



# BIKE SHARE ACCESS FOR THE UNDERSERVED IN KANSAS CITY

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**Health Care Foundation**  
OF GREATER KANSAS CITY



# Executive Summary

**Bikeshare is often touted as healthy, inexpensive, and attractive form of alternative transportation. It is seen as something to catalyze a “healthier and more vibrant”<sup>1</sup> community or a stronger economy or more sustainable region<sup>2</sup>. It is convenient for users and can help them connect to other forms of transit. At the very least, bikeshare is a shareable tool for recreation.**

Unsurprisingly, then, bikeshare has taken hold in cities across the world, and recently in North America<sup>3</sup>.

At first glance, these benefits make bikeshare a very attractive option for addressing many issues found in underserved areas of communities. A recent analysis of bikeshare systems in the U.S. states that “[b]ike-sharing is an innovative, flexible, low-cost complement to public transportation that can be especially beneficial to low-income residents” (Carney, 38).

Unfortunately, the technology that makes bikeshare’s spread possible also makes it difficult for the transportation mode to work in underserved communities. Bikeshare’s promise to be an effective tool for positive change is broken by its inability to be fully inclusive.

Many bikeshare systems around the nation have attempted to address the inclusivity issue with a number of partnerships and innovations with system payment and membership setups. Their efforts, however, have yielded only limited results, the most successful program reaching at most 500 people per year and only with intensive dedication of staff time and other resources. This has discouraged other systems from undertaking similar programs.

Part of Kansas City B-cycle’s current mission is equity based, meaning that the system must seek a way of reaching those underserved areas of Kansas City.

The following report examines the issues Kansas City B-cycle might face as it attempts to serve historically underserved districts and residents. Through a multi-

phased planning effort, we have identified a set of recommendations that are based on national best practices and community input and grounded in quantitative data analysis. These components include:

## **Literature Review and Landscape Analysis**

The process began with a national literature review and interviews with select officials of bikeshare systems, community development organizations, and relevant representatives of private businesses that could help B-cycle develop a program to adequately serve Kansas City’s underserved with bikeshare.

## **Quantitative Neighborhood Selection**

Through an analysis of census tract data we were able to narrow the focus of this planning effort to the neighborhoods in the most need for transportation equity and job access and are good candidates for usable bike share.

## **Community Input and Engagement**

The most critical component to gaging the potential for bike share as a tool for social justice was the input from the community. Between Kansas City B-cycle staff and two engagement consultants we spoke directly with representatives of over 30 community organizations. We received input from community service agencies, neighborhood associations, hospitals, and community improvement organizations.

## **Built Environment Assessment**

Although a built environment assessment was not originally a component of this project, we felt that at least a brief literature review and a local analysis of bike facilities was warranted. Because a common refrain during our community outreach was I don’t feel safe riding my bike without bike lanes we wanted to see if the literature supported such an anecdote. Additionally, we wanted to determine if investment in bicycle and pedestrian infrastructure was equitable in Kansas City, Missouri where most of this project focused.

## **Station Siting Evaluation**

Ultimately access to bike share will depend on where

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# Introduction

stations are located. Based on the research and public engagement we were able to narrow down locations to the block-level in order to pair our future expansion with the goals of providing equitable access.

## Implementation Plan

Finally, a prioritized list of recommendations and a timeline for implementation concludes the plan.

## Introduction: A Landscape Analysis of Programs for Bikeshare in Underserved Areas

A recent comprehensive study on bikeshare states that transportation mode can be useful in “increasing cycling, reducing congestion, improving air quality, and offering residents an active mobility option.” Other research shows the mode attracts more custom to retail establishments <sup>4</sup>. Bikeshare officials also point to the possibility of bikeshare increasing the effectiveness of transit lines -- users being able to increase their normal walking range beyond transit stops <sup>5</sup>.

The same benefits could apply to underserved communities, though their importance in such areas must be reevaluated. For example, with activity related health issues more prevalent among minority and low-income persons, bikeshare’s health benefits become more important there than among the young, white professionals who primarily use bikeshare; meanwhile, the credit-card convenience of bikeshare is unlikely to be a benefit as attractive to residents of East-Side Kansas Citians.

A further benefit of bikeshare that is more applicable to underserved areas -- and to those in Kansas City in particular -- is the mode’s ability to address access issues. Kansas City has repeatedly been indicted for its racial-economic segregation: the issue is partly a result of imbalance in job growth (occurring farther and farther from the urban core) and partly a product of the inability of the existing transportation system to connect underserved residents to those and other jobs. Bikeshare, at the very least in its capacity to connect with transit, is a possible part of the solution to the issue.

### Benefits only “hypothetical”

For the most part, the benefits of bikeshare to the underserved are, as one researcher put it, “theorized” -- not tried and/or untested <sup>6</sup>. This is not to say bikeshare organizations cannot or should not pursue initiatives to realize such benefits: the limited evidence of benefits to

the underserved from bikeshare are likely just a result of the limited existence of measurable programs <sup>7</sup>.

Several isolated case studies point to at least one of these benefits being realized. A 2011 analysis of NiceRide Minnesota’s efforts to reach underserved residents showed significant benefits to users’ physical activity. Speaking of users from its underserved Near North area, it concluded: “The average trip duration of 22.2 minutes provides riders with more than two-thirds of daily recommended physical activity levels, which demonstrates the potential of bike share to contribute to physical activity of regular users.” (Italics added.)

Interviews with officials from Denver B-cycle and Hubway Boston show that most of those systems’ underserved users use bikeshare for recreational/health uses, meaning that similar benefits might be seen there, too <sup>8</sup>.

A demographic pattern among underserved users of Hubway Boston points to another possible benefit. Among users of their Subsidized Membership program, in which income-qualifying Boston residents receive a \$5 annual membership, users were found to be 54% percent female, compared with only 30% in the “full-price” paying population of users. The reason for this discrepancy is unclear, but might point to an ability for bikeshare to be particularly beneficial to underserved women, notable because American women overall are significantly underrepresented in cycling in general <sup>9</sup>.

## The Potential Barriers of Bikeshare to the Underserved

In the experience of bikeshare systems so far, it is clear that any attempts to reach the underserved hit a number of predictable obstacles presented by physical, economic, social, organizational, and other characteristics of underserved communities. Several are more pronounced in Kansas City and/or will be more challenging for Kansas City B-cycle to address, due to its unique organizational capacities.

### Technological

A prominent issue in the literature is that of the “unbanked,” those without bank accounts. (Being unbanked is correlated to other factors coincident with being underserved.) Their lack of a bank account means they don’t have a credit card they can use to rent a bike. Of course, not having a credit card doesn’t mean one doesn’t have a bank account -- therefore, the issue is

# Unbanked households

somewhat mischaracterized. So for the purposes of this document, the topic will be broadened to a discussion of the technological barriers bikeshare presents to underserved potential users.

While not the whole problem, the unbanked issue is the one best understood at the local and neighborhood level. The PolicyMap organization provides a 2009 estimate of unbanked residents at the Census tract level. It is developed through a model that measures the incidence of other factors associated with unbankedness. The estimates for the Kansas City MSA are mapped below.



## Estimated percent of households that are unbanked as of 2009.

Unbanked households are defined as households without a checking or a savings account. Unbanked data for the United States, the 50 states and the District of Columbia, and the 69 largest MSAs are from the 2009 FDIC National Survey of Unbanked and Underbanked Households. Unbanked data for smaller metropolitan and micropolitan statistical areas, counties, cities and Census tracts are CFED estimates derived from a model based on the 2009 FDIC Survey and 2005-2009 American Community Survey (ACS) Public Use Microdata Sample and aggregate data available through American FactFinder.

