1. ABOUT THIS REPORT

1.1 - Introduction

Nice Ride Minnesota, the Twin Cities bikeshare system, started operations in June 2010. The three service seasons (2010, 2011, and 2012) have yielded a rich array of data and experiences that may be used to optimize functioning of the system for the coming seasons and help guide decisions on expansion, including outward expansion of the service area, infill within the existing service area, and potential for deployment at satellite sites.

1.2 - A successful system

Nice Ride has grown from an initial fleet of 700 bikes and 65 stations serving downtown Minneapolis in 2010 to today’s system serving (and connecting) both Twin Cities downtowns with 1,320 bicycles and 145 stations. Ridership numbers have continued to grow, from 108,000 total trips taken in 2010, to 217,000 in 2011 to 265,000 today (with still another two weeks left in the season).

The system is self-sustaining, and has, after capital investments paid for through public/private partnership, met operating costs through a combination of subscription revenue and private sponsorship.

1.3 - A propitious time for reflection and rethinking

The success of bikeshare in the Twin Cities has invited expanded interest on the part of Minnesota cities, elected officials, advocates and funders. Representatives from several cities (including some outside of the metro region) have approached Nice Ride to encourage the organization to explore and develop a bikeshare system in their locality, either as an expansion of the existing system, or as a new “satellite” system. Similarly, elected officials and advocates from locations in the Twin Cities have approached the organization to request the placement of Nice Ride stations in specific locations that are the focus of investment or revitalization efforts. Additionally, current and potential funders impressed by the system’s successful outcomes have offered to support future expansion with funding for specific locations or goals.

So Nice Ride Minnesota finds itself in the enviable position of being invited to expand in multiple locations, with the encouragement and support of funders, elected officials and community leaders. Wisely, and in keeping with their commitment to the long-term health and sustainability of the organization and its system, Nice Ride’s leaders have responded to this good fortune by taking it as an opportunity to carefully review and study the system’s actual use and usage patterns, to explore its costs...
and revenue generation modalities, and to revisit the system’s original assumptions to develop a truer picture of the system’s use, prospects and overall health.

The purpose of this report is to summarize this knowledge and offer recommendations that can serve as the basis for the system’s rational and sustainable growth and development.

2. REVISITING INITIAL ASSUMPTIONS

2.1 - Background

Bikeshare systems are a relatively recent addition to cities’ transportation landscapes. As a result, their initial development has been usually based on a set of common assumptions about the types of trips, destinations and users that the system will attract. Those assumptions include, for example, an orientation of most systems to serve transportation (vs. recreation) purposes, and a high proportion of annual members (vs. casual or 24-hour subscribers).

Nice Ride was no exception to this rule - the assumptions that guided its initial deployment are the same as those outlined above. Now, however, with the benefit of three seasons’ worth of data on station use, trips taken, and subscribers (casual and membership), a more accurate description of how the system functions in the specific geographic, social and cultural landscape of the Twin Cities can be developed.

2.2 - Nice Ride MN’s three sub-systems

The Nice Ride system can and should be viewed as a single bikesharing system, integrated with the Twin Cities transportation system. All of its stations are available to all users at all times and are maintained and balanced as an integrated system. The system is complementary with other transit systems, offering “last mile” service for a bus or train trip and adding to a group of transportation solutions that together make it possible to choose a lifestyle less dependent on car ownership.

Nevertheless, for purposes of understanding the role that individual stations play within the larger system, it may be valuable to consider three “sub-systems” related to the function that each of the system’s individual stations fulfill in the larger system’s functioning. The three sub-systems are:

- Network/Daily Transportation Demand
- Attraction Points/Sightseeing and Recreational Demand
- Regional Equity/Underserved, Transit Dependent, and Health Disparity Demand

Although no individual station fits perfectly into a single category (all system stations are used by multiple user groups and fulfill multiple roles), these categories help clarify the predominant role of each station and aid in evaluating how well a specific station is fulfilling its role in the context of multiple, and potentially competing, goals.
This framework is of course not perfect - there is wide variation in usage and revenue generation within each category - but it allows for deeper exploration of considerations for the system’s expansion and optimization. For example, a low-usage station that is primarily viewed as a “network” station may be a better candidate for relocation than a station located primarily for regional equity considerations. It should also be noted that each of these sub-system categories responds to and furthers the mission of Nice Ride Minnesota and impacts the long-term financial sustainability of the non-profit in different ways. A fuller description of each of these “sub-systems” is provided in the sections below.

2.3 - But first, a word about types of subscribers, contribution to revenue, and net revenue per station

Nice Ride has two primary subscriber types, referred to here as “membership users” and “casual users.”

