is safe and provides enough parking infrastructure.

More people will feel free to cycle with the reassurance of having a safe bike. This not only promotes bicycling, but it facilitates community interactions, which can result in clean and safe streets (McClintock, 2002, p.1). The design of bikeway systems also develops a sense of unity within a community. Bike paths expose scenic beauty and historic features of the urban area, which encourages awareness and appreciation of community attributes (Wisconsin Department of Transportation and Wisconsin Department of Natural Resources, 1974, p.7). And due to the sustainable nature of biking, local officials and community members recognize the environmental impacts it could create. In Wisconsin's Guidelines for Developing Urban Bikeways (1974, p. 7), it shows how biking can serve as a preventative measure, limiting noise and air pollution. This proves that biking not only produces active residents, but it also actively

cleans areas. Ultimately, when people are connected to their community, they strive to protect it; consequently this generates bike-friendly neighborhoods.

Policies geared toward bicycle education are another method for improving bike-friendliness. This not only provides citizens with safety skills and knowledge, but it helps promote avid cycling. In the United States in 1974, it was generally found that cyclists were at fault in the majority of accidents (Guidelines for Developing Urban Bikeways, p.26). However in the Netherlands, traffic regulations actively favor bicyclists. "Even in cases where an accident results from illegal moves by cyclists, the motorist is almost always found to be at least partly at fault… police and courts find that motorists should anticipate unsafe and illegal cycling" (Pucher and Dijkstra, 2003, p.1514). In order to have safe streets, it is imperative to require intense traffic education for both motorist and bicyclist alike. Engaged citizens who are attuned to their surroundings ensure safer streets. In Wisconsin's Guidelines for Developing Urban Bikeways, it designs a plan for teaching bicycle safety to schoolchildren from kindergarten to fifth grade (1974, p.26). This provides children with experience and proficiency, which will extend into adulthood. However, yet again the Netherlands trumps America. In the Netherlands, children receive extensive instruction on safe bicycling practices; they are taught how to bike defensively, to anticipate dangerous situations, and to react appropriately (Pucher and Dijkstra, 2003, p.1512). Despite the disparity, America continues to make strides towards a more bike- friendly environment with the support of policies and programs. This year Madison's primary agenda focuses on promoting its biking infrastructure through educational programs like Safe Routes. Bike Fed is working with the Madison School District to design easy, safe routes for kids to bike to school (Elbow, 2013). This is a great way to get more children cycling and give them the opportunity to practice proper cycling behavior.

Police enforcement is necessary in order to instill the importance of road rules and regulations. This implementation will encourage that proper safety measures are conducted more frequently. In 1977, Wisconsin proposed to initiate the Bicycle Safety Enforcement Proposal. This suggested that punishment for bicycling violations resulted in "a penalty of compulsory attendance at a bicycle safety school" (1977, p.2). This would reiterate the importance of bicycle education and safe behavior. Although this is a great idea, it is costly and is difficult to regularly enforce. Police officers usually have more pressing matters to deal with, than bicycle enforcement. Today cycling violations simply result in a fine, which continues to promote safe cycling practices as well (WisDOT, 2013).

Although safety measures like protection, education, and enforcement have a great impact on bicycling prosperity, other facilities, like infrastructure and incentives, promotes further encouragement for bicycling. Since the "bicycle boom," policy makers have strongly advocated the implementation of bike paths. Even today, Madison maintains and creates new bikeways. However, a recent practice is now in progress, officials are able to reinforce the importance of biking by providing monetary incentives for people to abandon the car.

Infrastructure is essential in order to have a booming bicyclist population; it not only provides public access, but it promotes safe bike-friendly environments. In 1980, the Department of Transportation proposed to build a bike path stretching from Middleton to Madison. "Hazardous conditions and public demand for a suitable bikeway in this corridor prompted many cyclists, citizens, and elected officials to support planning efforts to improve safety for cyclists" (p.4). Madison has come a long way since then. When Mayor Dave Cieslewicz was in office, he set up a five year, fifty million dollar program to update bike facilities, including the installation of bike boxes, bike boulevards, contra-flow lanes and green pavement markings (Cieslewicz,

2013). Madison already has a sophisticated bike network with paths reaching out to the suburbs. However, there is room for improvement. Bill Nesper, program director for the League of American Bicyclists, says Madison needs to continue to expand these networks. In order to make bicycling an attractive and real option, bikeways need to be comfortable for them (Elbow, 2013). Public officials have the ability to structure and provide the essentials, which in turn attract a bicycle community.

Due to Madison's intricate bikeway system, policy makers are able to issue incentives to deter driving. "Municipalities have the possibility to pursue an active price-setting policy of car-parking costs and to adapt the spatial organization of the city" (Rietveld and Daniel, 2004, p.545). Increased parking prices will provide municipalities an economic incentive to promote other means of transport. In the long run, this incentive will not only advance safety measures and improve bicycling infrastructure, but it will encourage an active healthy community.

Policies are imperative to not only regulate practices, but they are essential for endorsing favorable public behavior. Protection, bicycle education, and police enforcement strengthen communities by creating a safe active environment. Bicycle infrastructure and proper facilities instill a message to the community, encouraging mass involvement due to its accessibility. Officials have the power to enact regulations in order to better municipalities, and with their help, it establishes bike- friendly cities. "A place that is good to bike in is good to live in" (Dave Cieslewicz, 2008).

Advocacy:

An incredibly important aspect of cycling is the means by which individuals promote the activity to their peers and their community. Through our research we investigated why people and organizations become advocates of cycling, and its impacts on the activity as a whole. What

benefits does cycling advocacy pose to urban cycling? How can those benefits be obtained in a practical manner? For example, for a business to become an advocate, there must be some benefit to the business. How does advocating for cycling benefit different entities within an urban community? To answer these questions, we must assess community advocacy programs, government actions, and business roles in promoting cycling.

When we think of a bicycle we may associate it with thoughts of riding down a trail, observing nature, and interacting with our surroundings. We are all familiar with the fascination of a child riding their first bike and being pushed by a parent. In a terrifying yet gratifying instant, the parent lets go of the bike and the child eagerly rides away. For many children this moment is their first sense of independence and pure accomplishment. This is the first opportunity we have to view cycling as a leisure activity, a mood enhancer, and a fulfilling experience. "Many government agencies...have explicitly advocated for more bicycling as a way to improve individual health" (Pucher et al, 2010). At the most basic level, this is a major reason at the heart of why individuals push for increased provisions for cyclists.

On a more utilitarian level, cycling has a number of functional purposes. It is an effective means for transport, yet encompasses many of the more humanitarian reasons for cycling as well. By riding their bike to work, a cyclist is not only being economical but they also have the gratifying experience of being outside and getting exercise. In city planning, transportation needs have become an important goal and are taken into consideration when advocating a presence for cycling (Rybarczyk and Wu, 2010). Transportation needs and health, however, can often be in contention with one another. Densely populated highways, traffic congestion, and pollution are brought into a city by automobiles. These facets directly oppose the symbol of health and well-being. The Intermodal Surface Transportation Efficiency Act (ISTEA) that was passed in 1991

recognizes this opposition. This regulatory act intended to allocate funds towards non-highway projects such as: walking, bicycling, and public transit (Gardner, 1994). Cycling, in this sense, may be viewed and approached as a cure-all solution to offset transportation problems that the parks department cannot solve. Cities are aware that this is an issue. According to Aytur et al., it is necessary to have "planning processes that shape the built environment...support physical activity and address these chronic health conditions" (2011).

What does it mean to be an advocate for cycling? Advocacy encourages and promotes the use of bicycles and the local community bike trails. Many businesses are avid activists for cycling; "The highest business-based advocates reside in restaurants, taverns, bicycle stores, and coffee shops…. the most frequented establishments that may enhance the cyclist's experience"(Rybarczyk and Wu, 2010). These promotions can be found in the form of coupons, or in the case of employees, health care reductions. When wearing a bike jersey or helmet, some businesses offer standard discounts as well as for those belonging to teams, clubs, or organizations. One Barrel Brewing in Madison promotes cycling every Wednesday night and cyclists get a free beverage if they wear their bike jersey. This not only advocates cycling, but it reduces the number of people operating a car after consuming alcohol, and can be seen in a positive light.