**Legend**

Year  
2009

Variable  
%

- Insufficient Data
- 2.1% or less
- 2.2% - 4.5%
- 4.6% - 7.6%
- 7.7% - 11.2%
- 11.3% - 17.0%
- 17.1% or more

Shaded by: Census Tract, 2000  
Source: CFED

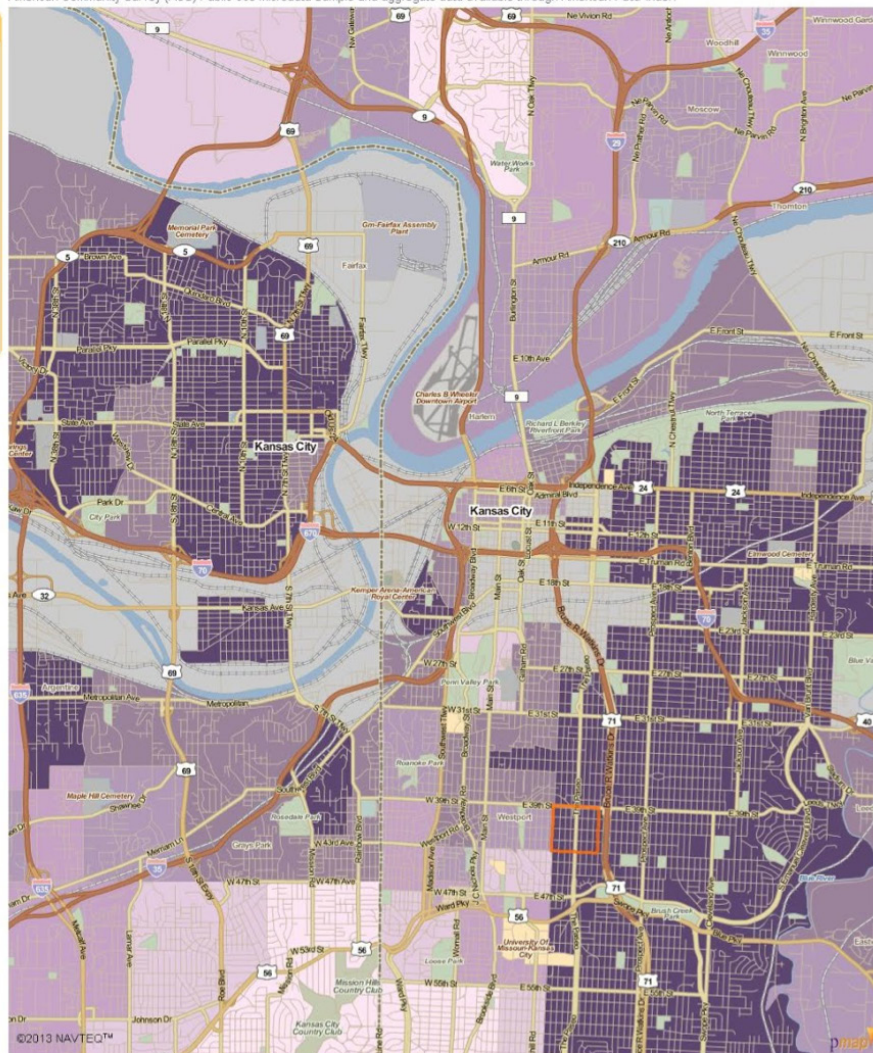


Figure 1 -- Estimated percent of households that are unbanked as of 2009. TRF Policy Map. From <http://www.policymap.com>





# Best Practices

The estimates depicted can be considered minimum estimates of residents without credit cards. It is the best guess available at how many people lack credit cards, especially at the local or sublocal level.

Besides the unbanked/credit-card issue, no other technical issues are explicitly mentioned in the literature. However, other technological issues might be found with access to computers or internet to sign up for bikeshare accounts, as American Blacks and Latinos have much lower levels of access to internet than Whites or the population overall <sup>10</sup>.

## Financial

### Membership

Almost a quarter of Black and Latino residents of the Kansas City region live in poverty <sup>11</sup>, compared with just one in fourteen Whites <sup>12</sup>. While in Kansas City and other cities, the cost of a bikeshare annual membership is comparable to the cost of a monthly bus pass, the expense might still be excessive for low-income residents of underserved areas.

In bikeshare systems nationwide, the standards for applying discounts to low-income system users are usually those of a public assistance program. The amount of discount varies, too.

Many systems <sup>13</sup> provide discounted or free memberships to residents of local public housing. The standards for Section 8 and other housing voucher programs are such: "In general, the family's income may not exceed 50% of the median income for the county or metropolitan area in which the family chooses to live <sup>14</sup>."

### Fees and Deposits

The expenses related to bikeshare are not limited to membership -- they include usage fees, usually applied by the half hour <sup>15</sup>. In Kansas City the rate \$2/half-hour starting with the second 30 minutes. In other cities the rate begins near that amount but then at least doubles by the half hour. The fees are important for ensuring that bikes are returned and kept available for other users.

Many systems also place a deposit on the credit cards of short-term (less than annual) users. (Kansas City B-cycle does not.)

Obviously, a low-income user would be wary of renting a bike, lest they incur any these fees.

Several different tactics are used by bikeshare systems to address this issue. Madison B-cycle waives half-hourly usage rates in favor of a "three-strikes" policy: subsidized members are allowed an hour of free use, and are penalized if use exceeds one hour. After three penalties, person is ejected from the program. Hubway Boston maintains the fees, but allows a full hour of free use by subsidized members -- it adds what it considers an additional safeguard to users by publicizing that only 45 minutes are allowed. Denver relies on being able to contact a low-income user to track down a lost bike <sup>16</sup>.

### Access (Station Implementation)

Where and how to place stations in order to reach underserved residents requires special consideration. There are no well-established standards for placing bikeshare stations in underserved areas. However, there are destinations that have been noted as popular among low-income users of some systems.

While there is no evidence that standards -- including transit-proximity, and retail or residential density -- for evaluating station sites should be any different for underserved areas. As with the potential benefits, these standards' weights may need to be adjusted. For instance, gaps in the urban fabric of many underserved areas might require adjustment to decisions based on density. And the importance of transit would likely need to be raised: as noted in the recent regional equity report: "Low-income people of color are more likely to rely on the region's transit system to get to work" <sup>17</sup>.

In at least one instance in Minneapolis/St. Paul, NiceRide conducted special public meetings to gain neighborhood residents' feedback on placement of stations. In the same case, however, low-income users have been shown to mostly use bikeshare outside of their neighborhoods -- even though stations were available there <sup>18</sup>.

Systems that have established programs for their low-income users usually place a station near the headquarters / branches of partner organizations. For instance, systems partnering with public housing authorities always have a station at one or more housing locations. Madison B-cycle, whose Subsidized Membership program is administered by the local YWCA, has a station at the main YWCA location. In each of these instances, the representative interviewed for this project stated that such placement was popular with program participants <sup>19</sup>.

An early feasibility study for the Seattle bikeshare program



# Main Concerns

suggests that serving underserved residents with bikeshare might not require placing stations in their neighborhoods: “There is...a high concentration of social services in the city center; bike-share use by people with low-incomes would aid mobility and access to these services. The city might try particular outreach to these organizations to help them encourage their users to consider bikesharing” <sup>20</sup> .

## Perception / Lack of understanding

Non-White cyclists are more concerned about personal safety than Whites. While cyclists of all races/ethnicity reported “motorists” being their primary safety concern, the figures for Blacks -- the majority minority in Kansas City -- are notable. The majority of Black cyclists note infrastructure issues (potholes, broken sidewalks, etc.) as their primary safety concern. Their rate of cycling <sup>21</sup> is the among the lowest of all surveyed groups -- lower than both Hispanics and Whites. Expansion of bikeshare in some underserved areas of Kansas City might be challenged by low existing of bicycles and lack of sufficient infrastructure.

Meanwhile, any program to address technological, financial, and location issues mentioned in the previous section are likely to fail if proper outreach is not conducted to potential users from underserved areas. For instance, recent criticisms of bikeshare’s efforts in such areas have noted simply a lack of understanding of how to use a system among residents. This is observed even if stations and bikes are present <sup>22</sup> .

## Best Practices

Attempts to provide bikeshare to underserved communities vary somewhat, but up to this point share three characteristics:

1. They offer a subsidized or free annual membership.
2. They maintain a method of identifying users. An online account is still created, though credit cards are usually bypassed and deposits / half-hourly use fees are dropped.
3. They involve a relationship with a third-party to fund or administer the program (usually a government agency, if the program isn’t operated by the city to start with).

The most popular program model adopted by bikeshare

systems is one that provides memberships to residents of local public housing. The program in Denver provides them free of charge; CitiBike in New York City discounts their \$95 annual membership to \$35. The former system permits an hour of free use (an extra thirty minutes) and does not charge a use fee beyond that. CitiBike allows 45 minutes of free use -- the same as other users -- and charges the same usage rates after that <sup>23</sup> .

A variant operates in Madison, WI, where low-income residents (using public assistance) receive \$5 annual memberships through the local YWCA. There, half-hourly usage rates are waived in favor of a “three-strikes” policy: qualifying members are allowed an hour of free use, and are penalized if use exceeds one hour. After three penalties, person is ejected from the program and must pay \$10 to have their membership reinstated <sup>24</sup> .

Capital Bikeshare operates a subsidized membership program through local affiliate of the BankOn organization, which provides financial services to the underserved. DC-area residents can sign up for a bank account (and credit or debit card) through Bank On DC and receive one-third off the \$75 annual membership. The program is marketed as an option for the unbanked. The normal usage fees apply. (CitiBike provides a similar option to members of a local community development credit union network <sup>25</sup> . Bay Area Bike Share is investigating working with Bank On SF to establish their underserved program <sup>26</sup> .)

CaBi offers another option not explicitly marketed towards the underserved. Their “Annual with Monthly Installment” program allows annual members to pay for the membership in twelve installments of \$7. Participants pay \$84 -- nine dollars more than a regular membership <sup>27</sup> .

