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Alex Schieferdecker
Macalester College

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Pedal Talk

The Fall and Rise of Bikes and Bike Sharing In the Twin Cities

Alex Schieferdecker

Macalester College

On a chilly March morning in 2012, a truck sped through the Twin Cities of Minneapolis and Saint Paul, Minnesota. In the back of the truck sat three distinctive green bikes and 15,000 pounds of ice cut into rectangular blocks. Working to beat the morning rush, a couple of workers offloaded the first bike on the Nicolette pedestrian mall in downtown Minneapolis, then piled the blocks around the bike, completely trapping it in ice. In the Uptown neighborhood, they hurriedly repeated the process with the second bike. Not long after, they entombed the third bike at Rice Park in downtown Saint Paul. Mission accomplished, these mysterious figures drove off, mixing with the rush hour crowd.

The odd spectacle of the green bikes trapped in ice got attention, with coverage on local news and plenty of curious inspection from passersby. But there was nothing tremendously weird or revolutionary about this publicity stunt. The residents of these two northern midwest cities were more than familiar with ice, and with the bikes inside.

The clunky, lime green bikes were just about to start their third season on Twin Cities streets. Launched in June of 2010, Nice Ride Minnesota was an immediate success. The initial season (Nice Ride shuts down through the course of the Minnesota winter) logged over 100,000 rides despite beginning midway through the summer (Vars 2010). The following year, the system saw over 200,000 rides (Abbey 2011). The management of Nice Ride and their financial backers, including the City of Minneapolis and Blue Cross Blue Shield of Minnesota were thrilled with the results and planned to grow the program. For the second season, the system had added

stations and bikes in Minneapolis. For the third, the group was poised to expand into Saint Paul. As the ice-bound bikes slowly melted throughout that Monday in March, they sent a message to those who saw them on the street or on tv.

“We’re back, and we’re here to stay.”

When Nice Ride MN started in downtown Minneapolis, it was just the second major American city and the third on the continent to start such a system. Only Montreal’s year-old *BIXI Montreal*, and Denver’s *Denver B-Cycle* were out there for comparison. Washington D.C. was lagging just a bit behind, prepared to launch that September. It was an ambitious and potentially risky policy. There were essentially no case studies of bike sharing that hadn’t ended badly. A pioneering system in Paris, the inspiration for Minneapolis—as well as Montreal and Denver—had seen nearly 80% of its initial 20,000 bike fleet stolen or damaged (Erlanger and Baume 2009). Critics also had local ammunition. A popular model of bike sharing known as ‘Yellow Bike’ had been rolled out a little over a decade earlier in Saint Paul. The project ended in just three years after nearly 100% rates of bike attrition, creating a public conception of bike share as a fool’s errand. What was to stop the new bikes from ending up repainted in private ownership? Or strewn in parts along the road? Or at the bottom of the Mississippi? Many Twin Cities residents asked; “didn’t we try this already?”

One commenter on the Nice Ride website exemplified the general feeling of distrust among some local residents towards the new program. “When this program is finally ended all these green bikes should be hauled over to the Cedar Square West development... and parked in the courtyard as a permanent display. That area could be used as a repository of government funded failures, a kind of junkyard museum of Progressive nonsense,” (One-Eyed-Jacks 2010).

Just two years later, these criticisms seem laughable. In the Twin Cities, bike sharing has advanced in leaps and bounds. For Nice Ride, 592,392 rides have been taken in two and a half seasons, with nearly 275,000 coming in the past year (Vars 2010, Abbey 2011, @niceridemn 2012). In that time, just four bikes have gone missing, and one was later checked back in—the next year. The system has expanded every season, and plans to grow again in 2013 (Williams 2012). While Nice Ride's reign as the nation's largest system lasted only until Washington got into the game in the fall of 2010, the system remains in hot pursuit. The system uses over 1,300 bikes and had 145 stations in 2012. In the inner city, the distinctive green bikes with blue wheel covers standing smartly at attention on street corners are hard to miss.

But if Nice Ride has started off with a bang in the Twin Cities, it's nothing compared to the explosion of bike sharing across the country, and the world. It has been estimated that there are now over 300 bike sharing systems in cities big and small around the globe (Sood 2011). Before 2007, that number was almost certainly less than 20. That year, the socialist mayor of Paris, Bertrand Delanoë, started the Vélib program. Despite the early issues with vandalism and theft, between 50,000 to 150,000 rentals were reported every day in 2009, sometimes matching Nice Ride's entire introductory year effort in just 24 hours (Erlanger and Baume 2009). The system's eye-catching success was a revolution in urban transportation. Across Europe, bike sharing bloomed. Today, it's hard to find a major European city without an extensive bike sharing system.

In 2009 the Parisian ideal crossed the Atlantic Ocean to Montréal, and in the new world, it experienced a second explosion. The Public Bike System Company was the entity created to develop the new Montréal system. It largely copied the Paris model and achieved immediate

success and acceptance. But it also synthesized several key innovations (discussed later) in bike sharing technology, which made the idea significantly more palatable to cities without socialists in control. This North American model became known as BIXI, and it provides all the benefits of bike share with significantly less risk in terms of theft and vandalism. Mayors across the continent, including R.T. Rybak of Minneapolis, took note.

