Kansas City Bicycle Master Plan

Agenda

1. Project Background & Timeline
2. Engagement & Feedback
3. Target Audience, Plan Vision & Goals
4. Analysis & Updates to the Network
5. Implementation & 5-Year Priority Network
6. Policies, Programs, & Measuring Success
Focused on whether the current Bike KC plan (2002) provided enough guidance to help the City achieve stated goals

- Found plan inadequate & lacking recommended plan elements
- City Manager directed creation of a updated comprehensive plan

Bike KC Performance Audit (2016)

Recommended Bike Plan Elements Contained in Selected City Bike Plans

<table>
<thead>
<tr>
<th>AASHTO Recommended Elements</th>
<th>Bike KC</th>
<th>Denver</th>
<th>Portland</th>
<th>Overland Park</th>
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<tbody>
<tr>
<td>Establish a Public Process to Shape Plan</td>
<td>Partial</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Plan Context and Current Status of Biking</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Vision, Goals, and Objectives</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Benchmarks or Performance Indicators</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Design Guidelines and Policies</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Network of Bicycle Facilities¹</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Implementation Plan</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Education and Encouragement Programs</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Enforcement Programs</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
1. Frame the condition of cycling in Kansas City today
2. Set a clear vision, set of goals & objectives
3. Establish performance indicators to measure achievement
4. Adopt additional designs & guidance for their use
5. Establish bike routes that meet both transportation & recreation needs
6. Conduct an evaluation of Bike KC routes ease of use
7. Recommend specific network of bicycle facility types accommodating average users
8. Update zoning & development code to support cycling goals
9. Identify City agencies responsible for specific projects
10. Provide initial cost estimates, project prioritization & funding
11. Identify potential funding sources
12. Incorporate implementation into resurfacing & CIP
13. Describe educational, encouragement & enforcement initiatives
Kansas City Bicycle Master Plan

Timeline

- **Background & Visioning**
  - Spring: Public Meeting Set 1

- **System Analysis**
  - Late Summer: Public Meeting Set 2

- **Prioritization & Implementation**
  - Spring: Draft & Public Input

- **Plan Adoption**
  - Spring/Summer: Adoption
Kansas City Bicycle Master Plan

Engagement Process

Who was involved?

Key Project Staff:

- City Planning
  - Joe Blankenship
  - Kyle Elliott
  - Ashley Winchell
- Public Works
  - Jeff Martin
- Parks & Recreation
  - Travis Kiefer
  - Richard Allen
- City Manager’s Office
  - Wes Minder

Technical Committee:

- All key project staff listed
- Lisa Treese – Water Services
- Eric Bunch – BPAC, BikeWalkKC
- Thomas Morefield – BikeWalkKC
- Josh Boehm – Jackson County
- Matt Davis – Jackson County
- Matt Killion – MoDOT
- Idris Raoufi – BPAC
- Shawn Strate – KCATA
- Laura Machala – MARC
- Aaron Bartlett – MARC
- Joseph Crayon – KCPD
- Stephanie Chandler - KCPD

Steering Committee:

- Mark McHenry – Parks & Recreation
- Sherri McIntyre – Public Works
- Jeff Williams – City Planning & Development
- Terry Leeds – Water Services
- Diane Bickley – City Planning & Development
- David Valdiviezo – Housing & Neighborhoods Dept.
- Dr. Joey Lightner – Health Dept.
- Ron Achelpohl – MARC
- John Aust - UMKC
- Elizabeth Bejan – revolve KC
- Mike Herron – BPAC
- Suzanne Hogan – 816 Bike Collective
- Martin Rivarola – MARC
- Eric Rogers – BikeWalkKC
- Sam Swearngin – Cycling Kansas City
- Theresa Van Ackeren – Family Bicycles, BPAC
- Gerald Walker – Hill Street Spinners Major Taylor Club
- Jason Withington – North KC Resident Rep
- Dr. Jordan Carlson – Children’s Mercy Hospital
- Jean Paul Chaurand – KCMO Parks Board
- Jason Cooley – KCPD
- Chuck Ferguson – KCATA
- Jesse Lange – Kansas City Public Schools
- Lon Waterman – North Kansas City Public Schools
- Tiffany Moore – KCNAC
- Brian Nowotny – Jackson County Parks + Rec
- Aaron Schmidt – Hunt Midwest Real Estate
- Matt Staub – Parking & Transportation Committee
- Eva Steinman – MoDOT
- Barbara Thomas – 18/Vine District (formerly)
- David Stadler – Mattie Rhodes Center
- David Johnson – KCATA
Kansas City Bicycle Master Plan

