

Bike Friendly Kalamazoo's Commuter Bike Route Development Process

Draft Version: December 6, 2015
Submitted to the Kalamazoo Area Transportation Study
Paul Selden

Introduction

The Kalamazoo Area Transportation Study (KATS) released its draft Non-Motorized Element component of its 2045 Metropolitan Transportation Plan on October 29, 2015.

This document outlines the systematic, community-oriented process by which the Proposed Commuter Bike Routes within the Non-Motorized Element (see Map 7, page 33) were developed.

This is an outline; there may be gaps or questions about the process that occur to the reader. Further details are available upon request.

The community owes a great deal of thanks to the individuals who contributed to this effort, whose work is gratefully acknowledged (whether or not their names are specifically mentioned in the context of this document as released by KATS).

Process Overview

The commuter bike routes were developed in an effort beginning in 2012. The process followed a systematic, iterative approach balancing a combination of elements, including:

- Google bike route mapping
- input from Kalamazoo Area Transportation Study (KATS) policy and technical committee members, KATS staff, and planners from many of the jurisdictions involved
- recognized state and national experts
- local bicyclist and citizen knowledge
- community stakeholders
- technical standards and guidelines
- printed maps
- local non-motorized plans
- other documented resources.

Published resources consulted are listed on Bike Friendly Kalamazoo's "Resources" tab (such as the technical standards).

At each step, from the very first use of Google Maps' bike route suggestions to the release to KATS of the refined bike routes in so-called .kml file format, Bike Friendly Kalamazoo (BFK) participants/volunteers took into account the factors alluded to above in forming their judgements as they became known and available.

A list of names of those who participated in the most relevant bike route related meetings convened by Bike Friendly Kalamazoo between 2012-2015 are presented in Exhibit A. The section entitled "Special Acknowledgements" lists names of additional contributors.

In total, some 400 versions/alternative bike routes were generated, reviewed and refined into a set of about 90 proposed commuter bike routes submitted to KATS.

Key Steps in the Process

Key steps in the route design process are summarized in this section. The specific individual steps and meetings held to conduct this process have been documented in more detail than practical to present here in their entirety, in the form of minutes. Two additional documents are reprinted here as Exhibits B and C (as published on [www.bikefriendlykalamazoo](http://www.bikefriendlykalamazoo.org)) to help the reader understand the systematic nature of the process.

1. In February 2012, members of the Kalamazoo Bicycle Club (KBC), friends of the Open Roads Project, TriKats, and patrons of local bicycle shops were asked to submit descriptions of routes they used for bicycle commuting to KBC's Director of Road Safety; these routes were relayed to Steve Stepek of KATS. Routes were submitted by Daryl Hutson, Marc A. Irwin, Paul Selden, Chad Goodwill, Dale Krueger, Joan Orman, Neil Juhl, Paul Wells, Steve Johnson, Jeff Pregoner, Christopher Gottwald, Karl Freye, Jon Ballema, John Byrnes, and Chris Dilley. This effort provided experience and data from which emerged ideas for further refining the route development process. During this period, Tom Swiatt provided key guidance by telephone.

2. In November 2012, participants in a public meeting which kicked off the bike route planning effort facilitated by BFK developed a set of written guidelines for the bike route planning volunteers (see Exhibit B). Chris Barnes, Joanna Johnson, Fred Nagler, Steve Stepek and Paul Selden participated in the development/review of these guidelines.

3. Participants in Bike Friendly Kalamazoo volunteered to map commuter, recreational, fitness and shopping oriented bike routes, following the guidelines mentioned in Step 2. These routes are posted under two of the links on BFK's "Where to Ride" tab at <http://bikefriendlykalamazoo.org/trails-routes/>.

Following a round of discuss and review, feedback from a number of transportation planners and engineers made it clear that focusing on commuter related routes was most appropriate from the point of view of being able to approve posting of bike route signs, linking destinations that were relatively permanent features of the community within the KATS metropolitan planning organization (MPO). The rationale is easy to understand. The changeable and somewhat idiosyncratic nature of recreational and fitness routes makes them potentially unmanageably large in number and incompatible with the relatively permanent nature of signing. By the same token, the sheer number of shopping centers and neighborhoods within the KATS MPO, and the immense number of permutations/combinations of potential bike routes required to link them all, ruled out a focus on a shopping oriented bike route development, at least at the level of the KAT MPO. Further efforts were focused on commuter bike route mapping.