Montréal, Minneapolis, Denver and Washington led the pack. But in the last couple years, Boston, Charlotte, Chattanooga, Madison, Miami, Ottawa, San Antonio, and Toronto have all begun their own efforts. In early 2013, New York City will join the movement, launching a titanic system sponsored by CitiBank that will immediately become the largest in the Americas, with 600 stations and 10,000 bikes.

In just three years, bike sharing in the Americas has gone from a failed utopian project to an urban living revolution that shows no signs of losing steam. It has matured in a tremendously quick time. As you read this, bike sharing systems across the hemisphere are converting new users and changing the fabric of inner city neighborhoods (Pucher, Buehler, and Seinen 2011).

While the phenomenon of bike sharing spreads, it's worthwhile to ease up on the pedals for a moment and consider how we came to this point. The questions guiding my research and this essay on bike sharing split into two themes. First—how does bike sharing work? How do the new waves of bike sharing systems avoid the problems of the past? How do they change cities? How are they economically sustainable?

The second—how does bike sharing work *for us*? Why bike sharing in the first place? How does bike sharing advance the goals of environmental sustainability? How does bike sharing advance the goals of social sustainability? How does the new model of bike sharing serve the citizens better than those that came before?

Method

I've used the term 'sustainability' deliberately in the preceding paragraphs. Bike share is usually understood as a sustainability initiative. Sustainability is a big and broad concept. In 1987, the World Commission on Environment and Development produced a report entitled *Our Common Future*, which coined the term 'sustainable development' and launched the idea of 'sustainability' into the mainstream. The commission was led by the Prime Minister of Norway, Gro Harlem Brundtland, and their final report is usually referred to as 'The Brundtland Report'. This document laid out the idea of sustainability to a global audience. It argued that sustainability must be understood in three parts; economic, environmental, and social, and that pursuit of all parts is necessary to preserving our species' future on this planet (WCED 1987). Economic sustainability means the ability of global capitalism to continue to produce goods and services. Environmental sustainability is the ability of the environment to survive human interference and to continue to provide natural resources. Social sustainability is often the most overlooked, and it frequently is believed to run headlong into economic sustainability. It refers to the ability for society to provide opportunity for all citizens, and a decent life even for those who struggle.

Choosing to look at bike share from a sustainability perspective is a fairly intuitive call to make. City biking is one plank in the platform being pushed around the world by advocates who explicitly make sustainability their focus. On Nice Ride's website, a few of the given reasons for participating in the system leave no doubt that this is the case in Minneapolis;

"Avoiding vehicular congestion"

"Reducing our carbon footprint"

"Less dependence on fossil fuels".

(Nice Ride – About, 2012)

Bike share promotes itself in the language of sustainability, and thus the lens of sustainability is the perfect one to examine the effects of bike sharing systems.

The geographic target of my writing here is on the Twin Cities of Minneapolis and Saint Paul, although it will occasionally bring in examples from around the world. This is almost exclusively because of convenience. If I lived in Boston, I would be writing about Hubway, or if I lived in Washington D.C. this would be an article about Capital Bikeshare. That said, I will selfishly advocate for the Twin Cities as more than just a location chosen out of laziness. The Cities are unique in having one of the most noteworthy bike share systems in the country, a system that has operated for a relatively long period of time, and in an environment that is broadly representative of many sprawled U.S. cities. Even more important is the recent relationship that the Twin Cities have with a large scale bike share failure. This handy and unfortunate foil comes in the form of Saint Paul's Yellow Bike Hub program, the 1990's system that lost nearly all of their fleet in three years. In my work, I've aimed to not just extoll the virtues of Nice Ride and bemoan the calamity of Yellow Bike, but perform a proper compare and contrast between the two systems. To do this, I've sought out and interviewed representatives for both systems, combed newspaper accounts about both systems, and reviewed the growing academic literature about bike sharing. In reality, I find that the Yellow Bike was hardly as naïve a system as is remembered, and Nice Ride's benefit can be easily overstated. Both systems aimed to promote sustainability, but were focused on different planks of the sustainability program. For reasons that will be explored, they each met with different degrees of success. In sum, this essay aims to provide two case studies

for the price of one: an investigation into what causes bike share to succeed or fail, and the costs and benefits of different approaches. Ultimately I find that the benefit provided by bike share is small. However, the ways that bike share changes public perceptions about bike use, alternative forms of transportation, and city living are impossible to quantify, yet constitute bike share's largest contribution to urban sustainability.

Nice Ride

I met Bill Dossett in the café of the Freewheel Midtown Bike Center, where Nice Ride's headquarters are located. The bike center is a temple for the Twin Cities bike community. It sits directly behind the abandoned Sears store and processing center, which has now become an eclectic combination of upscale apartments, offices, and ethnic food marts. The front door of the bike center is on the Midtown Greenway, a sunken-railroad-turned-bike-trail that cuts across town to the river. There is no other door. The Greenway itself is another case study and another essay. It runs from some of the trendiest neighborhoods in the city through some of the poorest. Commuters, locals, and casual bikers head down the Greenway at all times and conditions. If they need gear, a fix, or just some organic coffee and a whole grain muffin, they'll stop at the bike center. For Nice Ride, it was an obvious place to set up shop.