Membership users sign up for a 1-year subscription on-line, create a Nice Ride account, and receive a Nice Ride key. They account for about 70% of the trips taken in the system. About 90% of their trips are taken for a transportation reason rather than a recreational reason. The vast majority of their trips are one-way (from one station to another).

Casual users don’t create an on-line account or get a key. They buy a 24-hour subscription at a station. Casual users fall into several different groups (we have less information about their actual trip purposes because this group is more difficult to survey than membership users):

- About 40% of casual subscriptions are purchased by out-of-town visitors; many of their trips originate near downtown hotels
- Some local casual users use the system in the same way as membership users - primarily for transportation
- Some local casual subscribers use the system for recreational purposes, primarily on weekends

An unexpected (and important) observation from the first years of system operation is that revenue from casual usage is substantially higher than revenue from membership usage, even though membership usage accounts for a substantially larger number of trips - in other words, casual users provide greater economic benefit to the overall system while generating less operational costs.

Ultimately, the potential for sustaining Nice Ride as a permanent component of the Twin Cities transportation landscape will hinge on the organization’s ability to generate sufficient revenues to operate and maintain its system. Currently, user fees and subscriptions cover about 60% of Nice Ride’s operational costs, with the remaining 40% being covered by station sponsorships. This mix of fees and sponsorships has allowed the system to be self-supporting over its three seasons of operation. In an effort to understand the relative contribution of each station to the total revenues supporting the functioning of the system, Nice Ride staff developed a set of calculations that allocate costs and revenues to stations based on several factors, including:

- the number of casual trips originating and ending at a station,
- the point of sale of casual subscriptions (the station where a casual subscription is first purchased)
• the number of membership trips originating or ending at a station,
• total operating sponsorship revenues (divided equally among all stations),
• fixed costs, such as back-end software fees paid on a per station basis (divided equally among stations), and
• variable costs, such as rebalancing and customer service, divided among stations in proportion to use.

The purpose of these calculations was to obtain a metric that could be used to compare station net revenue impact, and provide Nice Ride leadership and staff a data-based foundation from which to understand the existing system and guide potential decisions regarding expansion or optimization of locations for existing stations.

It should be noted that this net revenue metric is only one lens among many with which to understand system characteristics and performance, and should not be interpreted as being the sole or primary consideration for decision-making. Among other considerations are Nice Ride’s commitment to equitably distribute access to the system’s benefits across the vast mosaic of Twin Cities cultural, ethnic and economic communities, and the system’s mission to develop and provide a bikeshare network that offers connectivity within and across communities and “provides residents and visitors a healthy, fun, different way to get around town.”

It should also be noted that the revenue impact metric was derived from a model looking at a limited period of time and making assumptions. An assessment of the actual costs associated with each station based on actual frequency of rebalancing and difficulty of access has not been done. The model would produce significantly different results if sponsor revenue were assigned only to sponsored stations rather than evenly across all stations.

3. UNDERSTANDING THE THREE SUB-SYSTEMS

3.1 - Characteristics of each sub-system

Network / Daily Transportation Demand
• The majority of stations in the system fall into this category.
• These stations were selected for the basic goal of maximizing the convenience and usefulness of Nice Ride as a transportation system by placing stations near high density residential areas, employment centers, and retail destinations (where stations were expected to be used most frequently).

Attraction Point / Sightseeing and Recreational Demand
• These stations were originally sited to fulfill “Network / Daily Transportation Demand” functions because they are also generally near multi-family density, employment centers, or retail destinations.
With experience, we have learned that predominant use at these stations is by casual users. As a result, they contribute more to revenue than other system stations.

- The following criteria were used to identify these stations:
  - More than 60% of trips are taken by casual subscribers, and
  - Station is located near a major tourist destination, recreational destination, or hotel.

**Regional Equity / Underserved, Transit Dependent, and Health Disparity Demand**

- Stations were sited at these locations to respond to equity needs and provide expanded access to mobility to populations across the Twin Cities, including underserved, health-disparity and transit-dependent populations.
- These stations are located in neighborhoods that do not have the residential density, employment, or retail characteristics predicative of high-usage. These location were selected to further other goals,

- The following criteria were used to identify these locations:
  - Located in a low-income or underserved neighborhood
  - Not near multi-family residential buildings, employment centers, retail centers

*Network (in yellow), Attraction (in red), and Regional Equity (in purple) locations for Nice Ride’s current system.*
3.2 - Other framing questions

Casual vs. Membership users, and the impact of Attraction Point stations

As noted previously, casual users are a larger portion of system users than originally anticipated, and provide a disproportionately larger revenue benefit to the system than membership users. In addition, the financial model demonstrated that the net revenue impact of Attraction Point locations is significantly higher than other stations, because these locations are the point of sale for a large number of 24-hour subscriptions.