4. Since to our knowledge the attempt to establish such a comprehensive commuter bike route network was the first of its type within the KATS MPO, the effort limited itself to connecting permanent jurisdictions with easy to identify to/from "centers," or points of connection, where such those "nodes" were spaced far enough apart to warrant independent to/from routes.

The resultant routes are comprehensive, but can be added to or modified as time goes on, as needed (for instance, if the KATS MPO boundaries are changed). The resulting routes have major additional benefits. They play a role as trunk lines which can be linked to via spurs as needed. Since the destinations chosen offer a tremendous concentration of places to shop as well as to work, the commuter routes could easily play a major role as shopping routes. The benefits of bicycling to commute and shop in turn offer many collateral benefits too numerous to list here (e.g., related to personal fitness, energy independence and savings, reduction of pollution,

personal enjoyment/recreation, etc.). In other words, the commuter bike routes offer great flexibility and will undoubtedly serve the community in many ways beyond their nominal designation as “commuter bike routes.”

5. Volunteers used Google Maps to automatically generate bike route alternatives among all combinations of the nodes. Google typically suggested from one to three route alternatives. These were converted into more stable maps using the public, free internet application called Ride With GPS (see www.ridewithgps.com) to facilitate open review, comment and adjustment.

All of the initial automatically generated routes were reviewed and refined one or more times by one or more individuals with credible local knowledge of conditions and preferences. Many of these participants attended MDOT’s “Training Wheels” seminar on how to develop bicycling facilities. During the review process it became clear that many of the Google-generated bike routes used seasonal trails with restricted hours of operation and/or were not open year round, footpaths, non-public roads, and gravel/dirt roads. Volunteers adjusted such routes to make use of on-road facilities.

As a reminder, a link to the close to 400 draft commuter route alternatives can be found on Bike Friendly Kalamazoo’s “Where to Ride” tab, together with comments on how to interpret the naming/coding conventions used in the route titles.

6. During the final rounds of review the finer points of routing were conducted in close consultation with the individuals most familiar with the routes in question. More one on one discussion took place with representatives of jurisdictions, who were consulted at various points in the process via phone and email; fewer and few large meetings were necessary.

The main questions answered during these dialogs concerned where to locate their jurisdiction’s to/from nodes (for purposes of connecting with neighboring jurisdictions), and, where to locate the most preferred inter-jurisdictional border crossings (to facilitate connectivity with their neighbors). Among others, the primary individuals consulted during such off-line dialogs included: Chris Barnes, Libby Heiny-Cogswell, Linda Kerr, Rebekah Kik, Marc Elliott, Karen High, Lawrence Hummel, Greg Milliken, Ann Nieuwenhuis, Ron Reid, Greg Rosine, Ken Schippers and Jeff Sorensen. Communication about these preferences was also extended to Russell Wickland, (Planning Consultant, The Preim Group, working on behalf of Texas Township). Darrell Harden also provided input regarding Michigan Department of Transportation plans.

7. To simplify the network, BFK eliminated routes that passed relatively close to an intervening destination. For example, since a bike route from Kalamazoo to Schoolcraft would pass through the preferred nodes within the intervening jurisdiction of the City of Portage, the routes Kalamazoo-Portage, and Portage-Schoolcraft were submitted to KATS (instead those individual routes, together with a Kalamazoo-Schoolcraft route). Only a single “tier one” route between such destinations was mapped in the draft 2045 Plan. Interested parties may review alternative routes via the links previously listed.

Remaining sections in this document cover some of the overarching considerations that were applied throughout the process.