Engagement Process

Public Outreach – Spring & Fall

Bike to Boulevard event – Photos Courtesy BikeWalkKC

Bike Month Proclamation with East High Bike Club
Kansas City Bicycle Master Plan

Engagement Process

By the Numbers

- **Regular** Inter-departmental staff meeting (approx. 1/month) & BPAC updates
- 5 Steering Committee, 4 Technical Committee Meetings & 3 joint committee meetings
- Public Outreach
  - Dedicated project website with all materials posted ([kcmo.gov/kcbikeplan](http://kcmo.gov/kcbikeplan))
  - **Survey** – both online & in-person (+1,500)
  - Interactive **mapping** – wikimapping
  - 8 Public meetings to-date (more will be held upon draft plan release)
    - 1 temporary **cycletrack installation**
    - 1 **Facebook Live** event w/ nearly 300 views
  - 4 **student focus groups**
    - Including one “rolling bike meeting” with East HS students
  - Special Events
    - “**Rolling Bike Plan Meeting**” – Bike to Boulevard event
    - Jazz Fest
    - Tour de Bier
    - KC Symphony Celebration at the Station
Feedback Received

What we heard
“In Kansas City, bicycling is safe, convenient, and practical”
Kansas City Bicycle Master Plan

The Users

“Strong & Fearless” – Cyclists who are very comfortable operating in the roadway, similar to operating as a vehicle.

“Enthused & Confident” – Cyclists comfortable riding in some roadways, but prefer bicycle facilities separated from vehicular traffic.

“Interested but Concerned” – Largest group of cyclists & would like to ride more for transportation & recreation, but have safety concerns that prevent them from doing so.

“No way, No How” – People with no interest in riding a bike for transportation.

Four Types of Cyclists By Proportion of Population

- Interested But Concerned - 60%
- No Way No How 33%
- Strong & Fearless <1%
- Enthused & Confident 7%

Source - Portland, OR DOT
Kansas City Bicycle Master Plan

“What type of bicycle rider would you classify yourself as?”

- Strong & Fearless (riding for fun): 206 (13%)
- Enthused & Confident (wanting to improve/ride): 625 (41%)
- Interested but Concerned (interested in biking): 637 (42%)
- Unable to or not interested: 65 (4%)

42%
## Kansas City Bicycle Master Plan

### “What prevents you from bicycling more?”

<table>
<thead>
<tr>
<th>Concern</th>
<th>Not a concern</th>
<th>Low concern</th>
<th>Moderate concern</th>
<th>High concern</th>
<th>N/A</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of dedicated bicycle facilities (such as bike lanes) on city roads</td>
<td>5%</td>
<td>8%</td>
<td>25%</td>
<td>58%</td>
<td>3%</td>
<td>1532</td>
</tr>
<tr>
<td>Aggressive / speeding drivers</td>
<td>3%</td>
<td>7%</td>
<td>25%</td>
<td>51%</td>
<td>15%</td>
<td>1532</td>
</tr>
<tr>
<td>Physical roadway conditions are not safe (potholes, inlet grates, lane</td>
<td>5%</td>
<td>15%</td>
<td>36%</td>
<td>40%</td>
<td>4%</td>
<td>1532</td>
</tr>
<tr>
<td>markings, debris, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle facilities don't connect</td>
<td>10%</td>
<td>15%</td>
<td>33%</td>
<td>35%</td>
<td>8%</td>
<td>1532</td>
</tr>
<tr>
<td>There are not enough bicycle facilities (bike lanes, bike share stations) near transit</td>
<td>14%</td>
<td>18%</td>
<td>27%</td>
<td>34%</td>
<td>7%</td>
<td>1532</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1532</strong></td>
<td><strong>1532</strong></td>
<td><strong>1532</strong></td>
<td><strong>1532</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What Bicycle Facility Would you Feel Most Comfortable In?
Public Feedback:

What type of bicycle facility would you feel most comfortable riding in?

- Protected Bike Lane: 35%
- Bike Boulevard: 24%
- Buffered Bike Lane: 21%
- Shared Use Trail: 11%
- Sharrows Bike Lane: 7%
- No bike lane: 2%
Kansas City Bicycle Master Plan

Key Destinations

- Work
- Schools & Colleges
- Transit Stops
- Restaurants & Retail
- Trails
- Parks
- Grocery Stores

Planning Bike KC!
Help us create a more bike-friendly Kansas City. Click the Routes button below to draw routes to share your thoughts about bicycles along the street system. Click the Points button to place points to indicate important locations.