The data obtained from actual use shows that casual riders, especially those at tourism and recreation-related locations, make up an important portion of total users of the system, and help generate significant revenues that help subsidize other portions of the system. The station at Lake Calhoun Center (an “Attraction Point” station located relatively far from other stations) generates more revenue than any other station in the system (approximately $17,800 per year). By comparison, the busiest “Network” station in the system, IDS Center, generates about $7,000 per year.

Interestingly, and in a pattern that may fit other “Attraction Point” stations, the Lake Calhoun Center station also generates a high proportion of “round trips” (trips starting and ending at the same location). These tend to moderate the frequency of station rebalancing operations. This trend is important because Attraction Point stations also contribute to rebalancing challenges, as usage at these stations tends to spike with short weather conditions, which are difficult to predict and staff for. Nice Ride’s experience over three years has demonstrated that these spikes can be managed effectively.

The importance of Network stations in continuing to meet the needs of Membership users

Nice Ride aims to create a transportation system that “permanently changes the way people experience and perceive our city, as well as the way they experience and perceive transportation.” One of the ways in which the system disseminates this vision and makes it real is by developing a base of users who rely (or seek to rely) on it often enough that they commit to actively participate in the system through their purchase and renewal of an annual membership pass. The goal of establishing a new mode that can be used to fulfill transportation needs requires the existence, development and growth of such a base of committed and recurring users. A strong and expanding base of membership users is a precondition for a sustainable and successful system - and “Network” stations are the foundation for a system that will attract and capture membership users.

Membership users make a number of demands on the system that in some cases run counter to strict definitions or goals of short-term revenue generation. It is for example possible to have stations with very high member use which fail to generate correspondingly high revenue. Given that the $65 annual membership gives a user the right to make an unlimited number of trips and therefore generate operational and maintenance costs throughout the season, the income from that membership is “diluted” across that user’s number of interactions with the system. A station that is popular with membership users may require greater rebalancing and other operational and maintenance investments, while the income it generates increases more slowly (because of the “dilution” effect on the
membership payment), thus reducing the net revenue for that station (as is the case with Kolthoff Hall, which serves a “Network” function with a high number of trips but generates a lower net revenue impact of $2,700 per year). It must be noted, however, that this is one important component of what success for Nice Ride must look like if its vision of a well-used transportation system is to come true: a network of stations receiving high numbers of membership uses, and though perhaps not generating high revenues on a per-station basis, receiving enough use to operate “in the black” and providing a connected network for users.

Ensuring equitable access to mobility

Each of the “Regional Equity” stations has a negative net revenue impact. This is not surprising, because these stations fulfill an equity role and high usage was not expected. The financial model allows us to estimate the net revenue impact of the “Regional Equity” subs-system. The estimated negative revenue impact is currently estimated at about $50,000, or about 5% of Nice Ride’s annual operating budget.

All transportation systems require subsidy for operation. A system which aspires to equitably address and supply the transportation needs of city residents, to address health disparities, and to fairly distribute the benefits of investments funded by public moneys must be accessible to communities facing those issues.

Nice Ride has demonstrated its commitment to providing service in impacted communities as part of its expansion efforts, with stations in North Minneapolis, Phillips, Cedar-Riverside, Frogtown, and Saint Paul’s Westside, among others. This interest in equitable access and distribution of stations is consistent with the organization’s commitment and desire to develop into an additional transportation system for the Twin Cities. Nice Ride continues to explore and develop community partnerships and outreach efforts in order to support the growth of ridership in these communities over the medium and long term.

Nevertheless, there is a financial cost that this commitment presents today. The stations which have been located in low-income neighborhoods that do not also have nearby employment or retail centers currently show low levels of use. Those usage levels are expected to change only if the residential, employment, or retail activity in those neighborhoods significantly increases in the future or if Nice Ride’s Active Living engagement efforts in those neighborhoods result in much higher participation per resident than elsewhere in the system. Nice Ride staff have estimated that a low-usage station requires an investment of approximately $4,200 per season, most of which is fixed cost (i.e., seasonal installation/storage and communication/back-end hosting fees paid on a per station basis).

Although Nice Ride is unwavering in its commitment to the stations that have been already placed in impacted communities, it is clear that the organization needs to obtain alternate means for funding the fixed costs that these stations require. Given that these stations are located in communities with high indices of health disparities, transit-dependency and unequal access to Active Living opportunities, it
may be possible to partner with other entities working to address these issues. These types of efforts have already been fruitful for funding capital costs for stations in North Minneapolis, for example, with funding for five stations provided by the Minneapolis Department of Health and Family Support from a CDC grant. Exploring ways of accessing similar funding to underwrite operational costs for those stations will help support the continued presence of Nice Ride stations in impacted communities and ensure that residents continue to enjoy access to healthful and affordable mobility options in their communities.