Comment on Factors Considered

Bike routes chosen for submission to KATS represent a balanced judgement, balancing a large number of considerations at various stages of the process. These considerations included, but were not limited to those found in reference works such as:

[AASHTO Guide for the Development of Bicycle Facilities, 4th Ed.](#)
[Best Design Practices for Walking and Bicycling in Michigan](#)
[Road Commission of Kalamazoo County Non-Motorized Facilities Policy](#)
[Michigan Design Manual \(for Road Design\)](#)
[Michigan Manual of Uniform Traffic Control Devices](#)
[Traffic Control Devices For Bicycle Facilities \(MMUTDC Part 9\)](#)
[Southwest Michigan Planning Commission \(various plans and guides\).](#)

The following list offers a more concrete idea as to the considerations involved. These factors combined with an overall engineering concern for safety. Considerations included, but were not limited to factors such as:

- Location and number of available roads
- Posted speed limits
- Traffic density
- Route length
- Location of currently posted bike lanes and bike routes
- Cumulative changes in elevation (e.g., number and gradient of hills and valleys)
- Shoulder type (presence/absence, width)
- Sight distances (number of and type of turns/curves)
- Number of turns required en route (e.g., complexity of wayfinding, rider confusion)
- Road and shoulder (e.g., so-called PASER rating, tendency of shoulders to accumulate debris)
- Illumination (e.g., presence of deep shadows, road lights)
- Road composition (dirt/gravel vs. paved)
- Local and Act 51 agency non-motorized plans
- Opinions and preference of local planners/engineers
- Bicyclist preference (experienced commuters plus on-line maps of bicyclist use on Strava.com)
- Preference of computerized mapping engines/apps (e.g., Google, Garmin, Ride With GPS)
- Location and type of bridges (which have the effect of funneling and limiting routing options)
- Location of natural barriers (e.g, lakes, marshes, rivers, streams).

In practice, this meant for example, that sometimes the most direct or shortest route was not chosen if an alternative route used roads with lower traffic densities or fewer hills, wider shoulders, etc. Sometimes the route with a slightly lower traffic density was not as highly ranked if it took the rider on a gravel/dirt road, through dark stretches of road with narrow or no shoulders, etc. All in all however, most often the “tier one” route was a clear “winner.”

Special Acknowledgements

The following individuals (whose names do not elsewhere appear in this document) were consulted for advice at various times throughout this process. Our community owes a debt of special gratitude to a number of widely recognized experts in the field of bicycle and pedestrian transportation network design, related policy, and the organizations that support their work.

Josh DeBruyn, AICP
Bicycle and Pedestrian Coordinator
Bureau of Transportation Planning
Michigan Department of Transportation

John LaPlante, PE, PTOE
Vice President/Director of Traffic Engineering
T.Y. Lin International

John Lindenmayer
Executive Director
League of Michigan Bicyclists

A number of local officials provided guidance, though they were not able to attend the public meetings and are well deserving of acknowledgement for their input. During the initial stages of pre-planning for the route development effort, Tom Swiatt, Supervisor of Prairie Ronde Township, Chair of the KATS Policy Committee (former) provided valuable guidance. Later in the effort, David Anderson, (Chair of the KATS Policy Committee at that time), and Larry Nielsen (Village Manager, Paw Paw) offered additional valuable insights.

Marcy Colclough, Suzann Flowers and John Egelhaaf of the Southwest Michigan Planning Council all provided very useful input, early in the process.

List of to/from Nodes

In alphabetical order, the mapped commuter bike routes connect the following destinations within the KATS metropolitan planning organization (MPO).

Alamo (Township)
Almena (Township; routes incorporate eastern border)
Antwerp (Township; see Villages of Lawton and Mattawan)
Augusta (Village)
Brady (Township; see Vicksburg)
Climax (Village)
Comstock (Charter Township)
Cooper (Charter Township)
Fulton (Community; mapped coincident with Wakeshma Township)
Galesburg (City)
Kalamazoo (City; mapped coincident with Kalamazoo Township)
Kalamazoo (Charter Township, see City of Kalamazoo)
Kalamazoo Valley Community College (Kalamazoo and Texas Township Campuses)
Lawton (Village; mapped coincident with Antwerp Township)
Mattawan (Village; mapped coincident with Antwerp Township)
Oshtemo (Charter Township)
Parchment (City)

Paw Paw (Village; mapped coincident with Paw Paw Township)
Portage (City)
Richland (Village)
Schoolcraft (Township; mapped coincident with Village of Schoolcraft)
Schoolcraft (Village)
Scotts (Community)
Texas (Charter Township)
Vicksburg (Village)
Wakeshma (Township, see Fulton)
Waverly (Township; not included in 10-29-15 draft of Non-Motorized Element)
Western Michigan University (Main and Engineering Campuses).