It has become popular and functional for governmental agencies to take part in bicycle advocacy. Many municipalities are hosting "bike to work weeks", by closing major roads so people can use them for cycling (Miller, 2011). The underlying goal of these events is to provide commuters with an alternative form of transit and hopefully instilling a new mindset around transport (Miller, 2011). Bike to work weeks show commuters that bikes can replace cars. This

builds and reinforces the notion that bicycles are a valid form of transportation. Urban cycling combines recreation, fitness, and functionality into one pleasurable activity.

One of the largest advocates in the development of cycling, are city governments such as Metropolitan Planning Organizations (MPOs). MPOs are federally funded transportation policy-making organizations, which allow the public to participate in the planning of urban environments. "MPOs can play an important role… by directing the state level funding towards specific transportation improvement projects" (Aytur et al, 2011). In this sense, city governments are a structural agent for the feasibility of any cycling program. Implementing a functional and safe network for bicycle travel is as crucial to the success of urban cycling because it makes the activity more accessible. Madison has several initiatives, which encourage urban cycling growth. The Bike Federation of Wisconsin envisions twenty percent of all transport in the Madison area will be by bicycle, by the year 2020 through their program '20-by-2020' (20-by-2020.com, 2013).

Cycling has health benefits, which pertain to individuals as well as their communities (Miller, 2011). The actual promotion of cycling increases community support and involvement in the activity (Claus et al, 2012). The motivations of programs like cycling clubs, "Bike to School Day", the Errand Bike Program, Car-Free Challenges, bike sharing organizations, and wellness programs are aimed directly at creating this interest in cycling. These programs reduce pollution, improve public health, and increase tourism in a city. They also promote family life, cultural growth, and bicycle/pedestrian safety (Aytur et al., 2011). For example, the Honolulu biking program not only provided a safe and productive place for youths suspended from school, but it also created a sense that biking was "cool" (Claus et al, 2012).

Bicycle advocacy programs also promote the development of a strong urban bicycle culture. These include workshops that teach children how to cycle and bike to school safely. This encourages a new generation of active cyclists. Another program includes errand bicycle programs, where employees are able to use bikes to run errands during the middle of the workday. Free helmet programs, training in bike maintenance, and rider education also encourage the activity (Claus et al., 2012, S323).

It is important that advocacy programs focus on increasing minority groups' ridership. As mentioned in the demographic section of this review, bicycling is primarily a white activity. New bicycle sharing programs are a great way to get more people bicycling, but they are still limited in the populations they reach (Toole Design Group and the Pedestrian and Bicycle Information Center, 2012, p.27). One way to increase minority and low-income participation in these programs is to have alternative methods of payment. Instead of using a credit card, local banks can work with the bike share program to set up a free checking account and reduce the membership fee (Toole Design Group and the Pedestrian and Bicycle and Information Center, 2012, p.27).

Bicycling advocacy organizations are also working with minority communities on specific campaigns to meet their bicycling needs (Bike League and the Sierra Club, 2013, p. 5). For example, in Los Angeles there is an organization called Multicultural Communities for Mobility, which connects immigrant bicyclists to bicycle advocacy groups. This gives local communities the opportunity to get involved in the decision making process when creating bike friendly neighborhoods (Bike League and the Sierra Club, 2013, p. 7). When these under represented neighborhoods get attention from influential advocacy organizations, bicycling can become accessible and equitable.

Defining advocacy is not only what organizations stand for, but also how they implement their goals. Aytur demonstrates that events, programs, and initiatives were created to benefit and enhance the world of urban cycling and its recipients (Aytur et al., 2011). However, creating the program is only the first step in the advocacy process. Advocacy programs need to be distributed to the public. Popular methods have been posting information in social meeting areas, social networking, radio and television media, word of mouth, and presentations and conferences. (Claus et al, 2012). For example, "hosting a ride resonated well with communities and garnered much success in building energy and enthusiasm"(Claus, 2012, p. S324).

Bike trails and paths offer people a safe method of cycling transportation, a form of recreation, and serve as an opportunity to differentiate themselves from the rest of the population. The city, as a governmental agency, is an advocate for lowering car emissions and reducing traffic congestion. Officials can create proposals to construct a network of trails, which itself promotes cycling. Cycling is an inexpensive form of transit, and requires relatively fewer inputs and maintenance. With reductions in car use, the cost of road maintenance can be significantly lowered.

Cycling programs and promotions help influence knowledge, attitudes, skills, behavior, and health benefits related to physical activity (Claus et al., 2012). Factors such as traffic congestion and automobile accessibility are responsible for promoting active cyclists. Urban cyclists benefit from lower transportation costs and often have a shorter commuting time, with less hassle, than their driving coworkers (Frank, 2004). With increased bicycle traffic, the city becomes a healthier place to live because carbon dioxide emissions from cars are reduced. "Many government agencies...have explicitly advocated more bicycling as a way to reduce air pollution, carbon emissions, congestion, noise, traffic dangers, and other harmful impacts"

(Pucher et al., 2010). Cycling is a combatant to obesity, which in turn raises life expectancy and enhances quality of life. Studies show that, "60 minutes per day in the car translated to an additional 6% odds of becoming obese" while, "each quartile increase in land use mix was associated with a 12.2% reduction in the odds of being obese" (Frank et al., 2004). From this initial research, it is clear that he byproducts of cycling enhance the overall well-being in urban environments.

Methods:

After reviewing the literature on urban cycling, we collected primary data. Madison, Wisconsin was our site setting, with a focus on the downtown and UW campus area. Focusing on this specific area helped narrow our research to commuter cyclists instead of those bicycling for recreation. Each key theme (demographics, policy, advocacy and infrastructure) required different forms of data collection. In our survey, which was distributed to cyclists, we included demographic questions regarding one's gender, age, and racial/ethnic background. State Street was an excellent location due to the ample amount of B-Cycle stations and lack of cars. We issued the surveys at bicycle parking areas around downtown Madison and outside busy campus buildings such as College Library and Science Hall. Because these are areas of high bicycle traffic, we hoped to get a wider range of research participants. Surveys were also distributed online via Qualtrics to cyclists in our respected clubs and teams.

The surveys had a mix of fixed response questions, which "offer a limited set of responses" (Clifford et al, 2010, p.79). These bicyclist surveys collected qualitative and quantitative data. Qualitative questions included, "Why do you choose to bicycle?", "Do you feel safe biking in Madison?", "Is Madison accessible by bike?". These questions gave us a sense of how bicyclists perceive Madison as a bike friendly city. Quantitative questions used a Likert

scale, which "presents a range of responses anchored by two, extreme opposing positions" (Clifford et al, 2010, p.81) to rate cyclists' experience in the city. High perceptions of these three issues add to our argument of Madison as a bike friendly city. We also conducted casual interviews with cyclists to get a better understanding on how they perceive Madison as a biking city. Learning from their experiences on the road helped add more qualitative data to our research.

To address issues of policy and advocacy we conducted an in-depth interview with the Tom Klein of the Wisconsin Bike Federation. This interview gave us both historical and current information regarding Madison's bike friendliness. We learned what programs and policies are successful and how they get implemented properly. We also conducted an interview Lars Gemzøe, an urban design expert from Denmark, for information on what Madison can do to be more like Copenhagen. The interview was semi-structured, which *Key Methods in Geography* defines as, "a verbal interchange where one person, the interviewer, attempts to elicit information from another person by asking questions", yet the interview was intended to "unfold in a conversational manner, offering participants a chance to explore issues they feel are important," (2010, p.103). This conversation feel helped us grasp the issues in a more bottom-up approach. Gemzøe also sent an email copy of an interview he had with a Polish magazine regarding "soft" and "livable" cities. (Please see Appendix A for a transcript of this interview)

Lastly, Madison's bicycle infrastructure was physically surveyed for important features that promote cyclist safety, accessibility and convenience. Using this data, we created a map that highlighted the city's main bike friendly features: cycling paths, lanes, parking, and B-Cycle stations. Additional features we observed included: traffic calming features, pedestrian refuge islands, bicycle road markings and signs, areas of high bicycle traffic, and bike shops. By

combining this map with our data from the interviews and surveys, we were able to see where and how Madison maximizes safety, accessibility, and convenience and what needs improvement.