Residents of Montgomery County, MD, who receive public assistance are eligible for free CaBi annual memberships. That program is paid for by a Job Access Reverse Commute (JARC) grant from the Federal Transit Administration <sup>28</sup> .

The Hubway in Boston, finally, provides \$5 annual memberships to qualifying residents of the City of Boston (though the system extends beyond the city). Residents receiving public assistance or with a household income 400% of the federal poverty line



# Quantitative Neighborhood Selection

are eligible <sup>29</sup>. Approved applicants are instructed to essentially sign-up for a corporate account on the Hubway website. Applicants are told they must have a credit or debit card, but the system, if needed, allows residents to pay in cash at the Hubway office. Finally, participants of the program are still subject to usage fees -- however, hardly anyone ever has to pay: Hubway tells participants they have 45 minutes free, when in fact, they are given a full hour.

Most of these programs provide a free bike helmet with membership. Many also offer safe-riding classes.

## A note on transit

Several systems are pursuing some sort integration of the bikeshare pass with the local transit pass. The approaches are varying: Madison B-cycle is investigating the creation of new, combined card that would also function with a local carsharing service; meanwhile, Bay Area Bike Share is working to allow members to check out bikes with a swipe of the local transit card. So far, though, no system has been successful. The issue holding back realization of such a project is software development and the associated cost. Finally, of all bikeshare systems approached for this research, all indicated their transit-integration projects were separate of their underserved programs <sup>30</sup>.

## Effectiveness

### Which of the previous approaches is most effective?

Though data and cases are limited, some conclusions can be made <sup>31</sup>. Hubway Boston's Subsidized Membership program appears to generate the greatest share of "active" users of the systems we surveyed <sup>32</sup>. In this year the system has signed up 460 people for the program. Similar numbers have been signed up each year since since Hubway began in 2011. Notably, most subsidized members actively use the system.

A system representative said the success has been a function of the organization's outreach efforts. Hubway staff had "piggybacked" on the meetings of local community organizations, explaining in person how the program worked. The effort was accompanied by print materials posted at neighborhood businesses and institutions. Staff from Denver and research from

Minneapolis / St. Paul confirm the importance in-person outreach at events and public meetings <sup>33</sup>.

## Recommendations and Conclusion

### Main concerns

Is a program to bring bikeshare to the underserved feasible for Kansas City B-cycle?

Based on the research of the landscape of underserved programs, the answer to that question depends on three things and whether the system can provide them:

1. Significant in-person outreach, as well as print and web marketing, to ensure residents understand any program. The Street Team model could be applied. The representative from Hubway Boston said this process should involve contacting as many community organizations as possible to try to speak at their events -- in their experience only a handful of organizations would agree to it <sup>34</sup>. (See Appendix E for list of KC organizations.)

2. Outside funding. B-cycle does not have the luxury that does the City of Boston, which mandates that Hubway operator Alta Bikeshare provides 500 \$5 subsidized memberships per year. Denver's program has been funded by a \$10,000 grant through Denver Health -- it been renewed every year since 2011. Madison's program is all provided by the YWCA.

3. Major investment of staff time. Resulting from the outreach and from administering the program otherwise. Boston has a full-time staff member dedicated to their Subsidized Membership program.

### Further Recommendations

The following actions might also ensure the success of an underserved program:

- » Implementation of a subsidy program or "Reduced Fare" membership level should be prioritized over placement of stations in underserved areas. Even the current 12-station system could serve many lower-income residents who do errands in the Downtown area <sup>35</sup>.
- » Create a program for which "public assistance" is the qualification for eligibility. Residence in public housing might be too limited. Note that the successful Hubway
- » Subsidized Membership program permits a wide range of qualifications.
- » Adjust marketing materials for outreach. "Create promotional advertisements that target communities





# Quantitative Neighborhood Selection

that racial/ethnic minorities can relate to” <sup>36</sup> .

- » Investigate online cash payment systems. Representative of PayNearMe platform believes existing software of theirs could be adapted to providing an alternative to credit/debit for low-income bikeshare users. Cash payment could also be opened up to all users, creating less of a two-tiered system. (See Appendix F.)
- » Investigate other possible technological barriers, such as Internet access.
- » Address safety perception by coordination with City or by locating underserved stations along existing bike routes / lanes.

## Conclusion

If Kansas City B-cycle is able to establish partnerships with relevant organizations, attract resources, and develop necessary organizational capacity, it can provide a program to bring many of Kansas City’s underserved to bikeshare. The scale and reach of such a program depends on the degree it is able to accomplish the three things mentioned before. It also depends on the receptiveness of local organizations and governments to supporting such a program. Reaching all of Kansas City’s underserved might never happen; yet, if the conditions are right, developing a significant program is not impossible, even in the short term.

## Quantitative Neighborhood Selection

The purpose of this section of the report is to identify neighborhoods in which to install new Kansas City B-Cycle stations as part of a larger project aimed at increasing access and ridership among low-wealth and medically underserved individuals.

### Questions

- » How many bike share stations are currently planned in what is defined as an underserved neighborhood?
- » Are there any underserved neighborhoods that are potentially suitable for bike share but not on the current bike share plan that may warrant more investigation?
- » Ultimately, where do bike share suitability and underserved indicators overlap?

### Methodology

To answer the first question the researchers felt it was important to compare two primary sources of information. The first is Kansas City B-Cycle’s existing plan for locations of planned stations. The second was detailed census tract data for the the coverage area to determine what census tracts in Jackson County, MO and Wyandotte County Missouri.

In the interest of narrowing down the census tracts

to simplify further analysis, researchers made a few immediate assumptions:

- » **Census tracts with low population density (3,000 residents per square mile) are not suitable for bike share and were filtered from the results.**
- » **Only census tracts with more than 19.4% of adults living below the poverty line would be included in analysis.**

**The first assumption** comes from prior feasibility research for bike share in Kansas City based on prevailing national bike share data. That report is called BikeShareKC Study Ideal residential density to assure financial sustainability of bike share is likely much higher than this paper’s cutoff of 3,000 residents per square mile but since this is not necessarily the goal of the project, these lower density tracts were included in the analysis.

**The second assumption** is based on the overarching objective of the project: to provide bike share access to underserved communities. A very simple method by which to eliminate census tracts that will not qualify as underserved would be to filter all results to include only those with higher rates of poverty. Researchers used the scale from KCHealthMatters.org to arrive at 19.4% <sup>37</sup> .

The following data was collected for all of the census tracts in Wyandotte and Jackson Counties. Each of these considered to be an indicator that could be used to define tracts as underserved communities. The indicator also shows what the researchers determined would qualify a tract as underserved or suitable for bike share. The source of that determination is in parentheses:

- » Households with no car: >7.5% (Red zone, KC Health Matters)
- » People Living Below Poverty Level: >19.4% (Red zone, KC Health Matters)
- » Percent of people who are non-white: >32.35% (Jackson County Non-White Population)
- » Percent of all renters who are cost burdened (cost of rent is greater than 30% of income): >52.2% (Red zone, KC Health Matters)
- » Percent of Households Receiving Section 8 Vouchers: >9.64 (Jackson County)
- » Retail Jobs: >9.75% (Jackson County), Indicates higher than average density of retail, strong correlation with bike share usage.

It is also important to note that, while there are more indicators used to define a community as medically





# Results

underserved, many of these are not collected on a census tract level. For example most health statistics are only available at the county level which was not nearly granular enough for the purpose of bike share planning.

The second and third questions required us to compare the census tract data (as explained above) with Kansas City B-cycle's bike share suitability analysis.

**Here, researchers made a third assumption: Only census tracts within two miles of existing or funded bike share stations would be considered for further analysis.**

This again was to narrow the focus area. Two miles was selected because the average bike share trip in Kansas City B-cycle's current system is two miles. Neighborhoods beyond two miles are believed to be too far from the existing stations to provide suitable access to the system; like any other network, bike share requires connectivity between multiple nodes.

It is possible that as bike share proliferates throughout more of the metro area, the 2 mile radius from the existing system becomes less important. But for the purpose of this project it is assumed that only stations immediately surrounding the existing system will be considered.

## Results

A total of 31 stations are already planned in or directly adjacent to underserved tracts (6 in Wyandotte County, KS and 25 in Jackson County, MO) in 14 census tracts. An additional 16 census tracts show promise for future consideration as residential nodes.

The neighborhoods for which bike share stations are already planned are generally defined as follows (including the number of stations planned in that neighborhood and relevant census tract data).