Mr. Dossett is the organization's executive director. He is middle aged, impossible to mistake for a foolish college kid chasing a utopian vision. Yet one of the first things you notice about him—after his height—is his energy. He is physically fit. Every step he takes has a bounce to it, and he pivots from one activity to another without wasting any time. As I claim a table and

retrieve my notebook and recorder from my bag, Dossett grabs a cup of coffee and allows himself to be talked into buying a new pastry from the café. This is his ‘breakfast’.

He sits down across from me, and almost I almost immediately manage to spill his coffee everywhere by bumping the comically uneven table.

“Let’s get a different table, this one isn’t going to work...” Dossett says, shooting up and striding over to the one right behind me. I take note of the metaphor.

A successful lawyer in the past (but not too past) life, Dossett was recently in the midst of enjoying some dedicated time off working with his passion, The City of Lakes Nordic Ski Foundation. At a party, he was approached by his friend, the mayor of Minneapolis R.T. Rybak, who had one of those proverbial crazy ideas that just might work. Rybak, who was nearing the end of his second term of office and would cruise to his third, wanted to start a bike share program. He had been to various conferences of mayors, and had heard about the bike sharing revolution in Europe, and had heard that Montréal was on the cusp of starting their own program. Would it make sense to work with the Ski Foundation?

It’s clear that Dossett has told this story before, he had a ready answer to nearly everything I asked him. As the head of the organization, Dossett could plausibly take a backseat in the public promotion of his organization, yet he is a omnipotent figure at every Nice Ride event. He is often the main presenter, running through a tried and true power point aimed at converting the unsure and inspiring the convinced. He speaks about Nice Ride and bike sharing in general with a tremendous amount of confidence, as if this was the project of a lifetime and not just four years.

It’s all the more remarkable because of how quickly things went. The Twin Cities Bike Share Project, a group founded with the support of Rybak and the Ski Foundation started in the summer of 2008. They studied existing bike share programs, watched the rollout of the Montréal

effort closely, and settled fairly quickly on that model of system, supported by a non-profit entity that would be separate from the city and funded through sponsorships. Blue Cross Blue Shield of Minnesota was lined up to be the program's major sponsor less than a year later. The effort coincided with the election of a Democratic President, Barack Obama, who renewed federal interest in promoting public transit. Transit for Livable Communities, a federally funded non-profit working to create (as you might expect) more transit options and livable communities was another early backer. The following year, the group hired the Public Bike Share Company—of Montréal—to provide the infrastructure for the system, and within a few months, the bikes were assembled, the stations were programmed, and the system was put into place just two years after the earliest building blocks had been laid (Nice Ride – About 2012).

Initially, Dossett and the rest of the staff weren't quite sure what to expect. Their experience with other bike share programs had told them that Nice Ride would be successful. It followed a formula that had proven, in a very limited amount of time, to be a solid one. Yet there's no good (or cheap) way to beta test a system that relies on critical mass in real world conditions to work. Nice Ride would need to sink or swim in the real world.

Yellow Bike

A little over a decade earlier, in the summer of 1995, a small team of volunteers got an idea for bike share from a program in Portland, Oregon. The scheme was simple. Unused bikes would be donated from the community. They would be fixed up and painted yellow by a youth group; Save Our City's Kids (known as SOCK). Then, they would be left around downtown Saint Paul for anyone who wanted to use them. On September 1st of that year, the Saint Paul Yellow Bike Coalition, along with then Mayor Norm Coleman—an association the later Republican Senator

might wish to forget— distributed the initial offering of twenty five bikes around the city. One week later, people were wondering where they all went (Ojeda-Zapata 1995). The ridicule came pouring in. One writer for the *Saint Paul Pioneer Press* suggested that citizens had discovered a magical way to get rid of their unwanted items by painting them yellow and parking them on the street. He suggested the practice be extended to “worn-out old appliances, broken toys...and crabby old Scandinavian governors,” (Boxmeyer 1995). Another wrote, “Why don't we have yellow boats, too, and yellow toasters and yellow winter boots? Because this ain't a commune that's why,” (Soucheray 1995).

After the first tentative fall season, the Coalition regrouped with a few changes for the following year. In particular, the entire bike was painted yellow—including the tires and seat—and the launch for the following spring was planned to be much larger, with the theory that the more distinctive, ugly, and common the bike, the less likely it'd be stolen. (Nelson 1995). The Yellow Bike Coalition had some reason to be optimistic. Despite the reality of vandalism and theft, community members had responded overwhelmingly with donations to replace and expand the fleet.

Yet for a second year, their hopes were dashed. Most or nearly all of the bikes left on the streets were stolen. Even while the idea has since spread to other cities like Austin and Tampa, (Berger 2006) those behind the original project in Portland literally disappeared without a trace (Hall 1997).

In 1997, Yellow Bike rebooted again. Armed with a fresh perspective that the *Pioneer Press* wrote was “without its customary dash of faith in humanity,” the group re-launched as a ‘Hub’ system (Nelson 1997). The Coalition’s change was supported by three-year grants from the state which brought the program back on its feet financially. Working like a library, participating

businesses would hold a small number of yellow bikes, available to be checked out by subscribers who had paid a small fee. It was a more feasible change, but it was a definite downgrade to the group's vision.