Survey Results:

The overarching purpose of our survey was to evaluate Madison's bike friendliness from a cyclist's perspective. We had 137 survey respondents of varied ages, genders, and ethnicities. From our initial research, we concluded that to receive a fair response and evaluation of Madison's bike friendliness we would need to survey those familiar with Madison's trail/path network and bicycle infrastructure. For our research purposes, these cyclists were qualified to answer questions regarding the accessibility, convenience and safety of bicycling in Madison. (See Appendix B for a copy of the survey we distributed)

Part I: Cyclist Demographics:

Our survey group had a skewed gender distribution, with a higher amount of female responses. 59 respondents were male representing 43% of the population, and 76 respondents were female representing 55%. There were also 2 respondents who preferred not to list their gender.

Because our surveys were distributed in downtown Madison, we hoped for a diverse ethnicity distribution. However, our survey respondents were overwhelming white. This demographic accounted for 88% of the surveyed population. We received responses from seven Asian Americans (5% of respondents). Less than 5% of respondents were African American, Hispanic/Latino, "multi-racial", and those who identified as "other". There were no American Indian, Alaskan Native, or Hawaiian or Pacific Islander respondents.

The last demographic aspect that we measured was age. By varying our survey distribution over State Street and the Capitol, we hoped to get respondents apart from university students. Nonetheless, people between the ages of 17 and 24 were the largest group of respondents. 65% of respondents were in this age demographic. 20% of respondents were between 25 and 30 years old, 11% of respondents were between 35 and 44 years old, and only 3% of respondents were over the age of 45. There was also one female who preferred to not say her age.

Part II: Overall Bike Friendliness (Safety and Accessibility):

After the first three demographic questions, we asked, "How bike friendly is Madison?" This question gauged respondents' overall opinion of Madison's bike friendliness. This question was posed on a Likert scale with 31% of people reporting Madison as "very bike friendly". The majority of the surveyed population (64%) found Madison to be "bike friendly". The remaining 5% of respondents found Madison to be "neutral" in terms of Bike Friendliness. Not one respondent reported Madison to be "not bike friendly" or "impossible to bike". When responses were classified by gender we found that of the male responses, 34% found Madison to be "very bike friendly" and the 64% reported the city as "bike friendly". A similar distribution was recorded for the females, where 28% reported Madison as being "very bike friendly" and 65% finding the city to be "bike friendly" (See Table 1).

Our next question asked, "How safe do you feel when biking in Madison?" For this question, we received some input in the comment section that indicated such things as "It depends on where you are", "For the most part, Yes, I do feel safe". This indicates that perceived safety varies, depending on one's location in the city, and is not consistent over the entire region. Factors, such as differences in crime, traffic, and accessibility across the city may

contribute to this variance. Of the respondents, 7% felt "completely comfortable" biking in Madison, while another 28%, had a "neutral" opinion of safety. The majority of respondents (58%) reported feeling "safe" while cycling in Madison. 93% of all respondents put Madison in the upper levels of bike safety, while 7% felt that it did not meet their requirements for a safe biking city. Only one individual found Madison to be a "terrifying" place to cycle. We found a nearly equal distribution between genders in terms of perceived safety while cycling Madison. However, a higher percentage of women, compared to men, saw Madison as a "completely comfortable" place to bike. Despite this, a higher percentage of women also reported Madison as "not safe" to bike in. 9% of women reported having a less than "neutral" opinion of Madison's bike safety juxtaposed to only 3% of men (See Table 2).

Table 1:

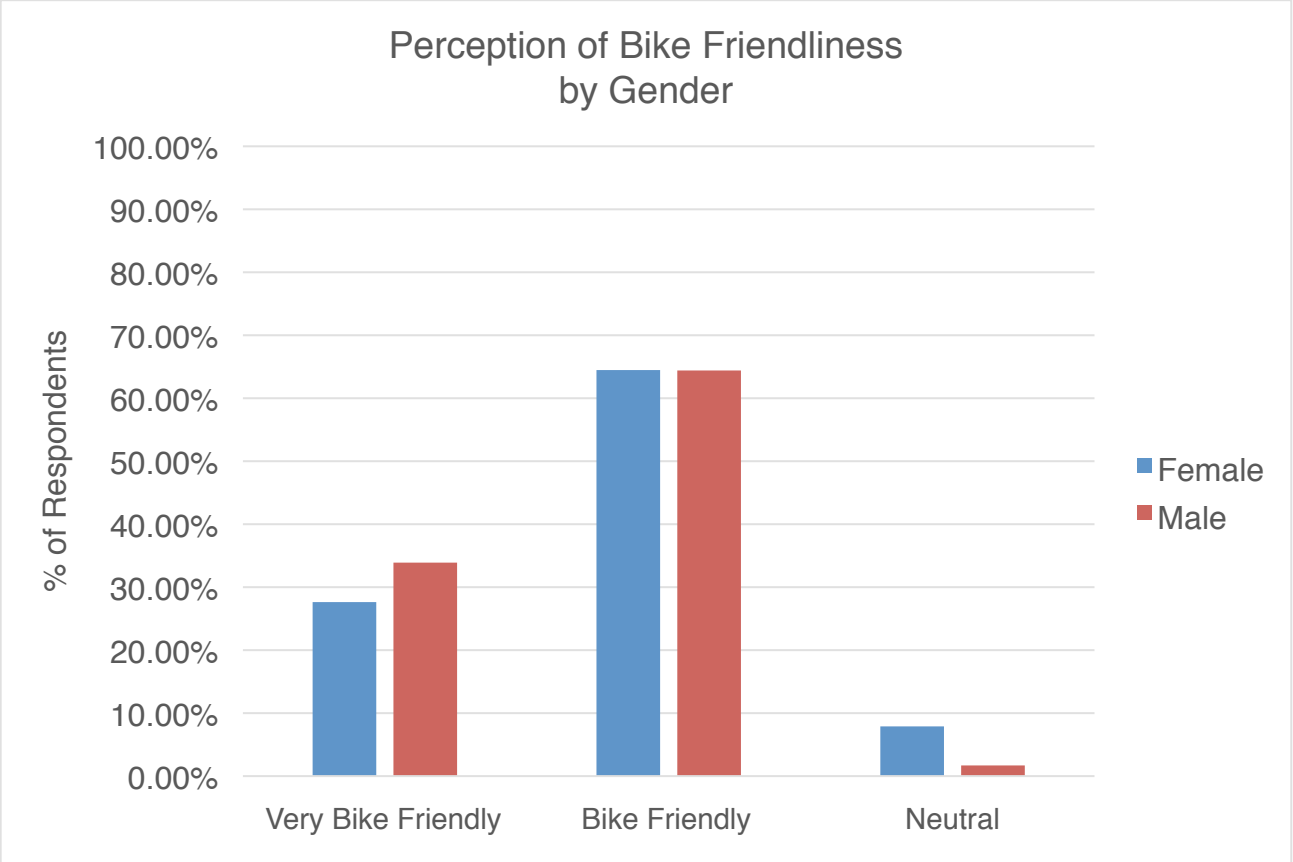
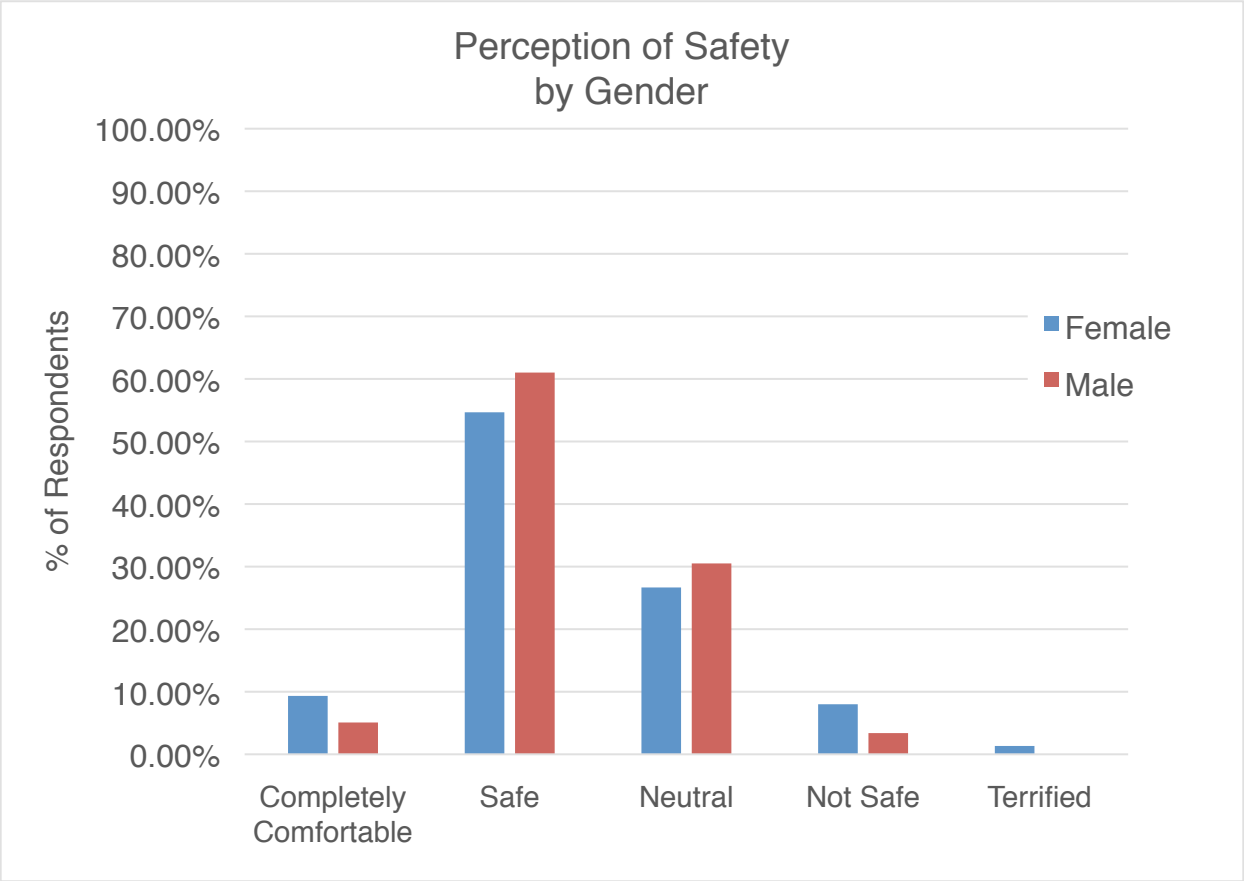


