

Southwest Michigan Bikeway (KATS “Map 7”) Implementation Plan

Updated per Kalamazoo Region Bike Route Committee Quarterly Meeting July 20, 2021

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Lori Dey, Issac Green, Marcy Hamilton, Jamie Harmon, Kathleen Hoyle, Lisa Imus, Megan Mickelson, Dennis Randolph, Brian Sanada, Paul Selden (Chair), Jodi Stefforia and Ali Townsend, present

The Kalamazoo Region Bike Route Committee (KRBRC) offers this updated plan intending that it serve as a helpful guide to implementing the bicycle route network proposed/shown in Map 7 of the Kalamazoo Area Transportation Study’s 2045 Metropolitan Transportation Plan. The network is now also called and being signed as the “Southwest Michigan Bikeway.” Powers and authorities of governing jurisdictions / agencies prevail in case of any disagreement with the contents of this plan.

Goal

“Map 7” – entire network map signed in five years; see Appendix A for list of benefits.

See Appendix B for resolutions incorporating “Map 7” or the entire KATS 2045 “Non-motorized Element” by reference, into any given jurisdiction’s master plan

Time Frame (Initially set in 2016; see below for current progress)

Iterative implementation; each jurisdiction/agency implementing what it sees best at the time

Year 2 (now, 2021): all or part implemented in lead* jurisdictions, preferably ea. route as complete as possible (w/in and/or across all jurisdictions/agencies on ea. route; progress review quarterly)

Will track progress of lead (*most interested) jurisdictions, with priority on 2019-2020 leads

Years 2-5: Goals set each year after progress review; plans revised accordingly

Many practical ways to prioritize routes; see Appendix C for ideas.

Funding sources

Each agency/jurisdiction seeks funding independently. See Appendix D for Funding Ideas.

Signage: Design

The network illustrated in KATS “Map 7” has been named and is being signed as the “Southwest Michigan Bikeway” in Kalamazoo County by the cities of Kalamazoo, Portage and the Road Commission of Kalamazoo County

Primary sign design concept: uniform elements based on the [M1-8a](#), which can be viewed from a hierarchical perspective somewhere between interstate US bicycle route signs ([M1-9](#)) and the more familiar local bike route signs ([D11-1](#) series). The M1-8a sign was approved by MDOT for use in this context and recommended by KRBRC vote; 18” wide by 24” tall size, predominantly green and white; logo on top; standard “MDOT bicycle pictograph” in center; at bottom the words “Southwest Michigan Bikeway” (see below). See Appendix E for examples of the M1-8a.

Three M1-8a based sign options should be made available:

1. Standard: Standard Logo (“bike wheel”), bike symbol, text at bottom (“Southwest Michigan Bikeway”) without further customization
2. Standard + Jurisdiction Name plaque: 6" tall x 18" wide plaque
3. Standard + Custom Logo area: Standard Logo with Custom Logo denoting jurisdiction/agency paying for the sign, as may be acceptable per the MMUTCD*. *Examples: jurisdiction/agency name wrapped above Standard Logo, printed within a broader white border, jurisdiction/agency insignia instead of Standard Logo, combination text and insignia, etc.

For principles and comments leading up to these decisions, see survey results through January 2017 (<http://bikefriendlykalamazoo.org/wp-content/uploads/2017/07/Bikeway-Sign-Idea-Prelim-Survey-Tallies-170119.pdf>) and the decisions reached in KRBRC’s January 23, 2018 quarterly meeting (see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/01/KRBRC-180123-Qtrly-Meeting-Notes-180129.pdf>).

From an engineering/transportation perspective, Map 7 consists of routes preferred among the many possible (close to 400) node-to-node connections that also met the following operational definitions/criteria:

- transportation orientation (population and employment centers)
- named nodes (municipalities in KATS + 2 institutions of higher learning)
- connections among closely adjacent nodes to reduce number of permutations.

Within the KATS MPO, Map 7 signs should be reserved for Map 7's interjurisdictional routes, vs. more local intra-jurisdictional oriented routes.

MDOT's general support for signing M-roads within Map 7 remains, although not for the previously considered "Portage model;" see <http://bikefriendlykalamazoo.org/wp-content/uploads/2017/07/MDOTMap7LtrandEmail.pdf> and Appendix E for further information.