Where noted as “coincident with,” the to/from node(s) used were within the former jurisdiction, due to the centrality of the population and business center(s) within that part of the KATS MPO. Jurisdictional status was derived from Wikipedia.

If KATS intends to make all or a portion of this document available to the public, please email suggested changes/errors to Paul Selden in time for correction prior to release as “final.” Every attempt will be made to make those changes in a timely manner.

Exhibit A

**List of Bicycle Route Planning Meetings
Conducted by Bike Friendly Kalamazoo**

Compiled by Paul Selden

Submitted for use by KATS September 25, 2015

Introduction

The lists below are excerpted from minutes of meetings hosted by Bike Friendly Kalamazoo (BFK) having as a major purpose to plan (e.g., to review guidelines) and map of bicycle routes in the Kalamazoo Area Transportation Study Metropolitan Planning Organization. The lists are based on a request from Steve Stepek of KATS in preparation for KATS' 2045 Transportation Plan.

Meetings in 2014 and 2015 that mainly consisted of presenting draft versions of bike route plans to the public (versus actively setting up route planning guidelines/considerations and planning the routes) are not included. Participants in email communications and off-line phone meetings for which no minutes were distributed are not listed.

On behalf of the greater community, I thank all participants for their significant contributions.

BFK Meeting dates and Attendees:

April 12, 2012

Chris Barnes, Director, Transportation and Utilities, City of Portage
Joanna Johnson, Managing Director, Kalamazoo County Road Commission
Kyle Lewis, KRVT Program Coordinator, Kalamazoo County
Paul Selden, Director of Road Safety, Kalamazoo Bicycle Club, Member, TriKats
Steve Stepek, Senior Transportation Planner, Kalamazoo Area Transportation Study

October 25, 2012

Gregg Andres, Systems Integration Engineer, Eaton Corporation
Chris Barnes, Director, Transportation and Utilities, City of Portage
Michelle Fakler, Sales Manager, Discover Kalamazoo
Rusty Fry, Planning Commission, Ross Township
Vanessa Hardy, Comstock Township Parks Director
Rebecca Harvey, Planning Consultant, Ross Township
Libby Heiny-Cogswell, Supervisor, Oshtemo Charter Township
Karen High, Parks Administrator, Oshtemo Charter Township
Jim Hoekstra, Traffic Engineer, KCRC/City of Kalamazoo
Tom J. Hohm, Chief Engineer, KCRC
Matt Hollander, Coordinator of Sustainability Projects, WMU
Frances Jewell, Director, Parks and Recreation Dept., City of Kalamazoo
Joanna Johnson, Managing Director, Kalamazoo County Road Commission
Jim Lauderdale, Planning Commission, Ross Township
Steve Makuch, Office of Sustainability, WMU
Tom McCoy, Assistant Parks Superintendent, City of Portage
Fred Nagler, City of Kalamazoo, Assistant City Engineer
David Rachowicz, Kalamazoo County Parks Department, Director
Jason Roon, Cabbage Bros. Bicycles
Paul Selden, Director of Road Safety, Kalamazoo Bicycle Club; Member, TriKats
Timothy Stewart, Principal, Hurley & Stewart

Bob Strader, Ride Leader, Pedalers Bicycle Group, Portage Senior Center
Thomas L. Swiat, Jr., Supervisor, Prairie Ronde Township
Chris Tracy, Honigman, et al., Co-Chair of KRVT Campaign Cabinet
Sam Urban, Membership Representative, Kalamazoo Regional Chamber of Commerce
Julie VanderWieme, Superintendent, Texas Township
Doug VanDyk, Manager, Global IT Training & Development, Stryker Corporation
David Warwick, Vice President, EnviroLogic, Lead Team Member, Kalamazoo Bike Week 2013
Paul Wells, Breakaway Bicycles and Fitness
Patrick White, Supervisor, Pavilion Township