Table 2:



Next, we asked individuals if they cycled all year round in Madison as another determinant of the city's bike friendliness and safety. 33% of respondents claimed to cycle year round, while the other 67% said they did not. This is saying a lot, considering the surveys were distributed at the end of November when it was already quite cold outside. Also, due to the fact that all respondents reported Madison as being bike friendly, there were no discriminate differences between seasonal cycling and the city's bike friendliness. Of the 33% of respondents who reported that they cycled year round, 76% of that them also reported feeling either "safe" or "completely comfortable", 20% reported feeling "neutral", and only 4% reported feeling "not safe". We can compare this to the 8% of the seasonal cyclists who felt "not safe" or even

"terrified" when biking in Madison, illustrating a small difference in safety perception and year round participation.

We then asked respondents to choose their main purpose for cycling. The options listed were: commuting, recreation, exercise/sport, inexpensive transport, and environmental. 57% of the study group deemed "commuting" to be their main purpose for cycling. "Recreation" had the second highest responses, representing 15% of the study group. Smaller percentages were recorded in the categories of inexpensive transport, exercise/sport, and environmental. 5% of survey respondents were unable to answer this question, citing reasons such as insufficient time or inability to conclusively decide. Some respondents reported all answers as equally important, which for the scope and accuracy of this survey; we classified such responses into "no reply".

The next group of questions assessed Madison accessibility by bike, to determine how easy it is for a person to get from Point A to Point B in the city. We found that Madison is doing an exceptional job in terms of its bicycle accessibility. 36% of all survey respondents found Madison to be "very accessible", and an additional 53% found Madison to be "accessible". 9% claimed Madison to be "neutral" in terms of accessibility, and only 3% found the city to be less than "neutral".

To further assess accessibility we also asked respondents, "How accessible are bike paths/lanes in Madison?" We found, similarly to overall accessibility, that a majority of the responses indicated a high perception of accessibility for bike paths and lanes. 39% of respondents found Madison to rank in the top category of our Likert scaled responses, which was "very accessible". 44%, and the majority grouping, categorized Madison as having "accessible" bicycle lanes and paths. 12% found Madison to be "neutral" in this regard, and 5% of all

respondents, reported either “not accessible” or “extremely inaccessible”. One respondent claimed they could not answer this question accurately.

Another way our survey measured accessibility was the availability of bicycle parking in Madison. 27% of the survey population reported it “very easy” to find bicycle parking within Madison. Additionally, 53% of respondents found it “easy” to find bicycle parking. 13% of the survey population rated Madison bike parking availability as “neutral”, while only 8% of people who deemed it “difficult” or “very difficult” to find bike parking. As with other questions in this survey, responses regarding bike parking do have geographic significance.

We chose our study area because it has a bike-sharing program in place. In this case it is Madison B-Cycle. Having B-Cycle as an option allowed us to survey cyclists who do not own a bicycle. At the end of our survey, we asked respondents if they were familiar with the B-Cycle program. 12% of respondents claimed that they are “very familiar” with the program, and 15% of respondents indicated that they are “fairly familiar” with the program. The largest categorization of responses was at the “somewhat familiar” level with 30% of respondents. Lastly, 16% reported being “not familiar”. The remaining 27% of respondents answered the option “What’s B-Cycle?” In terms of actual B-Cycle use, just over 9% of all respondents, even if only one time, used the B-Cycle program.

Interview Results:

After interviewing Tom Klein, the Dane County Director of Wisconsin’s Bike Fed and Danish urban designer Lars Gemzøe of Gehl Architects, we were able to further evaluate Madison as a bike friendly city. This branch of Wisconsin's Bike Fed not only focuses on promoting cycling, but it aims to “get people who normally do not cycle to go out and cycle” (Klein, 2013). In order to facilitate these goals, the Bike Fed intends to continue to create

infrastructure, implement policies, and advocate cycling throughout the city. According to Gemzøe, the "progressive cities make a great difference" because they help bicycling become a more normalized form of transport. Thus, the Bike Fed's commitment to improving Madison's bicycle culture is key in the development of bike friendly cities.

"Time and time again, Madison is consistently one of the top bicycle cities in the countries" (Klein, 2013). Klein continues to describe the success of Bike Fed's mission, "the Dane County Bike Fed prides itself in their physical infrastructure, specifically the trail networks, the contraflow lanes, and bike islands" (2013). According to Klein, "the contraflow lane on University was the first of its kind in America" (2013). This protected lane flows opposite of car traffic, allowing bicyclists to travel both ways down University. However, there is always room for improvements. Klein states, "Madison needs to continue to improve the percent of collector streets that have bicycle infrastructure" (2013). Continuing to increase the number of bike lanes and contraflow lanes will continue to make Madison a more accessible and safe bike city. Gemzøe claimed, "building a network of cycle tracks" was one of the most important developments in making Copenhagen a bike friendly city (2013). He also noted that the hardest part in this process was getting cycle tracks "on the main roads into town (in the dense neighbourhoods) where there was only a limited space to do it" (2013). Given this development pattern, if Madison and the Bike Fed continue to overcome obstacles and build bicycle infrastructure in places that need it, an increase in cyclists will naturally follow.

Gemzøe considers "political will and somebody to move things on the ground," a main component in creating bike friendly cities in America (2013). In relation to this dimensionality for success, Klein informed us that the Bike Fed operates at both the state and local level. However, Klein claimed that working at "local, smaller scales prove to be more successful"

(2013). The Bike Fed "targets local Madison city officials, planners, advocates, and traffic engineers" (Klein, 2013) whenever they want to initiate a new policy. Thanks to the Bike Fed, "the Madison police department is more aware of cyclists, making sure motorists yield to cyclists" (Klein, 2013). An interview with Megan Zanillo, a cyclist in Madison, exposed this relationship. Campus police pulled Zanillo over when she was biking on Dayton Street near the Charter Street intersection for not having bike lights. While the police can write tickets to cyclists who do not have proper lights, they instead gave Zanillo a free pair and encouraged her to wear a helmet. Zanillo reflected on situation stating, "At first I was annoyed when they tracked me down, but it comforted me knowing that they cared more about my safety than getting me in trouble" (2013). This priority for cyclist safety is exactly what the Bike Fed wants.