Distance/destination/direction plaques (D1-Xa series) posted underneath primary sign at turns, network junctions and approximately every mile for confirmation; some arrows; see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/01/Southwest-Michigan-Bikeway-Sign-Guidelines-180129-PDF.pdf> for additional sign preference and location details

Support for KRBRC's Sign Guidelines have been received from the cities of Kalamazoo and Portage, the villages of Paw Paw and Vicksburg, Discover Kalamazoo, the Kalamazoo County Board of Commissioners and many others (see Appendix B for additional names and links to those documents).

Benefits of recommendation include enhanced ability to gain attention and awareness, familiarity, and place-making, being cautious not to promise safety benefits beyond that recognized for green and white wayfaring navigational guide signs by AASHTO, NACTO and other prevailing authorities

Act 51 agencies have the authority to use green/white bike route signs as they desire, within certain professional parameters. The Southwest Michigan Bikeway requires interjurisdictional and interagency collaboration on a majority of the routes. KRBRC is relying on a community-minded, cooperative effort, with key stakeholder input and direct participation on this this committee, working out generally accepted standards/guidelines for Map 7 sign design as deemed appropriate.

See Appendix E for details on obtaining permission to vary from MMUTCD

Intra-jurisdictional Route Considerations

On July 16, 2019 those present came to the general understandings/agreements in this section.

Map 7 illustrates intra-jurisdictional routes in Kalamazoo, Oshtemo and Portage in traditional general beltway/ring road, beltline / connector configurations. The rationale for adopting this approach was multi-dimensional. For example, at the time of Map 7 adoption, these municipalities were seen to have had either relatively congested centers and/or geographically dispersed business/residential areas. Routing all regional SWMB bike traffic to their "centers" would be less safe, assumed that would be the single place to which riders would want to travel, as well as impractical. Practical difficulties included the need for relatively complex directional signing out of the hypothetical single "Google Mapping" center, and the increased expense of adding bike route signs where perhaps none existed. At the time, engineers within each of the three municipalities preferred the "beltway" and/or "beltline" within-municipality connector approach.

Most people should find it easier to understand the idea that distances between municipalities with such SWMB "beltlines" or "beltways" measure distances to the nearest point of that "beltline" or "beltway." Previous explanations involving terminology such as "nodes" and "intra-jurisdictional connectors" introduce unfamiliar jargon.

The D1-x series destination, direction & distance plaque are not recommended on such SWMB "beltways" / "beltlines," based on the impractical and confusing nature of signing all the combinations of routing present at any given point along the way. Directions are recommended to begin at the point of connection between destinations at their closest points to a "beltway" or "beltline."

Until SWMB "beltways" / "beltlines" connect cross-municipal routes, the primary M1-8a can be used without supplemental plaques (e.g., that might label the "bike beltway" as a "Connector" or part of a "Loop"). This principle may have timely application on the newly resurfaced roads within, say, Portage.

KRBRC participants unanimously preferred the method of combining signs for overlapping bike routes on a single pole in a "stacked" (vs "side by side" configuration), in cases where two single poles signing the two different Bikeways would result in two separate poles in fairly close proximity. Overlapping routes are found in Portage on the SWMB Kalamazoo-Portage Oakland Drive. The City of Portage's preference on SWMB routes that overlap The Portage Bikeway is to replace their existing The Portage Bikeway signs with SWMB in some cases. In the meantime, it was noted that there may be some "stacked" configurations in locations that are not at intersections.

Estimating Sign Placement / Count

Total centerline miles mapped in the SWMB: approximately 380 centerline miles. Since this estimate counts overlapped centerline miles in routes only once, which overlaps would otherwise be double counted (or more, in some instances), this estimate is a more accurate/realistic appraisal than would be obtained by adding up the total of individual route lengths. An interactive SWMB Google map* which conveniently identifies the routes by name and provides an aid to identifying route overlaps can be seen at:

<https://www.google.com/maps/d/u/0/viewer?mid=1MzKE10PUYpUARB-SPKc24VMtr6SvW7cs&ll=42.245096834551404%2C-85.6132484&z=11>

This map makes identification of the node-to-node connections that comprise the SWMB easy to highlight by "touching" the routes. It also provides an aid to identifying where routes join, overlap and separate. The instances of route connection, overlap and separation in different directions highlights the purpose and benefits of KRBRC's recommendation to identify such junctures with appropriate "D1-Xa-series" direction-destination-distance plaques, for wayfinding purposes. *Thanks to Paul Sotherland for taking the time to create and provide this helpful Google map.