January 17, 2013

Chris Barnes, Director, Transportation and Utilities, City of Portage
Kate Binder, Graduate Assistant, WMU Office for Sustainability
Kyle Doster, Officer, Portage Department of Public Safety
Marsha Drouin, Treasurer, Richland Township
Pamela Brown Goodacre, Trustee, Kalamazoo Township
Karen High, Parks Administrator, Oshtemo Charter Township
Jim Hoekstra, Traffic Engineer, KCRC/City of Kalamazoo
Tom J. Hohm, Chief Engineer, KCRC
Marc Irwin, Public Relations Chair, Kalamazoo Bicycle Club
Joanna I. Johnson, Managing Director, Kalamazoo County Road Commission
David Jones, District Representative, League of Michigan Bicyclists
Sean Kennedy, WMU Office for Sustainability
Kevin Martini, Office for Sustainability, WMU
Gary Miller, Chairperson, South County Intermunicipality Committee
Renee Mitchell, Education Chair, Kalamazoo Bicycle Club
Fred Nagler, City of Kalamazoo, Assistant City Engineer
Brian Petersen, Board Member, Open Roads Bike Project
Paul Selden, Kalamazoo Bicycle Club, TriKats
Alan Smaka, PE, Wightman & Associates, Inc.
Larry Stehouwer, Planning Commission, Cooper Township
Steve Stepek, Senior Transportation Planner, Kalamazoo Area Transportation Study
Doug VanDyk, Manager, Global IT Training & Development, Stryker Corporation
Paul G. Wells, Owner, Breakaway Bicycles and Fitness
Patrick White, Supervisor, Pavilion Township

October 3, 2013

Chris Barnes, Director, Transportation and Utilities, City of Portage
Laura Bell, Vice President, Bell's Brewery, Inc.
Jamie Clark, President, Central Manufacturing Services, Inc.
Jason Cole, Transportation Engineer, MDOT
Kyle Doster, Officer, Portage Department of Public Safety
Marsha C Drouin, Treasurer, Richland Township
Sean Fletcher, Director, Parks and Recreation Dept., City of Kalamazoo
Karl Freye, Assistant Director, Kalamazoo Bicycle Film Festival
Paul Guthrie, Laboratory Manager, Bronson Methodist Hospital
Darrell Harden, MDOT, Transportation Planner
Jim Hoekstra, Traffic Engineer, KCRC
Tom Hohm, Chief Engineer, KCRC
Marc Irwin, Public Relations Chair, Kalamazoo Bicycle Club
Lotta Jarnefelt, Director, Dept. of Planning and Comm. Dev., Kalamazoo Co.
David Jones, District Representative, League of Michigan Bicyclists

James Kirklin, Mattawan Parks & Recreation
Shawn Kloha, IT Project Manager, Stryker Corp.
Tim Krone, Owner, Pedal Bicycle
Kyle Lewis, KRVTV Program Coordinator, Kalamazoo County
Fred Nagler, Assistant City Engineer, City of Kalamazoo
Carl Newton, Mayor, City of Galesburg
Margaret O'Brien, State Representative, District 61
Ken Quayle, Grocery Manager, People's Food Coop.
Louie Ramos, Resident Engineer, MDOT
Ron Reid, Supervisor, Kalamazoo Township
Bill Rose, President & CEO, Kalamazoo Nature Center
Paul Selden, Director of Road Safety, Kalamazoo Bicycle Club
Jonathan R. Start, Executive Director, Kalamazoo Area Transportation Study
Tim Stewart, Principal, Hurley & Stewart
Bob Strader, Ride Leader, Portage Pedalers, Portage Senior Center
Edie Trent, Legislative Aide to State Representative Sean A. McCann
Doug VanDyk, Manager, Global IT Training & Development, Stryker Corporation
David Warwick, Chair, Kalamazoo Bike Week 2014
Paul Wells, Owner, Breakaway Bicycles & Fitness

December 5, 2013

Lee Adams, Resource Coordinator, Kalamazoo County Department of Planning and Community
Development; Administrator, Southcentral Michigan Planning Council
Kyle Doster, Officer, Portage Department of Public Safety
Paul Guthrie, Laboratory Manager, Bronson Methodist Hospital
Jeff Hamilton, Asst. Principal, Portage Public Schools
Michelle Karpinski, VP of Development, Kalamazoo Nature Center
Shawn Kloha, IT Project Manager, Stryker Corp.
Tim Krone, Owner, Pedal Bicycle
Jon Scott, Trustee, Ross Township; President, Gull Lake View Golf Club
Paul Selden, Director of Road Safety, Kalamazoo Bicycle Club; Member, TriKats
Richard Skalski, Senior Construction Engineer (former), City of Kalamazoo
Cara Smith, Bike Director, TriKats
Jodi Stefforia, Associate Planner, Kalamazoo Area Transportation Study
Doug VanDyk, Manager, Global IT Training & Development, Stryker Corporation