Wisconsin has also passed the "Vulnerable Users Bill, which protects cyclists from unsafe drivers, and Madison's three feet policy, which states a vehicle must be at least three feet from a cyclist at all times" (Klein, 2013). At the state level, the Bike Fed serves as "professional lobbyist that influences key legislation" in order to achieve their three main goals for Wisconsin (Klein, 2013). These goals are, "to become an epic mountain bike state", "have the most platinum communities of any state", and develop an "interconnected trail network" (Klein, 2013). The League of American Bicyclists defines platinum communities as "cities that have developed a vibrant biking culture and have built an extensive bicycling infrastructure that accommodates all skill level" (League of American Bicyclists). This vision echoes the historical bicycle history of the state. Wisconsin's original bike paths, created in the late 19th century, were expansive and laid out the foundation for the road system seen today (Historical Bike Tour of Madison, 2013). Promoting bicycling in Madison and in Wisconsin is a tribute to the past and a way to provide sustainability for the future.

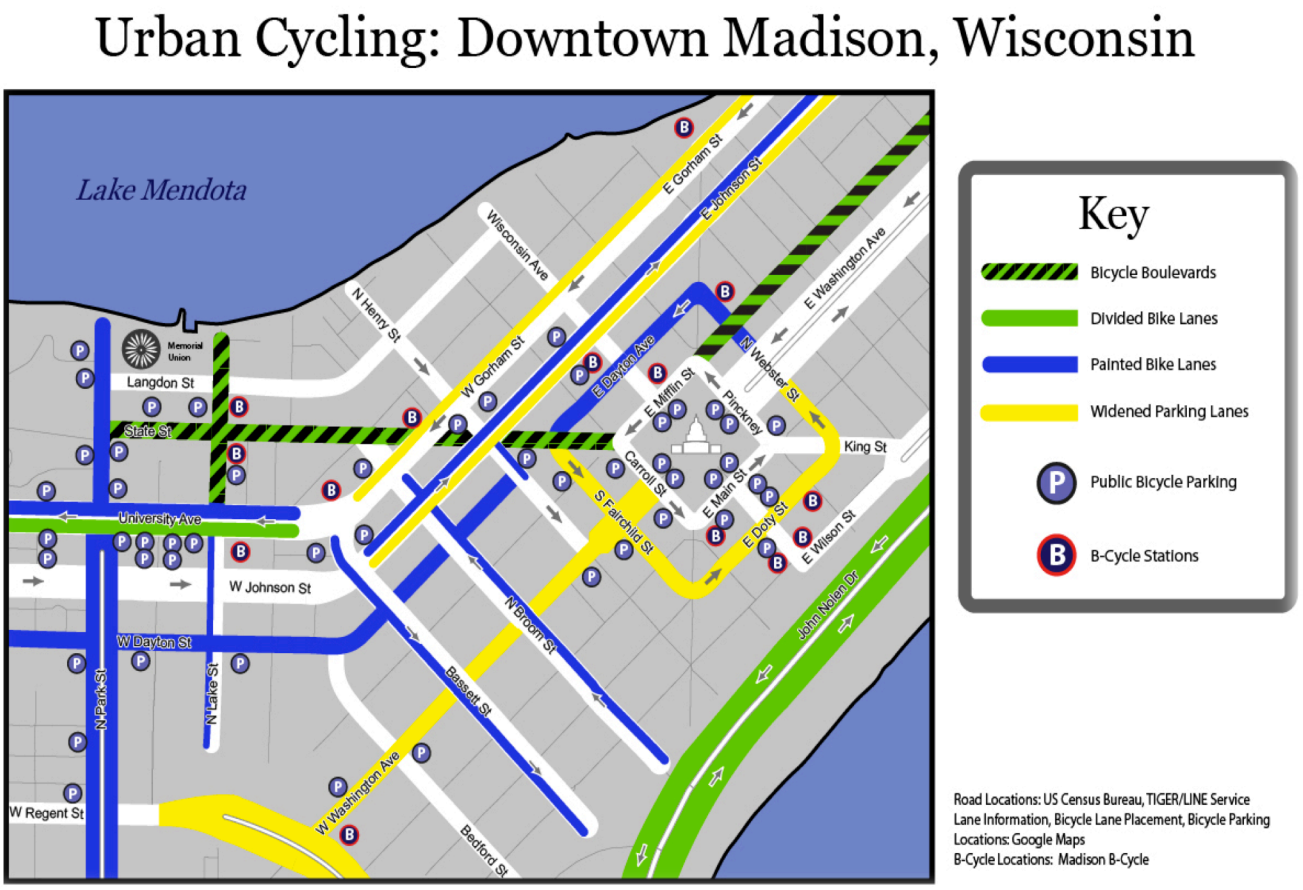
Unlike most cities, Madison proves to have a "culture that is conducive for cycling" (Klein, 2013). Cities like "New York often discourage biking, this can be seen when police consistently issue tickets to cyclists" (Klein, 2013). Madison on the other hand "gives bicyclists more of an opportunity" because cycling is "institutionalized" (Klein, 2013). According to Gemzøe, "cities that have done something to make cycling an easy choice have been successful and have the highest number of daily cyclists" (2013). Madison has a strong foundation in bicycle policy, which helps cycling become an "easy" transportation choice for its residents. But like infrastructure, there is always room for creating better policies, especially when it comes to safety.

In order to promote cycling to a diverse audience, the Bike Fed constantly produces social and educational events around town. Each quarter the Bike Fed tries to produce one social or educational event. For example, this past spring the Bike Fed hosted the Bike to Work Week. By issuing stops with tasty treats along the way, this event encouraged workers to go out and bike. Another event the Bike Fed usually hosts takes place in the fall and is called Bike Fest. This is held at the Majestic and "builds camaraderie amongst cyclists" (Klein, 2013). Gemzøe argues that most important factor in creating a bike friendly city is, "to get a set of benefits for people cycling" (2013). These events are beneficial because they reward those who already cycle and provide incentive for non-cyclists to start.

Educational programming is also important for promoting cycling. "Lunch and learns are a regular educational event that can serve as a great influence for promoting cycling amongst the target audience" (those who do not bike) (Klein, 2013). This in turn can change misconceptions in cycling and encourage those who don't already bike to do so. Relating to the Theory of Mode Choice, awareness is a key factor in decision-making (Schneider 2013, p.130). If people do not

know the benefits of cycling for both them and their community they will be less likely to cycle. Like infrastructure and policy, these promotional efforts improve bike safety and increase ridership. Madison needs to increase proper bicycle education and increase the percent of metropolitan schools that have a safe route to school. (For more information from our interview with Klein Please see Appendix C)

Bicycle Facilities in Downtown Madison:



Discussion:

With surveys, interviews, and fieldwork, we have assembled a comprehensive source to analyze the bike friendliness of Madison, Wisconsin. The results mirror our findings in preliminary research in many ways, yet are also unique given the location of our study.

Altogether, these results allow us to draw many conclusions about the current status of Madison as a bike friendly city. These results also provide information alluding to what can be improved for Madison's future bicycle culture.

To begin, the demographics of the respondents were resoundingly white, ages 17-24, and with a slight majority being female. These results are highly impacted by the location and distribution of surveys: as our focus is downtown Madison, which consists of one of the largest universities in the Midwest. Therefore, the ages of respondents were skewed toward younger age brackets. Ethnically, the majority of the individuals surveyed were white; this skew is also reflected in the University-going population, as the University of Wisconsin-Madison is 76% Caucasian (University of Wisconsin - Madison College Portrait). Because we had a large portion of respondents that were assumingly college students, this result is of little surprise. As stated in our literature review, national studies have found that cycling is not an activity shared equally by all populations (Pucher et al., 2011, p.456). Due to the small sample of ethnic minorities surveyed, our research cannot refute or affirm this statement. According to Clifford et al., "When sampling is used to make generalizations about a larger population, the aim of sampling is to obtain a 'representative characterization' of whichever aspects of the population one is interested in," (2010, p. 233). We note that our demographics surveyed are not representative of Madison as city (and of other, similar urban areas), but are instead representative of our target area: the downtown of an area populated heavily by students and businessmen. This led to a number of differences in results versus examples in our research.