### Westport Tracts (7 Stations; 4 have been installed)

	Tract 1	Tract 2	Tract 3
Mean travel time to work	18.6 min	16.4 min	15.6 min
Retail jobs located in Tract	0.79%	9.34%	18.47%
Households receiving Section 8	No Data	1.36%	3.18%
Non-white population	10.68%	25.83%	40.94%
Household poverty	23.83%	24.48%	33.03%
Households without a car	12.16%	12.80%	23.18%
Renters who are cost burdened	52.26%	39.02%	55.38%

### Westside (3 Stations)

Mean Travel Time to Work	17.9 min
Retail Jobs	2.16%
Households receiving Section 8	5.88%
Non-white population	67.20%
Household Poverty	32.73%
Households without a car	21.50%
Renters who are cost burdened	48.09%

### Columbus Park Census Tract (3 Stations)

Mean Travel Time to Work	23 min
Retail Jobs	0.00%
Households receiving Section 8	No Data
Non-white population	56.53%
Household Poverty	49.04%
Households without a car	19.50%
Renters who are cost burdened	41.71%

### Armour Boulevard Tracts (5 Stations)

	Tract 1	Tract 2
Mean travel time to work	18.2 min	28.9
Retail jobs located in Tract	24.15%	0.00%
Households receiving Section 8	7.10%	19.75%
Non-white population	51.12%	78.67%
Household poverty	36.43%	42.73%
Households without a car	35.14%	16.10%
Renters who are cost burdened	43.65%	75.00%

# Results

## University Tract (1 station)

Mean Travel Time to Work	21.1 min
Retail Jobs	22.16%
Households receiving Section 8	19.90%
Non-white population	90.44%
Household Poverty	19.57%
Households without a car	12.33%
Renters who are cost burdened	50.00%

## Historic Northeast Tract (2 stations)

Mean Travel Time to Work	21.5 min
Retail Jobs	9.59%
Households receiving Section 8	6.23%
Non-white population	61.65%
Household Poverty	33.36%
Households without a car	23.02%
Renters who are cost burdened	51.18%

## KU Med Tracts (7 Stations)

	Tract 1	Tract 2
Mean travel time to work	17.4 min	19.5 min
Retail jobs located in Tract	6.03%	No Data
Households receiving Section 8	No Data	1.73%
Non-white population	14.34%	20.32%
Household poverty	23.36%	24.23%
Households without a car	8.50%	9.68%
Renters who are cost burdened	28.87%	43.71%

## Southtown Tract (2 stations)

Mean Travel Time to Work	15.3 min
Retail Jobs	4.44%
Households receiving Section 8	12.81%
Non-white population	50.83%
Household Poverty	38.98%
Households without a car	16.65%
Renters who are cost burdened	62.21%

## Union Hill Tract (3 Stations)

Mean Travel Time to Work	17.4 min
Retail Jobs	.28%
Households receiving Section 8	18.06%
Non-white population	39.12%
Household Poverty	34.96%
Households without a car	28.37%
Renters who are cost burdened	53.61%

## Downtown KCK (2 stations)

Mean Travel Time to Work	20.5 min
Retail Jobs	No Data
Households receiving Section 8	No Data
Non-white population	29.29%
Household Poverty	21.50%
Households without a car	9.01%
Renters who are cost burdened	37.53%





# Conclusion

Census tracts that met our criteria but did not previously have bike share stations planned are shown in the table below. Determining which tracts to install stations would require further study. A variety of factors would have to be considered including but not limited to proximity to other stations, granular analysis of more suitability factors, public engagement, etc. However, based on this report, further research is merited when funding and staffing capacity becomes available.

Census Tract, 2010	Neighborhood
29095006300	South Ivanhoe
20209045100	South Rosedale
29095016600	Wendell-Key
29095005500	NW-Ivanhoe
20209043301	Edison School
29095016900	SW-Ivanhoe
29095005400	South Key Coalition
29095005200	Ivanhoe-Center City
29095006600	Southmoreland
29095008000	Blue Hills South
29095015400	Downtown East
29095005100	Central Hyde Park
29095006100	SW Oak Park
29095000900	Scarritt
29095007600	North Blue Hills
29095001800	Parkview

## Conclusion

### Recommendation 1:

Based on the results mentioned in the previous section, it is recommended that Kansas City B-cycle staff contact community leaders to gauge interest in the neighborhoods where bike share stations are already planned. Generally those are:

- » Westside
- » Columbus Park
- » Armour Boulevard
- » Historic Northeast
- » KU Med

### Recommendation 2:

Apply recommendations from Landscape Analysis to neighborhoods in existing system. This includes implementing subsidized membership programs, partner with community organizations.

### Recommendation 3:

Seek funding for bike share stations within the communities listed in recommendation 1. A community planning process is absolutely vital in deciding on where these stations will go. That planning effort should be led by community organizers hired through an RFP process.

### Recommendation 4:

Seek funding to replicate the community outreach and planning in all other neighborhoods identified in the results section of this report where bike share stations are not currently planned.



# Community Engagement

Through an RFP Kansas City B-Cycle solicited proposals from qualified individuals and organizations to perform community outreach in several targeted communities for future bikeshare expansion. The RFP went out to over 50 local organizations and consultants and resulted in the hiring of two consultants: Westside Housing Organization and Mary Jo Draper of Draper Communications. The target neighborhoods were selected based on a methodology outlined in our report called Neighborhood Selection Report.

Based on this neighborhood selection and the expertise of our outreach consultants we narrowed the focus neighborhoods down to:

- » Westside
- » Armour Boulevard Corridor
- » Troost Corridor
- » Westport
- » KU Med/Rosedale
- » Union Hill

## Outreach Activities and Methodology

**Stakeholder Group (Westside):** A group of community leaders and Westside residents met to discuss how bike share might be used in their community specifically on the topic of access for the under resourced. The discussion led us to a clearer picture of how members of the community might access and use bike share. There were also great suggestions as to where stations should be located in Westside.

## The stakeholder group included:

- » John Fierro, Mattie Rhodes
- » Julie Robinson, KC Public Library Ruiz Branch
- » Lynda Callon, Westside CAN Center
- » Monica Banks, KC Housing Authority - Villa del Sol Apartments
- » Mr. Eugene, Resident West Bluff Townhomes
- » Reena Perry, KC Housing Authority - West Bluff Townhomes
- » Steve Zapien, KC Parks and Recreation - Tony Aguirre Community Center

**Stakeholder Interviews:** Much like the stakeholder group in the Westside, these one-on-one interviews resulted in a better understanding of how bike share in under resourced neighborhoods might access and use bike share. In most cases these were representatives of organizations providing services directly to low-income, medically indigent, and/or homeless. Some though were neighborhood associations or community improvement organizations.

## The most productive of these conversations were with the following:

- » Shaleese Rocket, Graciela Radillo and Doug Langner, St. James Place
- » Idris Raoufi, 816 Bicycle Collective
- » Elizabeth Bejan, RevolveKC
- » Diane Burnette, MainCor
- » Amanda McGee, West 39th St. CID
- » Tim Van Zandt, St. Luke's Health System
- » Brett Shoffner, Rosedale Development Association and Roanoke Park Conservancy
- » Neighborhood Associations - Center City, Troost Neighborhoods Coalition, Valentine, Plaza Westport, Hyde Park
- » Diana Adorno Boody, Kansas City Housing Authority (This interview occurred later in the process and notes are not included in the consultant reports. But the conversation was extremely productive and enlightening. There is a great potential for a very meaningful partnership in the future.

Additionally we recently met with public health researchers from University of Kansas Medical School and Kansas City University of Medicine and Biosciences to identify better methodologies for outcomes evaluation. There will likely be a future partnership with one of those schools to implement an evaluation project that will be coordinated not only with Bike Share (Kansas City B-cycle) but also all programs of our partner organization BikeWalkKC.

## Presentations/Community Meetings

Presentations at neighborhood meetings were very productive to the conversation by adding ideas and concerns from a residential perspective. We learned more about where people would like to ride a bike and also more about the barriers specific to biking in their neighborhoods. For example, the "sharrows" on Armour Blvd provide little comfort to those who are not already adept at bicycling in traffic; a general lack of bicycle facilities is a major hurdle to biking in KC. Most people we talked to agreed that they would like to bicycle for errands or commuting to work but feel unsafe doing so.

## Online Survey and MindMixer

Another layer of the conversation was the online engagement component. Although online outlets like these have a bias toward tech savvy and well educated populations, we felt that it was still important to provide this opportunity to capture information specifically related to our target neighborhoods. Full reports from these can





# Community Engagement

be found in the appendix. The surveys targeted residents and workers in our selected communities and asked their ideas on how bike share would work there. MindMixer was used to get ideas on station placement from the community.