Welcome

Schools, we need to consider how kids can walk and bike to school again.
Kansas City Bicycle Master Plan

Key Destinations - Analysis

• Land use patterns
• Key destination locations
• Concentrated areas
• Making Connections

KCMO Bicycle Master Plan October 2017

Network Analysis Components
The draft Bike KC network is the result of various types of analysis, some of which are illustrated below*

*Other variables included traffic conditions, a level of traffic stress analysis, topography, crash data, and other public input.
# Kansas City Bicycle Master Plan

## Components to Analyzing the Network

<table>
<thead>
<tr>
<th>Public Input</th>
<th>Level of Traffic Stress &amp; Roadway Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Plan Gaps</td>
<td>Crash Data &amp; Intersections</td>
</tr>
<tr>
<td>Riding Context</td>
<td>Transit, Bike Share &amp; Mobility Hubs</td>
</tr>
<tr>
<td>Topography/Slopes</td>
<td>Census &amp; Life X Data</td>
</tr>
<tr>
<td>Destinations</td>
<td>BWKC Demand Analysis</td>
</tr>
<tr>
<td>Connectivity of Bike Facilities</td>
<td>Directness</td>
</tr>
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</table>
Translating Feedback to Recommendations

Recommended Network

- Plan takes local momentum/desires & national best-practices into account.

- Recommendations incorporate the “6 E’s”
  - Engineering
  - Education
  - Encouragement
  - Enforcement
  - Evaluation
  - Equity

- Plan focuses on making bicycling a viable transportation mode for all users. Specifically, the “interested but concerned” rider and those without access to vehicles are key audiences for the plan.
2018 Bike KC Network

665 total centerline miles

Three categories of bike facilities based on analysis, public feedback, & project goals

**Major Separation – 386 centerline miles**
Physical barrier separating bicyclists from moving vehicles

**Minor Separation – 163 centerline miles**
Conventional or painted buffered bike lanes

**Shared Streets – 116 centerline miles**
Calm local streets or bike boulevard candidates
Translating Feedback to Recommendations

Recommended Network – Major Separation

Below: Parking & planter protected 2-way cycletrack – Memphis, TN

Left: 1-way parking protected bike lane – Memphis, TN

Below: Plastic bollard protected bike lane – St. Louis, MO

Below: Off-street trail/side path – Vivion Rd, Kansas City, MO
Translating Feedback to Recommendations

Recommended Network – Minor Separation

Left: Buffered bike lane – 20th Street
Kansas City, MO

Above: Students of Whittier Elementary on Bike To School Day
May 2015 in Northeast Kansas City

Recommended Network – Shared Streets
are streets that are quiet and safe to ride on without dedicated bike lanes. Traffic calming is ideal on these streets.
Kansas City Bicycle Master Plan

5-Year Priority Network

Focus on 126 miles over next 5 years
Three categories of bike facilities based on analysis, public feedback, & project goals

Phase 1
Projects currently under study of planned projects
• PSP Studies (Ex: Gillham Rd Study)
• Public Works Projects (Ex: Armour Blvd)

Phase 2
Key linkages in system
• Recommends upgrades to existing streets (Ex: Emmanuel Cleaver II Blvd)
• Fill key gaps between existing network & Phase 1 projects (Ex Holmes Rd through Hospital Hill)
• Study/implement connection to Stadiums/Rock Island Corridor via Linwood

Phase 3 & Opportunities
• Coordinate resurfacing program
• Look for “low-hanging fruit” – streets ideal for implementation (Meyer, West Pennway, etc.)
Network Implementation

Key Notes

• Critical to success is to **re-evaluate Bike KC every 5 years** to ensure KC stays up to date on evolving best-practices, re-evaluate priorities & goals, & create new 5-year priority network.

• Recommendations in the plan are **based on high-level analysis** and public input – each project will have to be evaluated on an individual basis and not every recommended facility type will be able to be built.

• Any 2018 Bike KC recommended facility type on a historic boulevard or parkway must be approved by the Parks Dept. or Parks Board (as appropriate) to ensure **compliance with historic designation**.