While other studies noted unevenness in the gender ratio of cyclists, of which favored men, we noticed the opposite. This may indicate the positive nature of Madison's provisions for cyclists we previously noted. When there are features, which cater to urban cyclists' safety,

women become greater participants in this mode of transportation (Garrard et al., 2008, p.58). A detractor to the population of female cyclists is the caring for and responsibility of children, leading to a subsequent choice of car travel over bicycle transport (Baker, 2009). This aspect can be considered less of a factor in a university setting because overall women tend to be younger and have fewer children. Conversely, it could indicate a skew in the population sample, whereas women who cycled were more willing to take the surveys provided.

The relatively high percentage of commuters in Madison contrasts to the Pucher et al. study, which found that only 12% of all bike trips in the United States are for commuting (Pucher and Buehler b, 2008, p.499). According to Robert Schneider, the Theory of Routine Mode Choice Decisions states that the first step in deciding to use this particular mode of transportation is awareness and availability. Stated previously, "commuters must know about cycling and its benefits in order to do it," (Schneider, 2013, p.130). In our case, cycling is incredibly prevalent on the university campus and therefore is an advertisement for itself as a viable option for transportation. Similarly, our area is considerably dense in terms of commuting destinations: university students and employees headed to class and work, and businessmen and women in the dense downtown district all have parts to play in the high amount of commuting by bicycle. Noted previously, on a very basic level, urban planning affects cycling simply by the diversity and density of land use zones (Susilo et al., 2012, p.190). In Madison, we see this diversity in the great number of shops, offices, university buildings, and residential buildings within our focus area. With this density, there is a correlation between distance to be traveled and the result of transportation mode choice. Therefore this high density of services lowers dependence on cars for transportation and promotes cycling.

The university setting factors into the demographic surveyed in a multitude of ways. University students tend to have less money, and cycling serves as a considerably cheaper method of getting around than using a vehicle. Schneider, as quoted in our literature review, states that cost and convenience are the next major factors in deciding to cycle (Schneider, 2013, p.132). Similarly, university students tend to be geographically close to the university itself, making cycling a viable option for getting around campus. Another factor potentially contributing to the high rate of cycling for commuting purposes in a university setting is the high cost and lack of car parking on large campuses. Overall, the high percentage of urban cyclists, adds to Madison's overall bike friendliness.

Our primary goal for the survey was to determine the perception of bike friendliness in Madison, and to examine the corresponding features that make a city bike friendly. In this regard, we were pleasantly surprised; 94.8% of all individuals reported Madison as either "bike friendly" or "very bike friendly." Similarly, we found little difference between men and women regarding their perception of Madison as a bike friendly city. A slight difference was noted in women. More women seemed to find the bike friendliness of Madison as "neutral", as opposed to being bike friendly or greater. However, this data proved to be rather insignificant for our study because a very small percent (only 7.9) of female respondents felt this way.

Through our survey, however, we did determine that only 64% of surveyed women felt either "completely comfortable" or "safe" while cycling in Madison. 26.6% of surveyed women felt neutral regarding their safety while cycling, and the remaining 9.4% felt either "not safe" or "terrified" while cycling in Madison. Again, according to Garrard, et al., women are more likely to bike if they feel safe and comfortable, which can be improved through proper bicycle safety

infrastructure (Garrard et al., 2008, p.58). With 35% of our women surveyed feeling less than "safe," this may indicate a need for improved urban cycling design in Madison.

Surprisingly, the responses of men regarding safety were similar to women when cycling. Only 66% of men responding to our question regarding safety felt "completely comfortable" or "safe" while riding their bike in Madison. Men had a slightly higher proportion of individuals who were "neutral" on bike safety, at 30.5% (compared to 26.6% in women), and therefore had a slightly smaller proportion of individuals who felt "not safe" or "terrified," at 8.5%. In regards to the research by Garrard et al, 2008, our survey results suggest that while Madison has done a good job of making it a place where both men and women feel safe while cycling, it has a ways to go before it can be deemed exceptional.

These results also support the idea that a person with a high perception of safety, will also feel that the city is bike friendly. There was a slight correlation between individuals who had a high perception of safety and those who felt as though Madison were bike friendly. This indicates that perception of safety somewhat affects the perception of Madison as a bike friendly city. This stresses the importance of cycling infrastructure, as individuals who feel safe while cycling will be inclined to cycle more often.

By definition, urban cycling infrastructure is the physical means by which cycling is facilitated. With regards to the survey, 80% of individuals felt that bike paths and lanes were accessible or very accessible in Madison, Wisconsin. However, the remaining 20% of responders were neutral or felt that paths or lanes were inaccessible in some manner. Therefore, in addition to surveys and interviews, we did a visual survey of urban cycling infrastructure throughout Madison. We used this data to create a map of suitable cycling roads, as well as adding data on

bicycle parking and b-cycle stations, as to appropriately visualize the bike-friendliness of different locations within our target area.

Madison incorporates a number of bicycle-friendly paths and lanes in its urban cycling infrastructure. There are two main bicycle boulevards within our area of research, East Mifflin and State Street, which, due to the lack of motor vehicle traffic, make for an excellent means by which to travel by bike (Minikel, 2011, p. 246). In addition, there are a number of divided bike lanes; these lanes separate cyclists from motor vehicle traffic by dividers. This definition can also include "contraflows," or divided bike lanes that flow against traffic. According to Tom Klein of the Bike Federation, "the contraflow lane on University was the first of its kind in America." (Klein, 2013) This protected lane, in conjunction with a painted path flowing with traffic on the opposing side of the street, allows bicyclists to travel both ways down University Avenue. These types of lanes provide a significantly larger degree of safety in comparison to their painted counterparts.

Lastly, many of the other streets have either painted bike lanes or widened parking lanes to allow for cycling traffic. Whereas these are sufficient for lower traffic volume streets, there are a few heavy traffic streets in downtown Madison that we believe require a higher level of bicycle infrastructure. In some cases, a minimum of painted lanes could be added or ideally, a divided path. Examples of this would be Gorham Street and West Johnson Street within downtown Madison. By continuing to increase the number of bike lanes and contraflow lanes, we will continue to make Madison a more accessible and safe city for cyclists. Gemzøe claimed, "building a network of cycle tracks" was one of the most important developments in making Copenhagen a bike friendly city (2013), and this is also true for Madison.

Regarding other issues, bike parking in Madison seemed to be of little worry to our sampled cyclists. Nearly 80% of individuals thought that finding bike parking was "easy" or "very easy". 13% were "neutral", and the remainder felt as though bike parking was difficult to find. Doing a visual inspection of our sample area, we noted a multitude of bicycle parking, and therefore this issue seems only a minor problem in the scope of Madison provisions for cyclists. Having this level of bike parking not only eases the mind of cyclists by providing a place to keep their bike safe while at their destination, but also prevents the problem of illegal bicycle parking in the city.

Lastly, in an interesting twist, we found that although the perception of bike friendliness in Madison is relatively high, very few people reported being familiar with the B-Cycle bike-sharing program. As B-Cycle has over 350 bicycles and 35 locations throughout Madison's downtown (Madison B-Cycle), we hypothesized that it would have a wide rate of usage within the demographics of our survey sample. Despite our findings, B-cycle is an important feature in downtown Madison, as it allows individuals to have the benefits of a bicycle without having to pay for one, or worry about its storage.

Based on our survey results, we can conclude Madison is a bike friendly city. Nonetheless, we believe it has a ways to go in being an ideal city for cyclists.