March 27, 2014

Osama Abudayyeh, Center Advisory Council, WMU Transportation Research Center
Chris Barnes, Director, Transportation and Utilities, City of Portage
John Byrnes, Traffic Services Director, KCRC (ret)
Dan Dombos, Senior Project Engineer, Abonmarche
Paul Guthrie, Laboratory Manager, Bronson Methodist Hospital
Jim Hoekstra, Traffic Engineer, KCRC/City of Kalamazoo
Jeanette Holm, Member, Kalamazoo Bicycle Club
Marc Irwin, Public Relations Chair, Kalamazoo Bicycle Club
Matt Johnson, City Engineer, City of Kalamazoo
Michelle Karpinski, Executive Director, Pretty Lake Camp
Shawn Kloha, IT Project Manager, Stryker Corp.
Tim Krone, Pedal Bicycle
Valerian Kwizile, Associate Director, WMU Transportation Research Center
Jun Oh, Director, WMU Transportation Research Center
Kathy J. Schultz, Associate Planner, Kalamazoo Area Transportation Study

Paul Selden, Director of Road Safety, Kalamazoo Bicycle Club; Member, TriKats
Doug VanDyk, Manager, Global IT Training & Development, Stryker Corporation
Lewis Whalen, Program Mgr., Disability Network SW Michigan
Geoff Wilson, Project Engineer, Kalamazoo County Road Commission

June 25, 2014*

Lee Adams, Resource Coordinator, Kalamazoo Co. Dept. of Planning and Community
Development; Administrator, Southcentral MI Planning Council

Greg Milliken, Planning Director, Oshtemo Township; Zoning Administrator and Planner,
Kalamazoo Township

Paul Selden, Director of Road Safety, KBC; Member, TriKats

Jodi Stefforia, Planner, Kalamazoo Area Transportation Study

Steve Stepek, Senior Planner, Kalamazoo Area Transportation Study

Jack Urban, Commissioner, City of Kalamazoo

Lewis Whalen, Program Mgr., Disability Network SW Michigan

*Note: Route planning work group within larger meeting.

Valerie Litznerski, a member of the Kalamazoo Bicycle Club whose name is not listed above since she was unable to attend any of the formally scheduled meetings, contributed valuable routing feedback by email.

It should be noted that KATS policy and technical committee members representing many jurisdictions have also been involved in this route planning and mapping process, in informal phone and email communications. Their names can be made available upon further research.

Please contact Paul Selden for more information.

Exhibit B

Preliminary Guidelines for BFK's Route Planning Volunteers Release Version November 11, 2012

To enable our plans to mesh most smoothly with longer term efforts and plans that might already be underway in the community, we suggest you keep in mind the following guidelines to the extent possible. Exceptions might be inevitable; use your best judgment, and try to provide enough commentary on those exceptions to enable others to understand the rationale.

To save your own time, assemble as many maps and plans as you can that may already support your efforts (such as the Southwest Michigan Road and Trail Bicycle Guide), prior to beginning. Contact the jurisdictions whose routes you are contemplating to receive an update on plans they may already have underway, if you do not have these already.

Routes can fall entirely within specific townships, villages, and cities. This offers each jurisdiction a local attraction, which in turn helps link their local attractions.

Routes that link enduring points of interest within or across jurisdictions have the best chance of receiving eventual signage within the right-of-ways and other infrastructure support.

Routes can be officially signed on the authority of a local jurisdiction, if signs are not posted within the right-of-way (examples might include an informational kiosk on private property or in a local park).

Consider that routes of various lengths will appeal to different types and numbers of riders. Shorter lengths might appeal to families with children on a short outing that does not require much preparation or fitness. Shorter loops (such as a north loop, south loop) can be combined to form longer trails that might appeal to more adult or more athletic riders.

Consider giving routes a name that adds to their appeal and the ability to describe and to promote their use.