4. KEY OBSERVATIONS

4.1 - General observations from sub-system analysis

• Network stations are the foundation of the type of system Nice Ride is envisioned to become for the Twin Cities. There is a very wide variation in the net revenue impact of “Network” stations, ranging from approximately $7,000 to (-$2,000). Staff should focus its efforts on moving or improving the siting of these stations to maximize usage while maintaining network connectivity and function.

• Each of the “Attraction Point” stations have a substantial positive net revenue impact. The station at Lake Calhoun, for example, although located relatively far from other stations, has a net revenue impact greater than any other station in the system (approximately $17,800 per year). By comparison, the busiest “Network” station in the system, IDS Center, has a net revenue impact of about $7,000 per year. Because even one “Attraction Point” station can have a significant positive impact on the financial sustainability of the system, expansion in these “Attraction” areas may improve financial outlook.

• Each of the “Regional Equity” stations has a negative net revenue impact. This is not surprising, because these stations fulfill an equity role and initial high usage was not expected. This model provides a tool to assist in expansion planning to help assure that the costs associated operation of these stations will be offset by revenue from other sources and to guide expansion so that the system stays in balance.

4.2 - Other observations from Optimization process and review

• Use of stations in Saint Paul (University Avenue and Downtown) is below expectations. This is likely caused by interference from construction activities for Central Corridor LRT. Lack of bike infrastructure in the city may also be a contributing factor.
5. RECOMMENDATIONS

5.1 - General recommendations

This study recommends that Nice Ride expansion decisions:

- Generate sufficient income for sustainable operation of the system,
- Expand the connectivity of the existing network and improve access within the system’s service area, and
- Promote regional equity and consider the impact of siting or optimization decisions on impacted communities.

For 2013, a goal for the system should be infill and strategic expansion - choosing candidate locations that respond to the items listed above, and that consider the “three sub-system” to understand and evaluate the impact of those locations.

5.2 - Specific recommendations

The following are specific recommendations for 2013:

“Attraction Point” locations

Stations near tourist and weekend destinations will generate rides and revenue, and invite new users to the system. Candidate locations may include:

- Additional stations near Lake Calhoun, and new stations near Lake Harriet, Lake Nokomis and Longfellow Café
- Expansion near Minneahaha Falls and Fort Snelling may also justified, especially if sources of funding are obtained for station acquisition
- Riverfront locations
- It may be appropriate to consider siting a station at Como Park, which shares some characteristics with Lake Calhoun and may contribute to financial sustainability

“Network” locations

- Nice Ride’s current system has three main hubs of use: Downtown, University of Minnesota campus, and Uptown (a “hub” station functioning like IDS Center or Koltoff Hall has not yet emerged in the Downtown St. Paul usage patterns). Strategic infill in and near these hubs is likely to result in more high-usage (though not necessarily high-revenue) stations.
- For network stations, distance from a network hub is strongly correlated with usage rates in systems around the world. Expansion beyond these hubs may be considered when a strong combination of high-density, retail destinations, and tourist destinations is present
- Areas near the Midtown Greenway and Lake Street retail/high-density have relatively good usage, infill in these locations may yield more high-usage stations
- Expansion into Highland Park, especially as part of other expansion into Minneahaha Falls and Fort Snelling, may be justified
• Expansion into St. Louis Park and Southwest along the high-density residential / retail corridor between Excelsior Boulevard and the Midtown Greenway may generate high-usage stations - may need to study further for evaluation

Expansion in Saint Paul locations
• Usage of stations in Saint Paul’s University Avenue and Downtown is below expectations, likely due to construction activities for Central Corridor LRT, and to a lack of bike infrastructure. These areas, however, are expected to experience some of the fastest growth in the system over the next few years as infrastructure is completed, the light rail begins operation, and pending multi-family and stadium development is completed. The current system in downtown St. Paul does not have obvious gaps in the network that would explain low usage. Further expansion in these areas should follow, not lead, increased usage of the system.

Participation in community improvement efforts
• Nice Ride can be an important contributor to improvement in a neighborhood or community. However, Nice Ride cannot by itself function as the catalyst for that improvement, and risks its financial wellbeing by committing to locate in a setting where other improvements (including the development of suitable bicycle infrastructure) have not yet materialized. In general, Nice Ride expansion or location decisions should respond to currently existing conditions, where a combination of “Network”-oriented characteristics exist.