## Key Findings and Recommendations

### Station Locations Are Important

While there were numerous suggestions for where to locate stations in the target neighborhoods, there was general consensus on several key factors. They include:

#### Connections to daily errands like grocery stores and social services

- » Stations near recreation opportunities
- » Locate stations in dense residential populations inside the target areas
- » Consider locations people who live inside the target neighborhoods may need to go that may be outside of the target neighborhoods

#### Must Provide Low-cost Membership Option and Access to the Unbanked

The information we gleaned on the matter of low-cost memberships was very enlightening. Perhaps the most important idea that came of all of the discussions was that charging a nominal fee would be better than offering membership for free. Specifically we recommend implementing the following:

#### A new annual membership tier called “Reduced Fare” priced at \$5 - \$25

- » Identify partners to provide several locations where people can sign up
- » Pilot a no-credit/debit card option in which members are signed up through an existing social service
- » Partner with KCATA to make a seamless integration between bus passes and bike share in the future

#### Target Specific Marketing is Required

Through our discussions and surveys with the community it is clear that the underlying challenge to bicycling in KC is not the cost of bike share memberships or even access to bicycles. The biggest barrier is simply the perception of bicycling for utility. This stems from a variety of concerns that must be addressed through strategic partnerships, expanded programming that serves KC’s under-resourced. Ideas include but are not limited to:

- » Identify the “evangelists” who our target audience can relate to who can show people how to use the system
- » Build bicycling culture through educational programming at places like public housing. Earn-A-Bike programming where individuals can work to refurbish a used bike is an often suggested idea.
- » Work with BikeWalkKC to align their education and outreach efforts with the goals of this plan. Building biking culture in Kansas City’s under-resourced communities should be a top priority.
- » Create brochures to promote the system that are culturally sensitive and easy to understand and multi-lingual. Place these in places like public libraries, KC Housing Authority office, community service offices, etc.
- » Continue building relationships with the stakeholders identified in this project and continue growing that network.

#### Built Environment is Still Major Barrier

The most frequent claim from our outreach is that the average person is still afraid to bike in Kansas City. Nearly every person we interviewed believed that they or someone they know would like to bike for utility but lack of bike facilities is a major barrier. And for those who do bicycle by necessity, some feared, are unsafe doing so. And most of this “interested but concerned” group of potential bike riders don’t feel that “sharrows” or traditional bike lanes are enough; more separation from traffic is needed. And they have to take people where they want to go. Additionally, the pedestrian environment is not actively encourage walking which is necessary for transit systems (including bike share) to function well; people don’t always feel safe walking to the bus stop or a bike share station.

#### Use Kansas City B-cycle as a platform for built environment change

- » Work with BikeWalkKC to ensure that their advocacy campaigns align with the goals of connecting these target neighborhoods to high quality bicycle AND pedestrian facilities.
- » Provide more educational opportunities for people to learn how to ride in traffic until a more connected network of high quality bikeways is complete.



# Built Environment Assessment

## Built Environment Assessment

Although a built environment assessment was not originally a component of this project, we felt that at least a brief literature review and a local analysis of bike facilities was warranted. Because a common refrain during our community outreach was I don't feel safe riding my bike without bike lanes we wanted to see if the literature supported such an anecdote. Additionally, we wanted to determine if investment in bicycle and pedestrian infrastructure was equitable in Kansas City, Missouri where most of this project focused.

While the local assessment is a good start for predicting a potential increase in bicycle ridership with increased investment in bicycle facilities it is not nearly comprehensive. Such comprehensive analyses are typically conducted as part of a city's bicycle planning process to determine, quantitatively, bicycle routes and recommended facility improvements. However, Kansas City, MO (or any other local government in the region for that matter) has never done such a study. Perhaps the closest example is the Market Demand Analysis in our original BikeShareKC Study conducted in 2011.

Perhaps not surprisingly, the geographic area highlighted by the BikeShareKC Study with the highest potential demand for bike share is an area roughly bounded by the Missouri River, Brush Creek, Paseo Blvd and Rainbow Blvd. Since the predictors of bike share ridership are nearly identical to those of general bicycle demand we have assumed here that the demand analysis in the BikeShareKC Study would be a good way to prioritize bicycle and pedestrian infrastructure improvements. This is the case for four primary reasons:

This is the area where bicycling, walking and transit ridership are already the highest in the region. Our model suggests that unrealized demand for bicycle infrastructure is highest here - the greatest increase for biking (and likely walking) per dollar invested. This area is also our primary bike share service area and we need the bicycle infrastructure to increase ridership. Pedestrian crash rates are particularly high in this area. Fatal pedestrian crashes are most common in underserved census tracts. Bicycle crashes are likely more common here too but that data is not collected.

## Key Findings

### Kansas City's core underserved by transportation system

The geographic area described previously is home to some of the area's largest employers, its leading cultural

institutions, as well as its greatest density and diversity of residents. As our model predicted it is the area that counts the greatest share of residents who -- by necessity, convenience, or personal choice -- use transportation modes besides the automobile. For reasons ranging from the concentration of people and density of destinations, to diversity in personal income, the highest rates of cycling and walking commuting, some of the highest levels of transit ridership, and the lowest rates of private automobile ownership and access are found in this corridor. This in spite of extremely low levels of investment in active transportation, particularly bike infrastructure.

Unfortunately, the transportation network here remains overwhelmingly designed for the car, making use of alternative modes is, at best, inconvenient, at worst, dangerous. While some important improvements to transit service have occurred in recent years with the implementation of improved bus service on Main St. and Troost Ave., little work has been done to fill in crucial gaps in bicycling and pedestrian infrastructure. Despite this area being home to the highest rates of bicycling commuters within the City of Kansas City, MO, less than 13% of the city's bicycling infrastructure is located there. Major intersections throughout Downtown and Midtown, meanwhile, remain treacherous for the many pedestrians who cross them daily.

For Kansas Citians, the consequences of this underservice are significant. The data on safety is striking, and is perhaps the strongest indicator of how those who already use alternative modes are underserved by the infrastructure in place: according to the Mid-America Regional Council (MARC), the River-Crown-Plaza corridor records the highest number of pedestrian crashes in the entire region. Overwhelmingly, fatal pedestrian crashes occur most often in underserved census tracts.

The same spatial data for bicycle crashes is not available, but a compelling anecdote illustrates the state of bicycle safety in the heart of the city: As part of its traffic safety efforts, MARC recently developed a seminar for Truman Medical Center staff on pedestrian and bicycle crash prevention, in response to an increase in trauma admissions resulting from pedestrian and bicycle crashes to the urban hospital. Coupled with Census data showing marked increases in both cycling and walking for commuting in the corridor during the past few years, the need for infrastructure improvements becomes more apparent and urgent.





# Built Environment Assessment

## Built Environment Predicts Behavior - Unrealized Demand for Cycling in Target Area

Literature on the subject of how the built environment affects personal behavior indicates a significant unrealized demand for active transportation modes in our focus area. Active transportation is far more sensitive to environmental and safety concerns than driving. Factors such as traffic speed, traffic volume, pavement conditions, lane widths negatively affect bicycling rates <sup>38</sup>.

It is also clear that as cities focus on improving motor vehicle flow walking and biking rates decrease. <sup>39</sup> As a result of this focus on car level of service, drivers speed and driving rates increase feeding into the vicious cycle of our built environment. Additionally, car dependence strongly correlates with rates of obesity <sup>40</sup>.

But the cycle can be reversed. Research also suggests that rates of active transportation increases with the provision of safe facilities. This is particularly true of bicycling for which there is a strong correlation between cycling rates and the installation of separated bike lane <sup>41</sup>.

Based on the demand model we created for bike share, the lack of infrastructure is likely a contributing explanation for why our rates of bicycling lag so far behind peer cities.

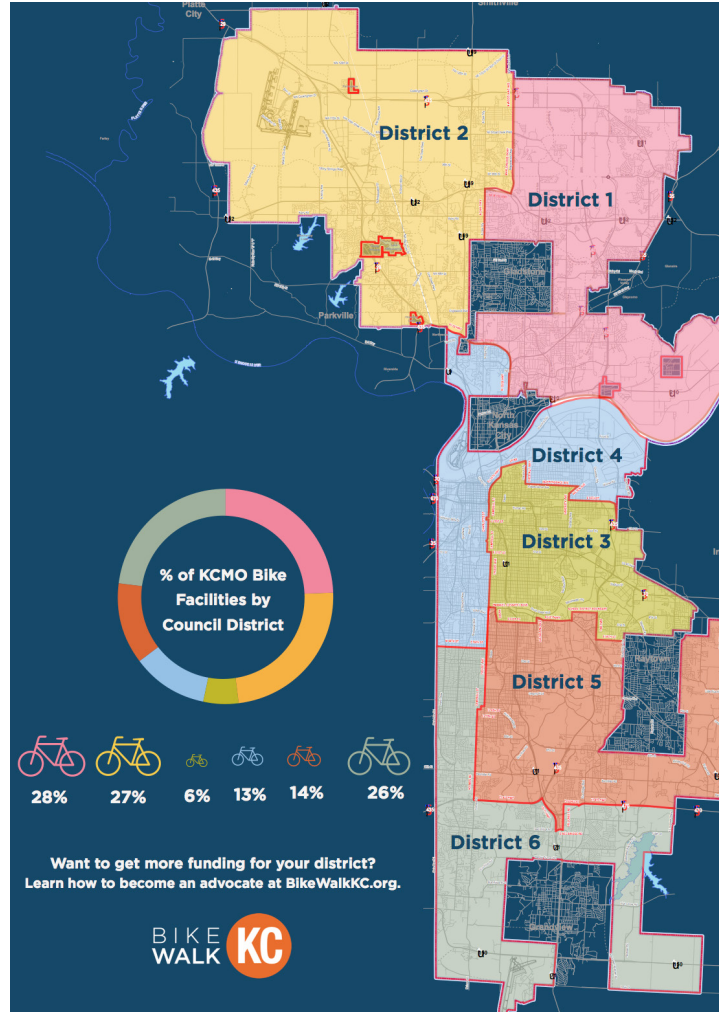
But it is difficult to estimate by how much bicycle ridership might increase based on infrastructure; such a calculation would require significantly more literature review and demand modeling.