Probably 4-5 per mile on each side of road in more urban areas, as few as 1-2 per mile in some rural areas; placement to be mapped per ea. jurisdiction's resources; BFK can assist

General guidance: per wayfinding needs (at start/end; prior to turns and after major intersections)

Cost TBD; up to approx. \$200/installed (includes engineering, \$36/main + \$11/sq. ft. plaques, arrow, post, and installation); Rathco estimates \$18.75 for a single 18"x6" D1-1a (destination, distance, direction) sign per sample shown at March 21, 2017 meeting

Total estimated cost of signing the entire SWMB network may be less than \$1,000,000, based on the following assumptions and rounding up: 400 centerline miles; 10 sign installations per centerline mile (4-5 signs, in either direction on each side of the road); \$200 per installation.

Based on City of Portage's experience, expect 1-2% annual sign replacement

If damaged by motor vehicle, may be able to collect cost from driver/insurance company

See Appendix F for more details from earlier drafts of plan

Township / Road Commission Considerations

Kalamazoo County: townships must submit a permit application, one per route, to the RCKC for a permit to install the signs; permit to include map of probable locations; route must be incorporated into the jurisdiction's non-motorized plan; mention that route is part of "Map 7" in applications; to facilitate RCKC review, use consistent permit style. Note: It is uncertain how RCKC's January 23, 2018 Sign Policy and Implementation Plan may affect KCRC's previously articulated process. Deb Buchholtz presented a written reply to questions posed by Comstock Township Supervisor Randy Thompson at the October 23, 2018 KRBRC regular quarterly meeting. See <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/Comstock-Twp-Supervisor-SWM-bikeway-sign-Response.pdf> for Ms. Buchholtz's current rationale re. RCKC's use of the D11-1c.

Questions remain to be answered re. those posed by Comstock Township Supervisor Randy Thompson: see [this link](#) for details; it is not currently clear whether the previous permitting requirements are being followed.

How best to present "big picture" to VBRC: ongoing discussion

Van Buren: considerations pending

See Appendix G for further background

2021 Goals & Next Steps

Key Steps

1. Set Goal (scope: routes w/in jurisdiction; encourage neighbors to complete in 2020-?)
- 2a. Prepare Sign Location Maps (requesting BFK's assistance, or not?)
- 2b. Incorporate Routes Into Master Plans (via "standard" resolution, or otherwise?)
- 2c. Design Sign (i. ideas ii. refine iii. stakeholder decisions iv. formal approvals)*
3. Budgets (rough)
4. Approvals (internal, external)
5. Bids
6. Permit Applications
7. Installation

Goal: personal goal of participant; may or may not represent formalized goal of jurisdiction/agency.

BFK: helping with 2a, 2c, and facilitating working meetings as long as it makes sense; 2c is assumed as necessary for all jurisdictions, hence not listed below.

Antwerp Twp – Goal: _____? Next: 1

Comstock Twp – Goal: Sign entire map. Next: 2b

Cooper Twp – Goal: Sign entire map. Next: 2b

Kalamazoo (City) – Goal: Per R. Kik, J. Baker, selected route(s) in 2019. Next: 2a?, 2b; Kalamazoo-Portage Oakland route is almost complete; Paul Selden sent file to Anthony Ladd

Kalamazoo Twp – Goal: Sign entire map. Next: 2a

MDOT – Goal: Van Buren Co. “soon;” Kalamazoo Co. 2020. Next: 2a

Oshtemo Twp – Goal: Sign entire map per updated Master Plan. Next: 2b; 6? (early 2019)

Paw Paw (Village) – Goal: Goal: _____? Next: 1

Portage (City) – Goal: Sign entire map, starting with select route(s) in 2019. Next: 2a; complete Kalamazoo-Portage Oakland route; part of intra-jurisdictional route has been signed in 2020 on Lovers Ln from E. Centre to Romence; current plan is to sign SWMB per typical road project schedules. Verify “stacked” configuration vs. “alternated” signs (Portage Bikeway/SWMB).

RCKC – Goal: Goal: _____? Next: ?