Conclusion:

After fully examining the literature on bicycle demographics, infrastructure, policy, and advocacy, we can confidently determine what constitutes a bike friendly city. From here, we can begin to see why bike friendliness is an important characteristic of livable cities. When urban bicycling is safe, convenient, and accessible for all of the city's residents that can bike, it becomes the most equitable form of transport. This equality adds to the livability of a city

because most citizens can feel included in the bicycle community. A city with more bikes is also more enjoyable because of reductions in air and noise pollution from decreased car use (Gemzøe, 2013). A livable city is also a healthy city, and commuting daily by bike encourages this healthy lifestyle. Cycling gets people out on the streets, and allows them to fully experience a city and all it has to offer. For example, 19% of cyclists in Copenhagen say they bike because it is a way for them to discover the city (City of Copenhagen, 2011, p.5). When people know their city in this way, they can foster a deep sense of place and a connection to the neighborhood.

Throughout our research we have learned of Madison's strong historical bicycle cultural. And due to these historical ties, Madison has continued to invest time, money, and land dedicated to cyclists. From our research we can confirm that Madison is a bike friendly city, but there is room for improvement. Our survey results showed a high rating of safety and bike friendliness amongst citizens, proving that Madisonians are satisfied urban cyclists. Because bicycle advocacy has strong historical ties within Madison, cycling is not only a sustainable activity for the future, but also serves as a tribute to Wisconsin's past. Historic advocacy groups, which praised the bicycle as a way to solve societal problems of equality, have influenced the city's current bicycle infrastructure and culture. This influence is represented in the high perceptions of safety and bike friendliness by both genders and the large number of utilitarian cyclists in the city. Because bicycling is as a more equitable form of transport, it has the potential to reach a wide range of people. Today, bicycling is no longer a childish pastime, but an activity that can help the environment, both built and natural, while promoting equality and community among its residents.

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Appendix A:

Lars Gemze Cities Magazine Interview

- What is the new future of the city?
  - Most people will live in cities, so we better make them great to live in. Cities will have to make mobility more flexible and coordinate many modes of traffic. Not just cars or transit but linking mobility across from walking, cycling, transit and driving in private cars. Walking and cycling will be seen as very important parts of the whole issue of mobility. Walking and also cycling are important modes of travelling and they are the glue or link between the other modes of mobility. Most trips have a walking component – even if it is a car trip. Walking and cycling has much in common: You can easily stop and talk with someone or look at something you want to buy etc, simply do other things without waiting for the right place to park or the next bus stop. There is much more to walking and cycling than moving from A to B. They are faster than other modes on shorter distances and the infrastructure takes up little space. Furthermore the modes of transportation make no noise, are healthy and non-polluting, so there are many benefits of taking soft modes of traffic seriously. On the other hand it implies a lot of other things for physical planning to take care of like for instance relative high density, mix of functions to give proximity to daily needs.
- Most cities compete (in many rankings) nowadays using criteria of a liveable city. What is it?
  - Liveability as I see it is a holistic way of looking at the quality of life in a city. Is it a good place to live your life? Is it safe and people friendly? Is it easy to get around for everyone? Is it a healthy place and so on? A lot of qualities for people in daily life.
- What is the sustainable transportation? What are the basic modes of transportation like this? How it corresponds with mobility for all and with liveable city criteria?
  - Sustainability has become quite a buzz word but there is no doubt that more focus on soft modes of transportation, like walking and cycling in combination with transit are the most sustainable modes of traffic. They take up less space, are none polluting and can be used individually by most age groups as well as income groups.
- You often use a term of a soft people city. What is the soft people city?
  - The soft city is the city were you see people on the streets and squares and not just metal boxes on wheels with somebody inside that are hard to see from the reflexions of the windscreen. The soft city is the city where you can meet people at eye-level...and maybe even get a smile. It makes quite a difference for the experience of a city you <u>see</u> people in the public spaces like the streets and squares, or if you just experience cars everywhere.
- You argue that we need to focus on public life, that we need city departments of Public Life. What is Public Life and why we need to take it under consideration so much these days in the process of developing our cities and in the transportation context?
  - This idea comes from my experience starting years ago and in most places still the case. Namely that planning needs data and most cities has traffic departments, that have endless data about vehicular traffic, so car data were dominant when it comes to design of public spaces like the streets and squares of the cities. So if the problems of the city were solved based on data, it would be car data and the solutions would mostly reflect the car users needs. Years ago my old friend and colleague Professor Jan Gehl started to collect data about people in the City of Copenhagen from the

1960s and continued to do so basically every 10th year: Were are people moving around, where are they staying, what are they doing. Basing the planning of public space on data about people on foot or on bicycles give a very different result than what was the traditional traffic planning. Together we published a couple of books about the development of people activity in relation to the number and quality of the car-free spaces that the city offered and there were very clear correlations between the number of square metres of good car-free spaces and the number of people spending time in the same spaces. The number of people spending time in the spaces increased almost four times from 1968 to 1995 and the city offered almost four times more car-free space in the same period. So the more good space that the city offered, the more people activity. That documented that the policy of supplying car-free spaces were very popular - people voted with their feet – regardless of the usually heavy debate about loosing car parking etc. That made the politicians convinced that it was a good policy to do more and the City of Copenhagen transformed itself from a city full of cars to a lively city full of people. The citizens changed urban culture over the decades and now the city's streets and squares are used to multiple out of doors social meetings and cultural events as well as a large increase in out door café life.

- To do it, we need to have people data, making people visible in planning, as we do have lots of data on vehicular traffic, but not on other users of streets, and data is the key in working on cities. Is human/people data a basis for the new future of city? Why?
  - Collecting the data and presenting the people data gives a very different „picture" of the city compared to traditional traffic-data. It simply makes people visible in the city planning so other problems and solutions become possible. The City of Copenhagen is now making „Urban Life Accounts" which are data about what the city has done in the public realm and data about how many people who use the spaces and what they are doing plus data about what the citizens think about it. The most recent Public Life Account 2011 in English can be downloaded from the City of Copenhagen's website.
- What is the role of public space and human quality criteria in this context and in the contexts of transportation?
  - Public spaces in a city are were we move around and they are the „common living rooms" for people to participate in social life, in the meetings with other strangers as well as with people you know. It is a basic prerequisite for democratic social life.
- To create a change of car-oriented environments, we need to change the hardware and the software of our cities. What is the hardware and how it influences the common modes of mobility? What is a balanced street scape and is it a part of a hardware?
  - Do balanced streetscape and a good hardware provoke a sustainable use of public space (walking, cycling, public transit, public space)? Could you use some examples please?
- What is the software (could you explain it and use some examples please)?
  - Often there is a strong focus on the „hardware": The cycle tracks for instance which of course are a very visible elements when a city is changing direction of planning. But the „software", the building of a new traffic culture is just as important: Training of children cycling to schools, campaigns on safety for cyclists and pedestrians, campaigns to make people cycle to work etc. A balanced street in my view is a street were the priorities are made so that walking is no. 1, cycling no. 2, transit no. 3 and

car driving no. 4.The softer modes like walking and cycling are the most vulnerable and must have special attention particularly is a city would like to see them grow.

- How can we change the culture of mobility, the states of minds of inhabitants (could you use some examples and some indicators of change connected to it please)? How to build a new culture of mobility? (Could you use some examples please)?
  - One of the key elements in the case of Copenhagen and later in cities like Melbourne or New York, where we have been giving advise, has been to supply people with good quality car free public spaces and over the years people start using the spaces and simply change the way they see their city. As a more recent example the City of New York has made hundreds of pilot projects where they simply change the use of the asphalt of the streets by painting cycle lanes and colourful painted areas for sitting. So the areas where the cars used to be are now furnished with simple movable chairs and tables for anyone to use. To put is shortly with an example: Americans most often would think that coffee is „coffee to go" in their culture and that sitting in streets and squares is a European thing. But when they got the new painted spaces with chairs and tables they suddenly began to sit down and enjoyed life very much the same was as we do, so coffee suddenly turned into „coffee to stay". It has been a great change to the whole feeling of the city and a very quick one. The citizens have voted with their feet and are now sitting down in great numbers and the city is changing character. Many of the pilot projects like Times Square are in the process of being totally redesigned and made in more lasting materials than the painted asphalt. Same thing in Melbourne years ago: when they got the good spaces, the liked it much more than they expected. For more details please see the report „World Class Streets" by the Department of Transport for the City of New York. (It can be downloaded from our website for free: www.gehlarchitects.com).
- What is the role of monitoring and surveys in the process of such a change? Could you explain it, using some particular examples, for example form Copenhagen?
- And how can we convince cities authorities that the change of mobility modes into sustainable is worth doing? Why is it urgent and worth doing? In some places in Poland it's not so obvious yet, I think.
- What advantages does such a change have? Social and others?
  - Cities compete to become the most liveable place because it not only makes the citizens happy with great quality of life for themselves but also because it is seen as a component in attracting high quality workforces in the new economy. If one can get a high paid job anywhere, which city would then offer you the best life for you and your family? Best recreational facilities, best housing, best schools, best cultural facilities and the healthiest and easiest way of getting around for all parts of your family? That could very well the choice that a person moving to your city would have to take in consideration. Melbourne has become one of these top cities and has had social as well as commercial success making the city so much better for people. For more detail please see the report called „Places for People, Melbourne 2005" from Gehl Architects. It can be downloaded from our website for free (www.gehlarchitects.com).
- Is promoting cycling and walking worth doing also in an economic sense for a city? What are the socio-economics of it? (Could you use some examples please?)