## Drastic Inequity in Active Transportation Investment in Kansas City

The League of American Bicyclists has always taken a Five E's approach to evaluating bicycle friendly community applications (Engineering, Education, Encouragement, Enforcement and Evaluation). There has been much focus lately on a sixth E -- Equity.

We evaluated the existing bicycle facilities in KCMO by council district, and have found a startling fact: KC's bicycle infrastructure has been developed in a completely inequitable pattern.

- Here we break it down by each district's share of the total mileage of bike lanes and trails:
- » District 1 (Primarily Clay County portion of KCMO): 28%
  - » District 2 (Primarily Platte County portion of KCMO): 27%
  - » District 3 (East of Troost, North of Brush Creek): 6%
  - » District 4 (West of Troost, Downtown to Brush Creek, Briarcliff, Historic Northeast): 13%
  - » District 5 (East of Troost, South of Brush Creek to I-435)

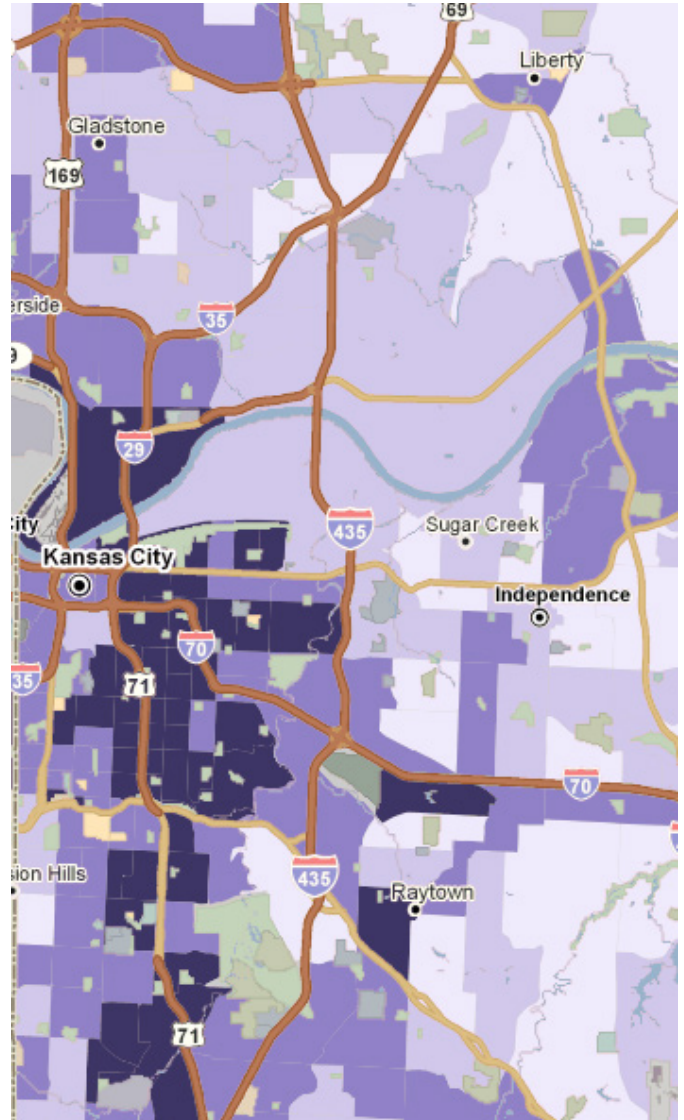
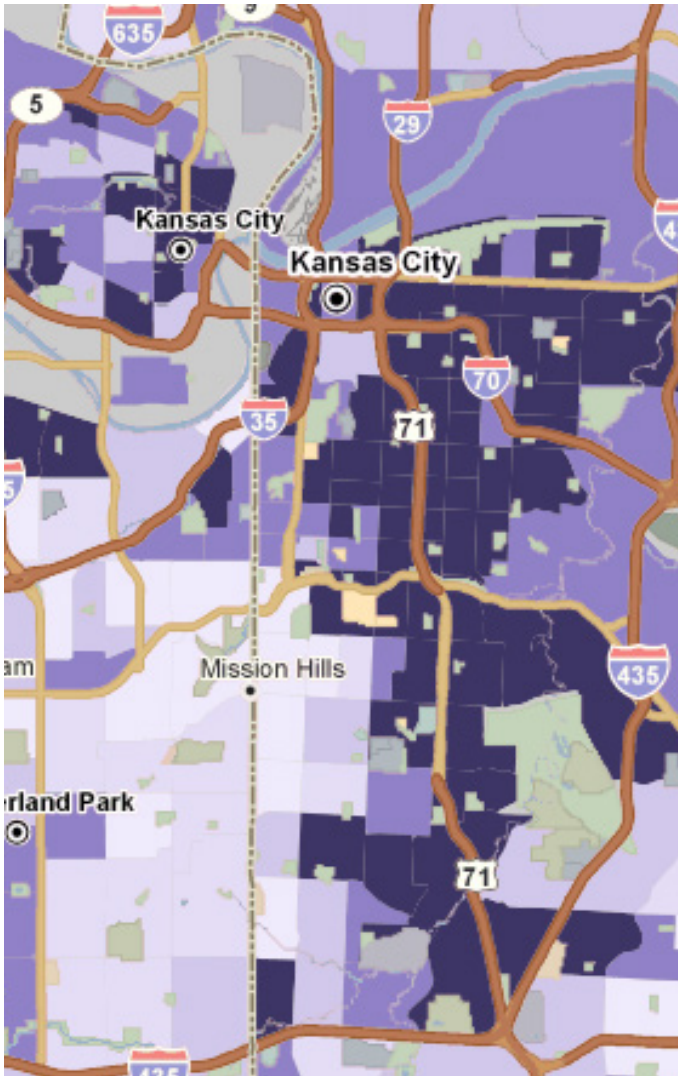


The future funding situation is even less bright. Below is a council district breakdown of the most recent round of federal transportation funding. This funding will cover nearly every active transportation project in the city between 2015 to 2019.

- Total Federal Funding by KCMO District (bike/ped/livability only):
- » District 1: \$4.9 m
  - » District 2: \$23.9m
  - » District 3: \$2.6 m
  - » District 4: \$1.4 m
  - » District 5: \$2.2m
  - » District 6: \$0

# Built Environment Assessment

Here we see that the most impoverished census tracts in the city currently have no bike lanes serving them. The map shown below highlights the city's census tracts by the percentage of households with no access to a car - in the darkest shades of blue 14% or more households have no car. Many of the tracts exceed 40%. And nearly all of the dark blue tracts are within Council districts 3, 4 and 5.



And, how many people are shut out of the job market or struggle to get to everyday necessities because investment in alternative transportation modes is so low in the areas where it is most needed?

It stands to reason that areas with the highest concentration of people without cars should have the highest demand for alternative modes of transportation and so it is no surprise that, as the images show below, transit and bike commuting are highest in these underserved census tracts.

For a look at relative job access of various bicycle infrastructure projects in KCMO below are two examples of linear bike facilities. Both are approximately 5.25 miles long, one is real and the other theoretical. This exercise is merely to compare access to jobs and the value of bike facilities as transportation corridors and not an indictment recreational trails.