The geography of the project also changed from the Saint Paul central business district to the businesses on the city's western half, especially along Grand Avenue. This formerly mixed income street was in the midst of heavy gentrification and business revitalization.

Yellow Bike Hub was significantly more problem free than its predecessor, although vandalism and theft were still serious issues. It operated until 2000, when the state money ran out and it died a quiet death.

But Yellow Bike also ran up against a contradiction between its reality and its ambition. Before the program began, its founders had been involved in programs that promoted cycling and giving away bikes to citizens. Yellow Bike was an attempt to reach more people—instead it largely continued the work of giving away bikes, just with more vandalism thrown in. Many of the volunteers and organizers of the program returned to their original methods in 2000, founding the Sibley Bike Depot (now Cycles of Change or C4C) and focusing back on community-specific bike programs.

C4C runs a cluttered headquarters just off of University Avenue in Saint Paul. The group moved from the downtown recently. The walls of the depot are painted green and lined with bikes and bike parts. Around the floor of the shop are bikes being worked on by volunteers. While the Freewheel Midtown Bike Center presents a trendy and cozy portrait of bike culture, C4C's headquarters is greasier and disheveled. The Development and Outreach Director of C4C is Jason Tanzman, a young man with a study red beard and the longest involved member with the program. He is a passionate advocate for the biking and especially social sustainability. Tanzman

joined the organization six years after the Yellow Bike failure and the founding of Sibley, but it wasn't long enough to escape the Yellow Bike cloud. His interpretation of the program is more positive than the scathing newspaper reports or acid message board comments, but he acknowledges that it never had the impact that was intended. Committed to creating community through biking programs, he insists that the current model that C4C pursues has more of an impact. The program runs open shop nights, and gives store credit for volunteers. In addition, the group donates hundreds of bikes every year to community organizations. Tanzman is proud of what C4C has been able to do, and believe strongly in their power to change lives through bike outreach. He seems comfortable talking about Yellow Bike and defends the thought behind the program, but it's obvious that he does not see much use to the bike share model that the program pioneered. C4C has found a way to increase bike access and visibility to Saint Paul residents in the same way that Yellow Bike intended, just with much less of the hassle.

Nuts and Bolts

Nice Ride, Yellow Bike Hub, and other bike share systems put into place after the demise of the free-bike model do not run dramatically different from each other. The principle is the same; it starts with hubs or stations which keep the bikes when nobody is using them. Ideally, there are as many hubs as possible, as densely packed as reasonable, and they are in useful locations to users. When a user wants to take out a bike, they walk a short distance to the nearest hub. They in some way prove that they are a member of the bike share system, or pay up-front as a non-member. They then take the bike out for a designated time, before returning the bike to the same station, or a different one depending on the complexity of the scheme. This model is familiar not just to urban dwellers, but to anyone who has rented a bike for a day to go explore a national

park or enjoy the sights and sounds of the boardwalk. Bike share, strictly speaking, is not much different than bike rental on a city-wide scale.

But there are some important differences. When you rent a bike for a day ride, say on a vacation, it ought to cost significantly more than the average bike share trip. Consumers of bike rentals are a different group than the general populace. They're likely more fit, they have confidence with biking, they have enough money to spend on leisure, and they don't have anywhere to go particularly fast. Bike share aims squarely at these people—make no mistake—but also ideally attracts a different crowd as well. A comprehensive, widely adopted bike share program should provide a comfortable and safe alternative to people who are not natural bikers, who are struggling to make ends meet, and who have places to go on a strict timetable. Achieving these aims and reaching these different groups requires a different approach than the tourist bike rental shops.

City residents going about their daily business are the ideal average users of bike share. Yellow Bike Hub assumed that users would not take the bike out for much longer than a day. Nice Ride restricts rides to 30 minutes—or the user pays a fee. If your trip will take longer than the allotted time, you must dock your first bike and pick up a new one to restart the clock. Bike share is designed to facilitate short trips within the city, not daylong tourist joyrides or even long commutes. When I wondered aloud if Nice Ride had thought about providing bikes in suburban communities to facilitate a sort of 'Park and Ride' morning commute, Bill Dossett looked at me as though I was from a different planet. Nice Ride has a very specific use.

There are two principle differences that have allowed the bike share systems of today's Minneapolis to be so much more successful than last decade's Saint Paul. The first is that the

technology has changed dramatically. The use of radio-frequency identification (RFID) chips has singlehandedly revolutionized the hub model tried by Yellow Bike. Stations are now controlled by computer and activated with a unique user key or by credit card. Bikes can be tracked and the users who take them out are easily identified.

Additional subtle advances in technology have proved equally critical. The cause of Paris's problems with theft and vandalism was the locking mechanism that attached the bike to the station. Users would attach the bike to a locking mechanism on a raised post. This design proved to be vulnerable to the common thief with a crowbar, who could easily detach the bike from the post with no repercussions. The systems in Montréal and Minneapolis are more sophisticated. These bikes lock at the front of the bike and are much harder to break. Moreover, these bikes will not work if their locking mechanism is tampered with, essentially making them impossible to steal from their docking stations.

Another change; new bike share programs rely on custom made bikes, not community donations. These bikes use unique parts which will be useless for other commercial bikes. Thus, it's equally pointless to steal parts from the bike to sell as scraps.