• Many 2018 Bike KC routes **overlap with the Trails KC Plan**. These corridors are important for both plans and their primary goals (transportation & recreation) and are compatible. Shared Use Trails adjacent to the roadway are preferred on these routes, with minor separation in the roadway curb.
# Kansas City Bicycle Master Plan

## Network Implementation

### Cost

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Cost per mile average Major Separated Retrofit</td>
<td>$749,456</td>
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<tr>
<td>Cost per mile average Major Separated New Construction</td>
<td>$1,178,000</td>
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<tr>
<td>Cost per mile average Minor Separated Retrofit</td>
<td>$115,915</td>
</tr>
<tr>
<td>Cost per mile average Minor Separated New Construction</td>
<td>$568,750</td>
</tr>
<tr>
<td>Cost per mile average Shared Use Street</td>
<td>$156,980</td>
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</tbody>
</table>

Cost per mile based on Average of Armour protected bike lane & line creek trail for major separated; Average of Grand buffered plus N. Davidson Rd for Minor Separation; Average based on KCMO research for sign installation only & national bike blvd research for Shared Streets.

Cost per mile based on 8' of construction materials, including rock, asphalt, bike lane materials for 8' of added roadway on 22nd/23rd street construction project. The figure was then multiplied by a factor of 2 for Major Separation (for 8' minimum on each side based on NACTO recommended widths for bike lane and buffer space). For concrete separation elements on new construction (narrow median (double sided curd) $50/foot was assumed, extrapolated to both sides of the road totaling $100/foot, multiplied by 5,280 (one mile) for a added cost of $528,000. For Minor Separation a 5' bike lane and 2' buffer was assumed, totaling 14' of estimated cost.
## Kansas City Bicycle Master Plan

### Network Implementation

<table>
<thead>
<tr>
<th>Cost</th>
<th>Total Network</th>
<th>Total Needing to be Built</th>
<th>Cost for Network Needing to be Built</th>
<th>5 Year Priority Network</th>
<th>Cost for 5-Year Priority Network</th>
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<tbody>
<tr>
<td>Major Retrofit Cost - Total System</td>
<td>254</td>
<td>238</td>
<td>$177,995,681</td>
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<td>132</td>
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<tr>
<td>Major Separation Total - Total System</td>
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<td>370</td>
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<tr>
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<tr>
<td>Shared Use Total (Total System - doesn't take new construction into account)</td>
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<td>69</td>
<td>$10,831,586</td>
<td>11</td>
<td>$1,726,775</td>
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<tr>
<td>Grand Total System Cost (Including MoDOT Roads)</td>
<td>665</td>
<td>589</td>
<td>$385,257,888</td>
<td>126</td>
<td>$82,068,868</td>
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<table>
<thead>
<tr>
<th>Cost</th>
<th>Total Network</th>
<th>Total Needing to be Built</th>
<th>Cost for Network Needing to be Built</th>
<th>5 Year Priority Network</th>
<th>Cost for 5-Year Priority Network</th>
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<tr>
<td>Major Retrofit - City Only</td>
<td>218</td>
<td>202</td>
<td>$151,390,011</td>
<td>84</td>
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<td>Major New Construction - City Only</td>
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<td>126</td>
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<td>107</td>
<td>94</td>
<td>$10,838,006</td>
<td>13</td>
<td>$1,506,889</td>
</tr>
<tr>
<td>Minor New Construction Total - City Only</td>
<td>52</td>
<td>52</td>
<td>$29,575,000</td>
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<tr>
<td>Minor Separation - City Only</td>
<td>159</td>
<td>146</td>
<td>$40,413,006</td>
<td>14</td>
<td>$2,075,639</td>
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<tr>
<td>Shared Use Total - City Only</td>
<td>116</td>
<td>69</td>
<td>$10,831,586</td>
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<td>$1,726,775</td>
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<tr>
<td>Grand Total System City Roadways Only</td>
<td>619</td>
<td>543</td>
<td>$351,062,602</td>
<td>115</td>
<td>$73,824,675</td>
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</table>

*New construction consist of partial and nonexisting roadways
Network Implementation

Roles, Responsibilities, & Oversight

• Recommendations:
  • Formal bike program staffing (or assignment of duties)
  • Official inter-departmental collaboration through MOU
  • Annual project prioritization prior to submittal of annual budget

City Plan Commission
BPAC & Parks Board
Bike Program Coords – Infrastructure (CMO); Planning & Programs (CPD)
Bike Program Core Work Team (Coordinators, PW, P&R, CPD)
Project level managers
Network Implementation