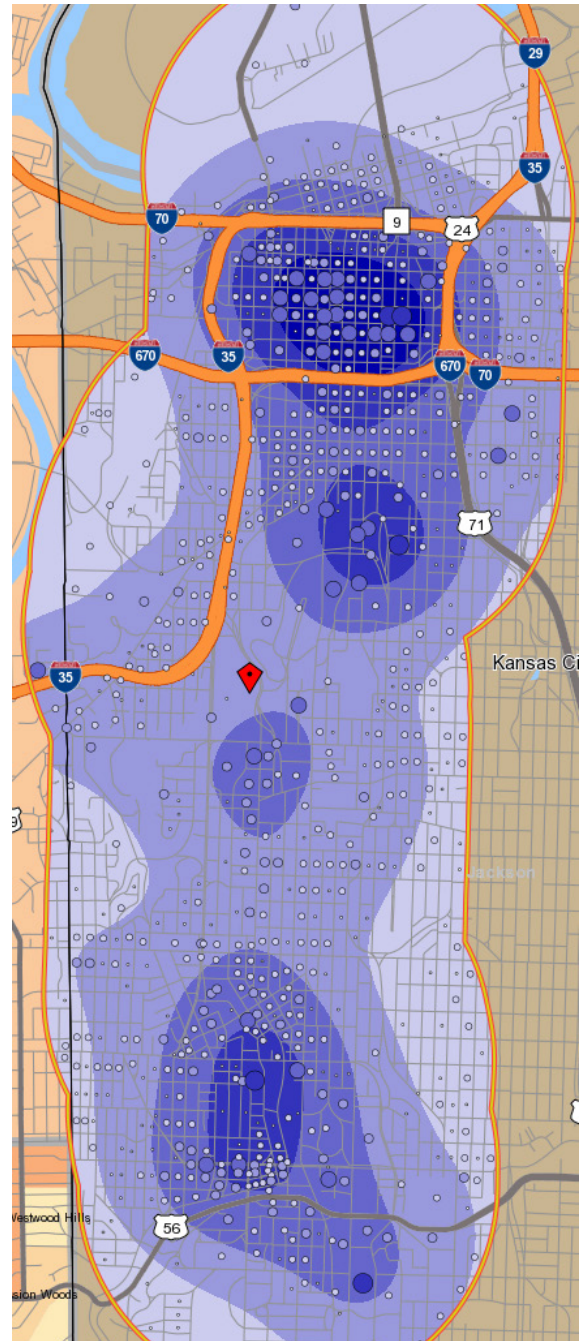
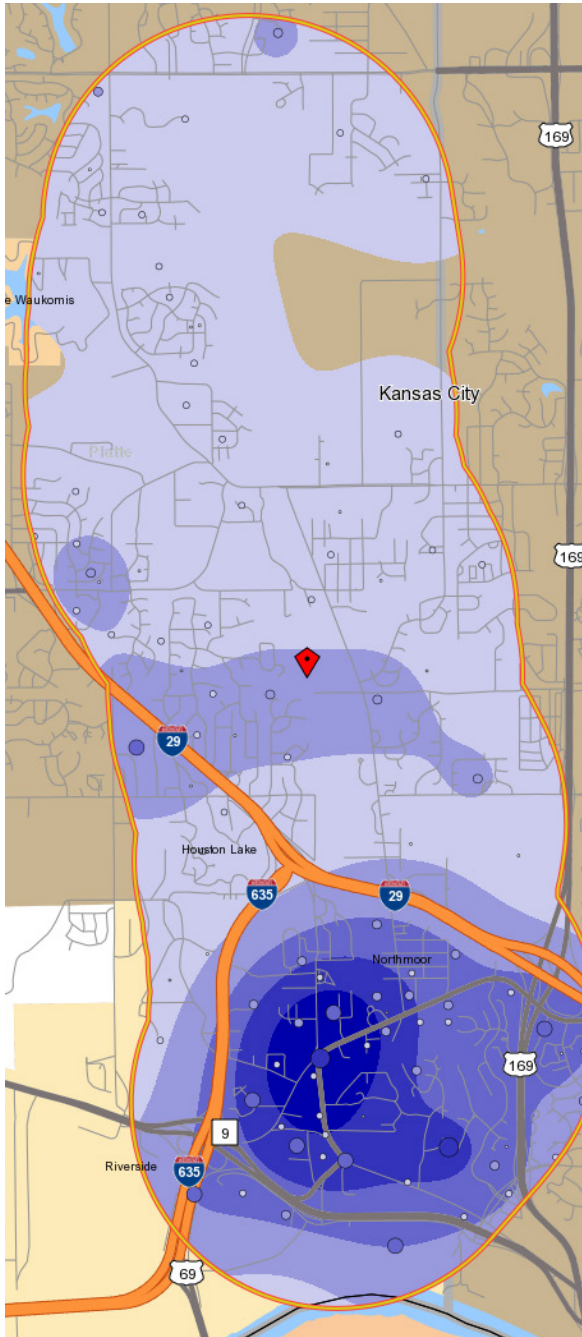




# Built Environment Assessment

The first is the Line Creek Trail in the northland, a recently completed multi-use path in Platte County. Look at the heat map of jobs within a mile of the trail:

Now compare that to the theoretical River-Crown-Plaza bikeway:





# Station Recommendations

## Station Location Recommendations 42

The purpose of this section is to ensure that future expansions of Kansas City B-cycle are aligned with the overarching goal of increasing equitable transportation opportunity in Kansas City. Here we will discuss how the most recent methodology of expansion phasing should be adapted to ensure that implementation of future phases is done in an equitable manner.

This document will be adopted as a matter of organizational policy to inform the coming phases of Kansas City B-cycle expansion.

### Historical Context

In 2012 Bike Share KC (now Kansas City B-cycle) partnered with a local consultant to develop a quantitative analysis to serve as the basis for future implementation. The resulting BikeShareKC Study ultimately directed B-cycle's launch in 2012 by guiding the selection of specific station locations within the recommended Phase I area. The conceptual study also laid the groundwork for future phasing. See image at right.

By analyzing several geospatial factors, BikeShareKC Study determined what general areas were most conducive to bike share usage. These factors ranged from residential and worker population density to number of nearby transit lines and parks.

In 2013 Kansas City B-cycle commissioned a follow up study called BikeShareKC Phase 2 Conceptual Study. This report analyzed the first year of B-cycle use to determine what of the spatial factors considered in the initial planning were the greatest generators of bike share ridership. The study determined that of these factors, proximity to retail and service jobs was the biggest driver of system use.

However, for the first expansion (implemented in October of 2014), Kansas City B-cycle staff expressed uncertainty about the results in the Conceptual Study based on the limited size of B-cycle. Consequently, staff decided to develop a new framework for prioritizing implementation. While keeping the original Market Demand Analysis as the basis for determining bike share feasibility, the new methodology added a clearer and more accurate way to determine precise locations of future stations and their prioritization.

### Station Location Recommendations

The Neighborhood Analysis and Community Engagement portions of this project identified some geographic recommendations that aligned well with block-level stations we have already identified in our previous plans (via methodology summarized above). As a result the station

siting based on the findings of this project is more a matter of phasing the future expansions as opposed to new station identification. These recommendations are intended to guide the process for the next phases of implementation so that equity is not only included but prioritized in the process. They were selected based on two general criteria:

The findings in the Neighborhood Selection report Recommendations derived from the community engagement process

The following locations are recommended for implementation and should be prioritized per the phasing methodology as outlined. Because our the next expansion phase

**Initial Phase (12 stations):** Adopting this list for the next expansion will create a useful network without significantly compromising station density.

- » 17th and Summit
- » Southwest Blvd and Summit
- » Armour and Gillham
- » Armour and Troost
- » 25th and Holmes
- » 23rd and Holmes
- » 29th and Gillham
- » 31st and Gillham
- » 51st and Troost
- » 51st and Holmes
- » 39th and Rainbow
- » 39th and State Line

**Subsequent Phases:** As funding becomes available the priority should be given to the list below. The zones would require further community engagement similar to that outlined in a previous section of this report.

### Individual Stations

- » Armour and Broadway
- » Armour and Main
- » 33rd and Pennsylvania
- » Valentine and Broadway
- » 21st and Summit
- » 39th and Troost
- » Emanuel Cleaver and Troost
- » 31st and Troost
- » 43rd and State Line
- » 43rd and Roanoke
- » 43rd and Pennsylvania
- » 43rd and Main
- » 51st and Oak
- » 55th and Troost
- » 31st and Main





# Implementation Plan

## Priority Zones

- » Greater Downtown Zone: remaining stations recommended for infill
- » Columbus Park Zone
- » Downtown Kansas City, KS Zone
- » Historic Northeast Zone
- » Urban Neighborhood Initiative Zone

## Recommendations for Future Expansion Phases

Update the Demand Analysis to include health and wealth indicators similar to those described in the Neighborhood Selection section of this report  
Replicate the engagement methodology described in this report in order to prioritize station locations based on community input.

## Implementation Plan

### Recommendations

The following are the recommendations compiled from the various parts of this document and streamlined for clarity.

### Programming

- » Implement “Reduced Fare” membership level - \$5 - \$15 for an annual membership for which any sort of public assistance is qualification
- » Pilot a program in which users are not required to have a credit or debit card via a partnership with one of the organizations from the engagement interviews. This program should be modeled after Boston Hubway’s unbanked program.
- » Develop an Earn-A-Bike or similar program with BikeWalkKC to specifically target clients of the organizations mentioned in the engagement section of this report.