- The City of Copenhagen has made cost benefit analysis about the benefits of cycling for example. Society gains are 1.22 Dkr per extra km travelled by cycle in Copenhagen and it has additional costs of 1.13 Dkr per extra km travelled by car. For more details please download the „Copenhagen City of Cyclists - Bicycle Account 2012" from the city of Copenhagen's website.

- What are the characteristics of a good public transportation system?
- And why we need it?
  - A fine transportation system is simple to use, easy to get around in for everyone. It offers individual and collective mobility for many different age- and income groups. Walking and cycling integrated with public transit are the keys to success. There is a growing need for city living as most new jobs are generated in the cities. Cities grow and easy transportation and quality of life are very important things to combine for any city now and in the future. Political will is necessary to make changes in the city that prioritize soft modes of traffic and great quality of life.

Appendix B:

Cyclist Survey

Thank you for taking the time to complete this survey by "Urban Cycling". Your feedback is important to us in how we can better improve our research. All questions are voluntary and you may withdraw any answer or discontinue the survey at any time. This survey should only take about 2 minutes of your time. Your answers will be completely anonymous. All survey results will be published in "Urban Cycling's" thesis paper where aggregate data compiled from survey study group may be used at our discretion. As a participant, you are welcome to attend the symposium where project will be presented.

This survey is based off of Madison's Downtown and UW campus area. Please take this location into consideration while responding to the survey.

1) What is your gender?
   - Male
   - Female
   - I'd prefer not to say

2) Which do you identify with?
   - White
   - Hispanic or Latino
   - Black of African American
   - American Indian or Alaska Native
   - Asian
   - Native Hawaiian or Other Pacific Islander
   - Multi-Racial
   - Other
   - I'd prefer not to say

3) Age:
   - 17-24
   - 25-34
   - 35-44
   - 45-54

- 55-64
- 65 and older
- I'd prefer not to say

4) How bike friendly is Madison?
- Impossible to Bike
- Not Bike Friendly
- Neutral
- Bike Friendly
- Very bike friendly

Comments:

5) How safe do you feel when biking in Madison?
- Terrified
- Not Safe
- Neutral
- Safe
- Completely comfortable

Comments:

6) Do you cycle year round in Madison?
- Yes
- No

7) What is your main purpose for cycling in Madison? (Please rank from 1 to 5 in order of importance. 5 being the most important and 1 being the least important)
- Commuting
- Recreation
- Exercise/Sport
- Inexpensive Transport
- Environmental

8) How accessible is Madison by bike?
- Extremely inaccessible
- Not accessible
- Neutral
- Accessible
- Very Accessible

9) How accessible are bike paths/lanes in Madison?
- Extremely inaccessible
- Not accessible

- Neutral
- Accessible
- Very Accessible

10) How easy is it to find bike parking in Madison?
- Very Difficult
- Difficult
- Neutral
- Easy
- Very Easy

11) How familiar are you with Madison's B-Cycle Program?
- What's B-Cycle?
- Not familiar
- Somewhat familiar
- Fairly familiar
- Very familiar

12) If familiar with B-Cycle, how often (if ever) do you use it?
- Never
- Annually
- Less than once a month
- Monthly
- Weekly
- Daily
- Other

If other, please comment:

Appendix C:

Additional Field Notes from Tom Klein Interview

What are positive traits about cycling in Madison? Does Madison excel in a certain areas of cycling?
- Twiddle at north Sherman Avenue initially faced business opposition – however with the new infrastructure cyclists are more likely to see the businesses
- Monroe and Regent Street – built a more smooth intersection for cyclists
- We have a common council

What are you currently doing to promote cycling in Madison? (Upcoming events?)
- Each quarter Bike Fed tries to produce one social or encourage event
- Educational programming – "Chose to Commute" at Redmate on State Street (safety tips targeted at college and young professionals)
    - Branded in a way geared towards younger individuals, they receive a set of lights for free
- Where you promote cycling for younger people is key, kiosks on state street, study spots on campus

Who is your target audience? What are you doing to encourage cycling amongst women and other minority bicyclist populations?

- Target audience is large and diverse, all bicyclists
    - This creates unique challenges
- Figure out what you can rally behind – helmets?
- Minority – target leaders in minority communities
- Use a sustainability background – empower change in the community, not just tell them what to do
- Bicycling can be a tool, I act as a resource when they need me
- Michael Johnson- minority leader in community- empowers change- shows bicycling is a tool
    - Committed to riding daily, nightriders catalyst within the Boys and Girls club. Using it as a health tool
    - Provided him with a platform and stayed on as a resource. Now goes on 4:30 am bike rides
- Women cyclists and minorities are the two largest groups increasing in % of cyclists in the country
- Infrastructure, overcoming apprehensions and objections - Women
- Infrastructure safety component, work with city to install lights on the path
- Williamson street- only a certain group of cyclists can ride on it. Not everyone. The question can't be can it be done, but rather how can it be done for all members of society?
- 5 E's:
    - Engineering – infrastructure
    - Education – folks understand the rules and act safely
    - Enforcement – obey the law
    - Evaluation and planning- how do we know that we are succeeding, mode share
    - Equity – tool for driving equity in tools

What policies has the bike fed helped implement in the past? What are policy goals for the future? (Infrastructure? Safety?)

- New ways for signage, and bike paths
- Help other cities in Wisconsin that want to make their first bike lane – right facility and right area of town

What are your next steps to creating a more bike friendly city here in Madison? Have you looked to cities like Copenhagen for motivation and new innovative ideas?

- Always look at other cities for motivation
- Externally isn't a winning argument – we are not Europe; those cities are so different than we are. Easy to write it off as fringe
- Like to focus on communities that are similar to us, Boulder, Davis, similar in population and similar mode sizes, topography and ranked as high as us or higher, so see what they are doing
- Once we achieve platinum we will be the fifth and then the next goal is diamond which no city has received before
- Wouldn't it be great if we achieved diamond under your watch (say to lure political leaders)

- Bicycle friendliness- truly bike friendly city, one that hasn't biked who has lived a car dependent lifestyle go out purchase a bike and feel comfortable
    - Is there a supportive network of bike shops?
    - What does being comfortable actually mean?
        - One thing if I feel comfortable, what about people that are not regular cyclists?
- How does someone who just started riding feel?
- 20-20-20
    - Made for the Bike Fed
    - Almost want to make them unachievable – set the high benchmark so you work towards a challenging goal
- 6% mode share – see this as low
- This week my main mode of transport was…
    - Presents biases, depends on when the survey was issued. Weather, etc.
- Evaluation – implementing city-wide counts, benchmarking process by Alta planning
- Think it is closer to 10% mode share
- Goal should be a challenging one

Final Remarks By Klein:

- League of American Bicyclists' Diamond status looks at all of the Es for evaluation
    - Education is super important to them
    - Needs certain number of points
    - Unlike that LAB have qualitative and quantitative, determine as a group. A moving target, can be challenging for municipalities
    - Can't simply say, "By doing this you'll achieve platinum". This would make things a lot easier
- Madison is not where it wants to be in terms of its goal for itself, but is bike friendly in terms of other cities in north America