The second major difference between today's bike sharing programs and those of the past decade lies in safety improvements. Survey after survey finds that the primary concern of Nice Ride riders is safety. Other studies around the world have confirmed that this is a constant (Fishman, Washington, and Haworth 2012) (See also: Whannell, Whannell, and White 2012).

The Twin Cities are a much safer place to bike today than they were just a year ago. The same is the case for most developed cities around the globe. Early bike share systems came out of increased appreciation for cycling as a mode of city transport. Ten or more years later, biking

acceptance continues to grow. A summary of American Community Survey data by a coalition of advocacy groups showed a 40% increase in bike commuting between 2000 and 2010, and nearly an 80% increase in bike friendly areas (Sierra Club 2012). The Twin Cities have been acclaimed nationally for bike friendliness, and in 2011 Minneapolis was named the ‘Best Bike City’ by Bicycling magazine (Bicycling 2011). As biking becomes more prevalent in a city, drivers take note and increasingly learn to look for bicyclists and factor the presence of bicyclists into their decisions. This in turn increases safety, leading to more bicyclists on the streets, and increased awareness.

The virtuous cycle (!) of increasing bike numbers also shows up in policy, as public officials become aware of the growing demand for improvements to the city’s bicycling infrastructure. While high numbers of visible bicyclists are a great first defense, dedicated bike lanes drawn onto the pavement are a huge improvement at relatively low cost. Even better are bike lanes physically separated from car traffic by a curb. These improvements were non-existent during the time of Saint Paul Yellow Bike. Now, across the Twin Cities, there are over a hundred miles of bike lanes. Minneapolis has painted bright green bike lanes in the downtown to make them even more visible. The biggest step of all came in the fall of 2012, when the city of Minneapolis rebuilt Park Avenue to include a dedicated bike lane separated from traffic. Further improvements seem likely to follow.

All of these innovations of structure and substance have allowed bike sharing advocates to develop a model that is economically sustainable. Free from the grip of the tragedy of the commons, bike share now should have a much longer shelf life than the programs of the past.

Already, Nice Ride has outlasted either of Yellow Bike's two phases, and with virtually none of the issues.

A crucial addendum to this success story lies in the increased cost of the new bike share programs. While neither Yellow Bike and Nice Ride have been run by the city, there is a huge gap between the resources and support experienced by the two groups. Yellow Bike was a collection of volunteers with token city support. Small state grants sustained the Hub program. On the other hand, Nice Ride is a multi-million dollar project with the support of large corporations and the explicit endorsement of City Hall. In other cities, the government is even more explicitly involved. Bike sharing has gone from being an urban intervention for the masses to a top-down city run urban planning initiative. Those words carry serious weight and real consequences.

Part of the increased cost of the program has been passed to consumers. A yearly subscription to Yellow Bike Hub cost \$10 in 1997 (Nelson 1997). A yearly subscription to Nice Ride costs \$65, with occasional sales and discounts. Between the two systems, Nice Ride costs just about 450% more than Yellow Bike when adjusted for inflation. Time will show whether this high cost is itself sustainable, and also whether this impacts the effect of Nice Ride in other measures of sustainability.

Sustainability as a Goal

While a solid foundation in the history and model of Twin Cities bike sharing is important and instructive, in some sense it's putting the seat before the handlebars. Larger questions remain. How is bike share important in the first place? Why spend time thinking about it? Why spend

time volunteering for it, working on it, or participating in it? What are the goals associated with bike share? What good is it for anyway?

Until now, this essay has primarily explore how bike share can be economically sustainable. For the short life of bike share as a urban idea, this has been the primary struggle. But it is clear that bike share programs have at last figured out a model that will allow them to operate into the future. From here on out, we turn to the two other sides of sustainability; environmental and social. On the surface, it's obvious why city biking is promoted as sustainable. It produces no environmental waste and is cheap. Thus, both environmental advocates and poverty advocates often see bikes as an alternative to more costly forms of transportation. It would seem equally obvious that bike share would be promoted similarly, as it has the same benefits. But in reality, the case of bike share cannot be considered the same as efforts to promote bike use and ownership. Nor can the two be fully separated. There are benefits that bike share brings to the table, as well as downsides. Why run a bike share program? Why not just give out a couple thousand bikes? These questions prove surprisingly difficult to answer. Understanding bike share's contributions to sustainability requires a nuanced and holistic approach.

In assessing the value of bike share, it's particularly useful to look at the work of Steven A. Moore, Bartlett Cocke Professor of Architecture and Planning at the University of Texas at Austin. Moore's work, specifically Alternative Routes to the Sustainable City, (2007) provides a theoretical basis to my research that is firmly grounded in the discussion of sustainability.

As a basis for looking at sustainability initiatives, Moore provides a compelling framework. Moore's work focuses on the design and politics of sustainability. In his 2007 book, Moore sets out to contribute to the research that has found a connection between certain types of governance and citizen-government interaction with pursuit of sustainability. In particular, cities where

citizens participate more in their democracy are cities more likely to pursue sustainability (Portney and Berry 2010). The impetus for Moore's book is the examination of Curitiba, Brazil, a city that has become among the world's most sustainable after a period of something akin to an enlightened dictatorship. Elected mayor three times, urban planner Jaime Lerner transformed the city—frequently against the will of his constituents and without much debate—into a global model for sustainability. This reality challenged Moore's conceptions, and he sought to reconcile the success of sustainability in undemocratic areas.