### Policy and Advocacy

- » Investigate feasibility of seamless transfers between bike share and transit with KCATA, other transit operators, and the Regional Transit Coordinating Council at MARC
- » Adopt a local transportation policy platform to positively affect the built environment. Possibilities could include:
  - Prioritizing active transportation investment in the area defined by our Built Environment Assessment
  - Requiring “Road Diets” and traffic calming on streets in the area defined by our Built Environment Assessment
  - Adopting a new metric for street performance that places more emphasis on walkability vs. car traffic level of service (the current measure)
- » Adapted BikeShareKC Market Demand Analysis to identify corridors that might be good candidates for addition to the city’s BikeKC plan.
- » Actively engage in an advocacy campaign to add bicycle infrastructure in the area described in the Built Environment Assessment

## Station Locations and Planning

- » Adopt “Initial Phase” described in the Station Locations section as official Phase 3 expansion partially funded for late 2015:
  - » 17th and Summit
  - » Southwest Blvd and Summit
  - » Armour and Gillham
  - » Armour and Troost
  - » 25th and Holmes
  - » 23rd and Holmes
  - » 29th and Gillham
  - » 31st and Gillham
  - » 51st and Troost
  - » 51st and Holmes
  - » 39th and Rainbow
  - » 39th and State Line

- » Focus capital fundraising efforts to prioritize implementation of remaining stations and zones listed in the Station Locations section
- » Update the current demand modeling to include health and wealth indicators similar to those described in the Neighborhood Selection section of this report
- » Replicate the engagement methodology described in this report in order to prioritize station locations based on community input.

## Target Specific Marketing

- » Develop and implement a peer to peer social marketing program
- » Create brochures to promote the system that are culturally sensitive, easy to understand, and multi-lingual.
- » Place literature in places like public libraries, KC Housing Authority office, community service offices, etc.
- » Continue building relationships with the stakeholders identified in this project and continue growing that network

## Timeline

- January 2015:** Outline for Peer to Peer Social Marketing Program
- February 2015:** Publish Kansas City B-cycle policy platform & Create Brochures
- March 2015:** Launch of Reduced Fare Membership & Unbanked Pilot
- April 2015:** Update Demand Analysis and Launch Advocacy Campaign with BikeWalkKC
- June 2015:** Pilot Earn-A-Bike Programming
- September 2015:** Report on Seamless Transfers with Public Transportation
- January 2016:** Install Recommended Stations



# Footnotes

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3. Arlington County Capital Bikeshare: TRANSIT DEVELOPMENT PLAN: Fiscal Years 2013 to 2018. Bike Arlington. From [http://www.bikearlington.com/tasks/sites/bike/assets/File/Arlington\\_County\\_Capital\\_Bikeshare\\_TDP\\_FY2013-2018\\_Nov2012.pdf](http://www.bikearlington.com/tasks/sites/bike/assets/File/Arlington_County_Capital_Bikeshare_TDP_FY2013-2018_Nov2012.pdf). Early systems NiceRide Minnesota and Bixi Montreal were started in 2008/09. Most other major North American systems have followed.
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6. p. 5, Buck, Darren. 2012. Encouraging Equitable Access to Public Bikesharing Systems. From <http://bikepedantic.files.wordpress.com/2013/01/finalcapstonedbuckpdf.pdf>.
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12. An Equity Profile of the Kansas City Region. PolicyLink. [http://www.neighborhoodindicators.org/sites/default/files/publications/an\\_equity\\_profile\\_of\\_the\\_kansas\\_city\\_region\\_-\\_policylink\\_and\\_pere\\_-\\_23august20131.pdf](http://www.neighborhoodindicators.org/sites/default/files/publications/an_equity_profile_of_the_kansas_city_region_-_policylink_and_pere_-_23august20131.pdf), p. 37.
13. As of 2012, including NYC, Denver, San Antonio, Toronto. From Buck, 2012.
14. "Housing Choice Vouchers Fact Sheet." HUD.gov. From [http://portal.hud.gov/hudportal/HUD?src=/program\\_offices/public\\_indian\\_housing/programs/hcv/about/fact\\_sheet](http://portal.hud.gov/hudportal/HUD?src=/program_offices/public_indian_housing/programs/hcv/about/fact_sheet).
15. Montreal, for instance. BIXI charges \$1.75 CAD for 46-60 minutes' use, \$3.50 for 61-90 min. and \$7 for each additional half hour. Denver B-cycle charges \$1 for 31-60 min. and \$4 for each additional half hour. (respective system websites, Jan. 2014)
16. Interviews with Claire Hurley, Operations Manager, B-cycle. Jan. 13, 2014. Also, Wendy Stewart, Denver Bikesharing; Nicole Freedman, Boston Bikes (City of Boston). Both Jan. 16, 2014.
17. p. 68, An Equity Profile of the Kansas City Region. PolicyLink. [http://www.neighborhoodindicators.org/sites/default/files/publications/an\\_equity\\_profile\\_of\\_the\\_kansas\\_city\\_region\\_-\\_policylink\\_and\\_pere\\_-\\_23august20131.pdf](http://www.neighborhoodindicators.org/sites/default/files/publications/an_equity_profile_of_the_kansas_city_region_-_policylink_and_pere_-_23august20131.pdf).
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19. Interview with Claire Hurley, Operations Manager, B-cycle. Jan. 13, 2014.
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## Footnotes

25. "Discounted Annual Memberships," CitiBikeNYC.com. From <http://citibikenyc.com/pricing/discounted>
26. Correspondence with Matt Lasky, San Francisco Municipal Transportation Agency. Jan 13, 2014.
27. "FAQ," CapitalBikeshare.com. From [http://capitalbikeshare.com/faq#what\\_is\\_an\\_annual\\_installment](http://capitalbikeshare.com/faq#what_is_an_annual_installment)
28. "Montgomery County Bikeshare," Montgomery County Maryland. From <http://www.montgomerycountymd.gov/bikeshare/>
29. "Montgomery County Bikeshare," Montgomery County Maryland. From <http://www.montgomerycountymd.gov/bikeshare/>
30. Interviews with representatives with BABS, Denver, Madison, Boston.
31. Representatives of neither Capital Bikeshare nor Montgomery County returned attempts to contact them, so it's unclear how effective any of their programs are in one of the country's largest systems.
32. Denver only signed up 32 new members in 2013, for a total of 143 since the program began. Less than half of program members are "active." (Denver B-cycle Inclusivity Membership Program, Fall Update; see Appendix C.) Madison has signed up fewer (Interview Claire Hurley, Ops. Manager, B-cycle).
33. Interview Wendy Stewart, Denver Bikesharing, Jan. 16, 2014; Sarah Kretman Stewart, MPH, MEd; David C. Johnson, MPH; William P. Smith, MA. "Bringing Bike Share to a Low-Income Community: Lessons Learned Through Community Engagement, Minneapolis, Minnesota, 2011." CDC.gov. [http://www.cdc.gov/pcd/issues/2013/12\\_0274.htm](http://www.cdc.gov/pcd/issues/2013/12_0274.htm)
34. Interview with Nicole Freedman, Boston Bikes. Jan. 16, 2014.
35. p. 6. Sarah Kretman Stewart, MPH, MEd; David C. Johnson, MPH; William P. Smith, MA. "Bringing Bike Share to a Low-Income Community: Lessons Learned Through Community Engagement, Minneapolis, Minnesota, 2011." CDC.gov. [http://www.cdc.gov/pcd/issues/2013/12\\_0274.htm](http://www.cdc.gov/pcd/issues/2013/12_0274.htm)
36. Ibid., p. 7.
37. <http://khealthmatters.org/disparities-dashboard>
38. Lowry, et al., Using Level of Service to Assess Community-wide Bikeability, 2012
39. Baumann, et al., Cycling: Getting Australians Moving - Barriers, Facilitators, and Interventions to Get More Australians Physically Active Through Cycling, 2008
40. Streetsblog.org, Our Waistlines Expanding in Sync With Our Car-Dependency, 2010, <http://usa.streetsblog.org/2010/08/09/our-waistlines-are-expanding-in-sync-with-our-car-dependence/>
41. Pucher, Dill, and Handy, Infrastructure, Programs, and Policies to Increase Bicycling: An International Review, 2010
42. It is important to note that not all of these recommendations are within areas identified by the Neighborhood Selection Analysis. The reason for that is primarily because that methodology was intended to identify where our target populations live. The community engagement process was able to identify key destinations specific to the needs of the underserved. In some cases these destinations were outside of the communities in which they lived. However, we do acknowledge that available funding is sometimes tied to specific locations and thus in some cases locations not on this list will be added before this list is complete.