To help decide where specific routes might be planned, consider the major features and destinations within the jurisdiction: major population centers, recreational destinations and scenic points, shopping centers, and geographic elements that lend themselves to various types of fitness related training (e.g., hills and flats).

Give priority to using roads with low traffic volume.

Give priority to using roads with shoulders, especially four foot shoulders.

Give extra consideration to routes using bridges that offer shoulders, sidewalks, and/or lower traffic volume.

Before sending your route out of your own subcommittee for review by others, ride the route yourself to ensure its suitability, if you have not already done so.

All routes must be considered preliminary until vetted by a responsible body. In the case routes being considered for posting on our www.bikefriendlykalamazoo.org web site, we will set up a process that includes review by our route planning committee. To begin with, our own routes must rely on existing infrastructure, and not rely on infrastructure that does not yet exist.

Reviewers of this document include:

Paul Selden
10-26-2012

Steve Stepek, AICP
Senior Transportation Planner
Kalamazoo Area Transportation Study
11-8-2012

Document was emailed for review to:

Christopher Barnes
Joanna Johnson

Fred Nagler

No negative comments received from them as of 11-11-2012

Exhibit C

BFK Bike Route Notes August 2, 2015 Paul Selden

Please read these notes below carefully. Doing so will save time and confusion down the road.

1. Routes were developed using a systematic route mapping approach (details available on request), using a combination of Google bike route mapping, input from Kalamazoo Area Transportation Study (KATS) policy and technical committee members, KATS staff, local bicyclist knowledge and reference to existing non-motorized plans in an efforts that began in 2012. They are route suggestions for general informational and educational purposes by the public. The user assumes all responsibility for their use.
2. The routes are subject to further revision without notice; the files are in draft form unless otherwise specifically noted. Bike Friendly Kalamazoo participants are aiming to complete work on the commuter bike routes to assist KATS in preparing the non-motorized portion of its 2045 Transportation Plan. Links to the most recent versions for routes are maintained on the publicly available web site www.bikefriendlykalamazoo.org. Files downloaded or copied from this site may not be up to date per changes made by other agencies. Routes on the site are not systematically updated and are not represented as being the “best” current route.
3. At this time, all of the automatically generated routes have been reviewed and refined one or more times by one or more individuals with credible local knowledge of conditions and preferences. Precedence/preference among routes is indicated per Notes 4 below.
4. File names designate to/from nodes of the jurisdictions involved, as well as a note about the type of route involved, such as:
 - a) "Commuter" = first bike route suggested by the Google bike mapping tool (e.g., Augusta_Kalamazoo_Commuter). This is often the shortest route.
 - b) "2" or "3" immediately following the node name denotes the second and third, routes suggested by Google
 - c) "v" = subsequent/preferred version; these routes supercede any route whose name is identical except for the "v" (e.g., WMU_Main-Kalamazoo Commuterv2 is preferred over WMU Main-Kalamazoo Commuter)
 - d) Where there are "v" routes with identical names, the version number that is largest typically supercedes the others (e.g., a v3 is preferred over a v2). If there is no "v," only a number, after the node name, that means something entirely different - see 4b above, for the meaning.
 - e) "(t)" routes use at least some stretches of multi-use path / off-road bike trail. These are not ordinarily preferred for purposes of bicycle commuting for many reasons. BFK's primary recent effort has been to suggest on-road bike routes.
 - f) "(X)" routes should not be used since they make use of a route that consists of one or more routes that already exist. For example, the most direct route from Augusta to Kalamazoo consists of multiple routes that use Galesburg and Comstock.
5. To simplify our task, BFK chose to not map routes involving a intervening jurisdictions. For example, since a bike route from Kalamazoo to Schoolcraft would probably involve the intervening jurisdiction of Portage, the routes Kalamazoo-Portage, and Portage-Schoolcraft were mapped separately. Other routes with intervening jurisdictions were sometimes mapped inadvertently, and we then designated with an “X” per the note in 4(f), above.

6. Routes were suggested with current infrastructure in mind. Future improvements might alter suggested routing. Occasionally a route was included to show how Google's mapping logic would have constructed a route even when an existing bike route might have been used.

Many volunteers mapped these routes. Their names are included with information about the routes, where known. Their work is gratefully acknowledged!