Moore's conclusion is that sustainability is not simply an end goal, or a list of end goals. There is no pre-determined result for sustainability. There is no red line a city crosses after which it is 'sustainable'. Instead, sustainability is a story told by the city government and the citizens. To Moore, sustainability isn't a story because stories can be never ending. It's a story because in order for a story to keep momentum, we cannot expect a clear and quick ending. When Moore says sustainability is a 'story', he means that it's a state of mind. He sees sustainability as a new guiding principle for city growth and development, providing a counter-example to the dominant idea among contemporary politicians that growth for growth's sake is the best option.

Moore's theory is excellent for analyzing the effect of bike share on sustainability, because unlike solar panels or a new light rail line, the direct impact of bike share is hard to gauge. If Moore's conception of sustainability has any validity, then it shows that bike share has a lot to contribute to sustainability right now and even more in the future.

What Bike Share Offers the Environment

When someone takes a ride on Nice Ride or Yellow Bike, they're using a bike for a trip when they would ordinarily travel in a different way. Many of these trips simply save time, as the user

would've walked instead. Many have little environmental impact since the user would otherwise have waited for the bus. Together, 58.1% of Nice Ride trips replaced either walking or public transit. But 19.4% of Nice Ride trips would ordinarily have used a car (Nice Ride 2010). This is the immediate environmental benefit of a bike share program. Americans take an extraordinary number of short trips by car. While short trips are not as environmentally damaging, they are also usually much less necessary. If bikes were used instead for every short car trip taken, the environmental impact would be substantial. Even if it doesn't approach a plurality, Nice Ride's near 20% car replacement rate is nothing to scoff at. That's around 10,000 car rides replaced in Nice Ride's initial season alone. In three seasons, that's close to 60,000 car rides that instead became bike rides.

While no meaningful numbers exist for Yellow Bike, it is reasonable to assume that replacing car travel is primarily a Nice Ride phenomenon, and something that Yellow Bike—at least initially—wasn't well set up to do. Nice Ride's advantage is convenience; just like a personal car, you can go to a specific location and expect a bike to be there. Yellow Bike's starting model was more impromptu; you would simply find a bike along your way and it would make your trip shorter. You couldn't otherwise count on a Yellow Bike being anywhere for you. With the switch to Yellow Bike Hub, more car trips were likely replaced, although nothing on the scale of Nice Ride.

More numbers flesh out the picture of Nice Ride's environmental impact. The primary converts to Nice Ride have been infrequent bikers, with 33.6% saying they rode a bike 'less than one per month', and 66.2% saying their bike use had increased as opposed to staying the same (33.2%) or decreasing (0.6%). 87.5% had access to a car (Nice Ride 2010). With Nice Ride's

increasing ride totals, it's fair to assume that the program has converted a significant number of car owners and bike skeptics to the two-wheeled life.

These numbers also allude to a more significant change that Nice Ride and Yellow Bike have the capacity to bring. Moore places top importance on 'discourse', the ability of the sustainability story to change its participants, *and* the ability of the participants to change the story. This give and take is facilitated by what Moore calls 'public talk'. It's the chat at the water cooler at work, or over dinner at home, or with drinks at the bar that changes minds and changes the story. Moore writes about public talk on a citywide scale as "... a shared mode of interpreting the world in the present..." and then defines the sustainability story as "...a shared way of making sense of the past and speculating about what might become true in the future," (Moore 2007, 11). In the Twin Cities, bike share's highest purpose is to convert the unconverted to the story of biking, *and* density, livability, and—ultimately—sustainability. When citizens see Nice Ride's bright green bikes being taken around, some may decide to try the system for themselves. When they try the system, a some will be converted. Some will tell their friends, and some of those friends will try the system. In creating broad familiarity and acceptance of biking as a means of transportation, Nice Ride is changing the story of sustainability in the Twin Cities. It is helping to make sense of a past that was marred by failure (Yellow Bike) and allowing people to speculate hopefully about a greener future. By bending the arc of public talk towards sustainability, Nice Ride today is furthering the goal of making Minneapolis a more sustainable city.

Nice Ride also plays a role in attracting the converted (usually young urban professionals) from elsewhere. In our interview, Bill Dossett mentioned the process detailed above, but placed

special importance on Nice Ride's role in what I'll call a 'gift basket of livability'. The overarching obsession of Mayor Rybak's tenure in Minneapolis, according to Dossett, is increasing the livability and density of the downtown. This is a virtuous cycle, and Nice Ride is among the amenities that allows it to keep turning. As the scope and usefulness of the Nice Ride system continues to increase across the city, the system will become a more and more valuable part of that gift basket. When young professionals choose where to live, Rybak and Dossett are convinced that programs like Nice Ride will help them make the choice to live downtown.

The significance of a figure like Rybak in promoting Nice Ride cannot be overstated. His influence goes well beyond the leadership he showed in getting Nice Ride off the ground. Moore splits public talk into three categories, political, environmental, and technological (12). Rybak's early endorsement of Nice Ride, and his continued support for the program tilts the balance of the political talk in favor of Nice Ride, and puts pressure on future candidates for office to give their support to the program.