**Funding Strategies to pursue (for capital projects, educational & supportive programming, staffing, etc.)**

- Allocate annual City appropriation for development of the Bike KC network and supportive Bike KC programs (General Funds)
- Citywide 1% sales tax - 20 year dedication (vote in April)
  - In-District PIAC requests for project studies & design
  - Of the total “65% for capital improvements with at least 25% for street resurfacing, repair, and the construction of complete street facilities” – discussion this morning at Finance & Governance Committee
  - Complete Street Ordinance passed 12/14/2017 (13-0)
- Existing Federal Funding Resources (such as STP, CMAQ)
- Local or National Foundations (such as Health Care Foundation of Greater Kansas City, Blue Cross Blue Shield Foundation of Missouri)
- Pursue new funding sources including private/in-kind partnerships/sponsorships and in-lieu fee programs
- Development Funds like Tax Increment Financing (TIF) Plan areas, Transportation Development Districts (TDD), & Community Improvement Districts (CID)
- Review of City’s Development Fees Comprehensively (Nexus, Parks, Arterial, Water)
Policies & End-of Trip Facilities

• **Examine the following policies to help KCMO encourage & support cycling:**
  - Form an annual bike parking program to fulfill citizen/business bicycle rack requests on annual basis
  - Creation of in-lieu of fee allowing developments to pay a fee for each bike rack not installed
  - Define cost & alternate route plans for bicycle lane closures for construction and special events
  - Parking reductions for developments that are along a constructed bicycle facility
  - Require office developments of X size to build locker room facilities
  - Develop and implement comprehensive wayfinding signage
Kansas City Bicycle Master Plan

Supportive Programming – Encouragement & Education

• Creation & Distribution of maps, information & trip planning materials (online, mobile, & physical)
• Partner with local organizations on to enhance, support and/or create bicycle usage education & supportive programs including, but not limited to:
  o Large equipment operator training: KCATA & KCMO
  o Safe Routes to School programs
  o Smart Trips Residential & Business programs
  o Support Kansas City Bcycle expansion & operations
  o Adult & Children specific Bicycle Training programs
  o Bicycle ridership incentive programs (businesses, institutions, etc.)
  o Promote the League of American Bicyclists Bicycle Friendly Business program
Supportive Programming –
Encouragement & Education

- Special Events & Campaigns:
  - ciKClovia street closure events for bike ped use
  - Facility educational campaigns & information (media & materials)
  - Safety campaigns
  - Attendance at industry conferences & other educational opportunities
  - Bike Month events & Bicycle Commute Challenge
  - Pilot “bicycle ambassador” program
Supportive Programming – Enforcement

- Train KCPD law enforcement in bicyclists and motorist behavior laws and issues
- Work with KCPD & Missouri Highway Patrol to enforce proper motorist and bicyclist behavior & reduce cyclists vs motorist collision
  - Use of citations and warnings
  - Increase enforcement of parked vehicles in bicycle infrastructure
  - Increase enforcement in high collision areas and where new infrastructure has been installed
  - Create mandatory cyclists awareness educational course for motorists that receive citations involving cyclists
Kansas City Bicycle Master Plan

Measuring Progress

Metrics & Performance Goals

• League of American Cyclists Bicycle Friendly Communities Status
  o Achieve Silver Status by 2020
  o Work towards Platinum Status
  o Commuter Mode Share (ACS)
    o Current ACS = 0.7%
    o 2008 Climate Protection Plan = 5.4%
    o Bike KC goal → 3.5% for Silver; 5.5% for gold (ideal averages)

• Rate of bicycle-motor vehicle crashes compared to number of bicycle trips

• System Completion (Annual Centerline miles)

• Data collection including
  o Pre & post project user counts/volume
  o Growth in Kansas City Bcycle system stations & ridership
  o KCATA bike rack usage

• Bicycle infrastructure spending

• Annual Citizens Satisfaction Survey

• Annual Complete Street Progress Report & Project Priorities to BPAC
Kansas City Bicycle Master Plan

Thank you!
Kansas City Bicycle Master Plan

www.kcmo.gov/kcbikeplan

Primary Contact:
Joe Blankenship
Joseph.Blankenship@kcmo.org  816-513-2878

Secondary Contact:
Kyle Elliott
Kyle.Elliott@kcmo.org

Heartland Childhood Obesity Summit
Wednesday, June 27, 2018