Nice Ride's insistence on environmental sustainability in their promotional materials is an important contribution to the environmental public talk. While the environmental impact of bike share is not earth-shattering, it does exist. The public talk regarding technology is more technical, but the sophistication and safety of the Nice Ride system as opposed to Yellow Bike or a private bike is obvious.

This is a roundabout connection to sustainability for Nice Ride, but it's in the service of a significant project. In fact, there may be no greater sustainability project than increasing city density, especially in the sprawling cities of the American west. Many (most notably by Glaeser 2011) argue that dense cities are the most environmentally sustainable way for humanity to live.

If Nice Ride can make a meaningful contribution to increasing the density of downtown Minneapolis and Saint Paul, then its influence will have been significant.

It's an open question what Yellow Bike's contribution to environmental sustainability has been. A lack of data makes it impossible to determine how many car rides the program replaced, or how many non-bike people were converted. It's similarly impossible to determine the exact detriment that Yellow Bike made to sustainability. While well intentioned, it seems reasonable to suppose that Yellow Bike ultimately hurt its cause more than it helped it due to the largely negative coverage that the program received. A resident of Saint Paul during Yellow Bike's fitful start might easily conclude that bike sharing was a bankrupt utopian idea that shouldn't be tried again. The meme of Yellow Bike's failure crops up in early coverage of the Nice Ride proposal. A reporter writing for the *Twin Cities Daily Planet* in 2009, referred to Yellow Bike as 'a disaster' (Behm 2009). While this is certainly not a wrong way to describe Yellow Bike, it was not the kind of publicity that Nice Ride needed. In articles or comments, Yellow Bike was repeatedly mentioned during the early coverage of the Nice Ride system. This amounts to exactly the kind of anti-sustainability public talk that presents a challenge to the sustainability story in some places. It could have been much worse in the Twin Cities.

Without such strong leadership within the organization itself and support from the city government, it's not inconceivable that Nice Ride could in some way have been delayed or axed due to the spectre of the Yellow Bike failure. When people do not understand or know of the nuances to something, they reach for the closest available substitute. Yellow Bike is a poor ringer for bike sharing systems.

What Bike Share Offers Society

The environmental benefit of bike share is comparably much easier to gauge than the social benefits. For one, the environmental benefits are (as noted very early on in this essay) a primary marketing point for Nice Ride in their public literature. The social benefits get short shrift. Fifth on the list is “More opportunities for healthy physical activity.” Last is “A sense of civic pride”. Nowhere is it noted what benefits low income residents can expect to receive from Nice Ride.

This is in large part because Nice Ride does not intrinsically provide much benefit at all. One major barrier is cost. As discussed earlier, Nice Ride’s high upfront cost might dissuade users of limited income. In the first season, Nice Ride imposed a \$200 hold on a user’s account every time they took out a bike. That sum was intended as collateral to protect against theft, but it quickly became a big stumbling block for potential low income users. Nice Ride employees wasted hours convincing banks to remove holds that they had accidentally left on. Customers were unhappy. Even worse, the Nice Ride staff had evidently not considered that some prospective users, especially students, might use a debit card to check out a bike, and may not have \$200 in the account at all times. This provided another headache and sent potential users away discouraged. After the first season, Nice Ride knew that the hold was an issue, and lowered the fee to \$50. Still, problems persisted. For the 2012 season, the group acknowledged that the hold addressed a problem (theft) that didn’t actually exist. In two years, it had never been collected, and it was removed for the third. Still, many people may still be misinformed about the hold and believe it to still be in place. Because of this and the subscription fee, Nice Ride has a reputation as an expensive mode of transit, even if it becomes extremely cheap with repeated use.

Nice Ride also has an structural disadvantage in this case. Nice Ride is at its most useful for short trips in the central city. It primarily makes sense for businessmen and residents of the downtown, or busy, upscale areas like Uptown. It's best use is not evident in the less dense, less bustling, less wealthy neighborhoods of North Minneapolis or Phillips, where Nice Ride has struggled to gain traction.

All of this said, Nice Ride has made solid efforts to appeal to different groups. Every year, it runs bike themed events across the city, and makes a point of giving away up to 600 free subscriptions to interested citizens of low income areas. Yet according to Bill Dossett, at most a third of these subscriptions ever see a single use. Dossett pointed to cultural attitudes towards biking that stigmatize bikes as 'the thing you get when you can't afford a car'. Whether or not this is a significant factor in the lack of usage of Nice Ride in low income areas requires detailed study beyond the scope of this essay, but brings up a valid question for future anthropological research.

Dossett also mentions several allies of Nice Ride from low income areas, and credits these citizens with being strong advocates for bicycling and Nice Ride in their communities. The continued attention of Nice Ride, the expansion of stations in North Minneapolis after neighborhood pressure, and the planned expansions into Phillips this coming season show that Nice Ride is not giving up on the social sustainability side of their work quite yet.

From the Yellow Bike perspective, however, Nice Ride could do much better. Jason Tanzman animatedly spoke about the work that his organization did in raising cycling awareness, appreciation, and knowledge in low income areas. He conceded that Nice Ride was trying, but suggested that they ultimately didn't have enough voices in their decision making structure from

underserved communities. In short, Nice Ride's outreach was well-meaning but ultimately not as effective as it could be.

Here, Yellow Bike and its offspring speak from a position of strength. From the outset, Yellow Bike was tied directly to social sustainability efforts. The bikes used in the program were fixed up and maintained by participants in the SOCK youth program. The kids would learn valuable skills in tending to the bikes, and the activity would keep them off the streets. Meanwhile, the bike system was as egalitarian as possible, since it was all free.

When the program rebuilt itself as a Hub system, the focus definitely shifted. Tanzman recognizes this, but emphasizes the low cost and the neighborhood character of Yellow Bike Hub, which made starting the program more easy and comfortable than getting into Nice Ride.

Even though it is no longer a real bike share program, Cycles for Change (Sibley Bike Depot) have done a great deal of work in promoting bicycling and bolstering the public talk about it in low income areas. Bicycling can produce change, and Tanzman disputes the idea that low income areas are naturally less interested in bike share. He tells the story of two Somali men that he recently met who were intrigued by the Nice Ride station outside their apartment, but who didn't quite know how the system worked or whether it went to places they wanted to go. Outreach aside, this story suggests that the broader story of sustainability may eventually sweep citizens like these two men along with it. The need does exist.

One final element of bike share that is uncertain, but possibly of large importance, is its impact on public health. The principle sponsor of Nice Ride is Blue Cross, Blue Shield of Minnesota, which funds bike share explicitly for public health reasons. A ride taken through Nice Ride is physical activity that many Americans desperately need. In reducing healthcare costs in the long

run by promoting and providing opportunities to bicycle, Nice Ride could potentially save the metro region a significant amount of money. Again, this ties into the positive feedback loops that run on visibility and action. As Nice Ride grows, spreads the gospel, and converts followers, its impact on public health may eventually become quite significant. Here, Nice Ride has Yellow Bike solidly beat. It's scale is much larger, and it's permanence guarantees these benefits for the future.

A Bright Future

Nobody will likely confuse Nice Ride Minnesota with New York's massive Citibike, Paris' Vélib, or even D.C.'s Capitalbike. But nor should anyone confuse Nice Ride with Saint Paul Yellow Bike, or any of the defunct bike sharing systems of a decade ago. Bike sharing has turned a massive corner and across the world, it's becoming a standard part of the industrial urban fabric. Nice Ride Minnesota has had three increasingly successful seasons, and promises more in the future. Twin Cities residents have much to be proud of when they see the bright green bikes roll out each spring, or flitting around the streets in the summer. Bike sharing has a deep history in these cities, and was in many ways perfected and pioneered in them.

Through the case studies of Nice Ride Minnesota and Saint Paul Yellow Bike, we can answer the two questions posed at the beginning of this paper, that have guided my research and writing here. We can see how bike share works. Advances in technology and increased importance of sustainability in public talk have allowed modern bike share systems to succeed where their earlier counterparts failed. We can also see how bike share works *for us*. Environmentally, bike share benefits the public in ways beyond just the service itself. It promotes environmental sustainability by replacing car trips with bike trips, but also by contributing the amenities of the

inner city, creating an environment that will convince more people to live in a dense, sustainable manner. Socially, bike share has minor benefits for now, but with greater coverage and continued acceptance and awareness, programs like Nice Ride may take their place as a low cost transportation option for urban poor.

The utility of a case study is that it provides a background from which we can examine other similar systems. In other cities around the globe, especially in the United States, a wide range of cities are weighing the benefits of bike sharing. The Twin Cities and their story of bike share are excellent starting points from which to explore systems like Denver's smaller scale program, or New York's planned behemoth. The lessons learned in the Twin Cities, whether about where true environmental gains can be found or what types of organizations and institutions are receptive to bike share are applicable elsewhere.

Most importantly, the Twin Cities have much to contribute on the subject of the social sustainability of bike share. While Moore defines public talk as the sphere of politics, the environment, and technology, he has crucially ignored the social aspect of sustainability. The poor are often voiceless in sustainability issues, yet as the Yellow Bike and C4C example shows, biking outreach can have an impact in these communities. Programs like Nice Ride conduct vital outreach, but struggle to find minority voices for their leadership. The impact of bike share on social *and* environmental sustainability could be much greater if programs worked harder to involve underserved communities. In pairing two programs with emphasis on different elements of sustainability, the Twin Cities are able to paint in stark relief the deficiencies of one model or the other. Bike share programs starting up around the country will all doubtless adopt the modern Nice Ride model. They should pay special attention to the impact they will have on social sustainability and work to give those without a voice a spot in the public conversation.

Meanwhile in Minnesota, there is still much to learn and improve as well. But plenty of room for optimism. The cause of dense city living is moving forward. In the fall of 2012, Minneapolis approved the construction of a new residential high rise in the downtown.

The green bikes began the 2012 season encased in ice, but as the temperature dropped in November, the system was taken down to avoid that fate from happening unintentionally. The third season was another successful one for Nice Ride. The direction of the discourse in the Twin Cities was more positive than ever before. The vile comments on Nice Ride's message boards largely faded away after the second season. Nice Ride use continued to grow and the system has further plans to expand for its fourth season. When the bikes roll out again in the spring, their message will be the same as ever, although the way we understand it now might be a little altered. Biking is back, and sustainability is here to stay.

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