Schoolcraft Twp – Goal: _____? Next: 1

Texas Twp – Goal: _____? Next: 2a (w/BFK); 2b

Vicksburg (Village) – Goal: Sign entire map; most likely in 2020. Next: 4

In-Meeting Decisions / Updates (previously decided/reported items not repeated)

1. Collaborative agreement on a cross-jurisdictional guide for signing the Southwest Michigan Bikeway (sign designs/locations, etc.) that takes into account the variety of existing bike related signage and the unique and more complex nature of some of the intra-jurisdictional connections, continues to be on the critical path. Moving forward should lead to such a collaborative, cross-jurisdictional set of guidelines. Status: PENDING. The work of an ad hoc volunteer subcommittee consisting of James Baker (Kalamazoo), Kendra Gwin and/or Transportation & Utilities representative (Portage), Marc Elliott (Oshtemo), Daniel Dombos (Abonmarche), Alan Smaka (Wightman & Assoc.) and Mickey Bittner (Wightman & Assoc.), with Paul Selden serving as facilitator has been gathered. Ryan Minkus (KCRC) has been invited (acceptance pending). The new director of Van Buren County Road Commission will also be invited to participate. A Southwest Michigan Bikeway (“Map 7”) Sign Guidelines Content Outline Draft: September 16, 2018 is available at <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/SWMB-Sign-Guideline-Content-Outline-draft-180917.docx> Formal approval of the content outline is the next step now that it has been informally approved by several of the committee. The new section above on Intra-Jurisdictional Route Considerations may also be presented for comment. Status: PENDING.
2. How should we present our “big picture” plan to Van Buren Co.? Status: Villages of Lawton and Paw Paw support KRBRC implementation plan; Lisa Imus will facilitate a meeting perhaps by the end of 2020; PENDING: Van Buren County Road Commission orientation following introduction to Dan Bishop, their new Managing Director.
3. RCKC road commissioners at the April 30, 2019 meeting were asked to provide maps of sign locations and asked about how complete their effort was at this point. Status: PENDING. As of 2021, may come out of KATS Non-Motorized Plan Subcommittee for 2050 Metro. Trans. Plan.
4. Questions remain to be answered by RCKC re. those posed by Comstock Township Supervisor Randy Thompson: see [this link](#) for details. Status: PENDING.
5. Lisa Imus reports it is possible that a portion of \$258 million in Federal economic development funding may be available to improve bike facilities within the Southwest Michigan Planning Council region, which includes KATS. Status: PENDING. Next steps - meeting w/ Lisa Imus & Paul Selden to determine approach.
6. Opportunities to collaborate with the Southwest Michigan Planning Commission on identifying regional routes linking the counties covered by [MDOT’s Southwest Michigan Region Nonmotorized Transportation Plan 2020](#) will be explored. Status: COMPLETED. Next steps - Brian Sanada is reaching out to his counterparts in MDOT, Paul Selden doing likewise w/ Lee Adams and BFK participants to explore route development. KATS will be involved too re. its transportation oriented regional routing. Ties in with federal and state trends re. regional connections.

Appendix A: Benefits of Bike Route Wayfinding Networks / Our Network

It may be that each independent Act 51 agency has the authority to use bike route signs of their own design on roads in their own jurisdiction. There are benefits to using a more or less commonly agreed-upon design and guide for their use throughout the KATS MPO, however. These benefits are well-enough established so that they are listed in a number of authoritative sources.

NACTO's guide for bike route wayfinding lists the following benefits for signed bicycle routes:

- Familiarizes users with the bicycle network.
- Identifies the best routes to destinations.
- Overcomes a "barrier to entry" for infrequent bicyclists.
- Signage that includes mileage and travel time to destinations may help minimize the tendency to overestimate the amount of time it takes to travel by bicycle.
- Visually indicates to motorists that they are driving along a bicycle route and should use caution.
- Passively markets the bicycle network by providing unique and consistent imagery throughout the jurisdiction.

Source: <http://nacto.org/publication/urban-bikeway-design-guide/bikeway-signing-marking/bike-route-wayfinding-signage-and-markings-system/>

MDOT uses the "Relative Danger Index" that favorably contrasts bike routes vs. other common bike amenities; in the RDI index only bike lanes score better.

Source: <http://www.bikexpert.com/bikepol/facil/sidepath/sidecrash.htm>

A Summary of a Comprehensive Evaluation of Pedestrian and Bicycle Crashes and Causes in Michigan found that, "86% of crashes in the category of failing to yield did not have any signage present." In the same light, only some 1% of such crashes occurred when bike route signage was present, a level roughly comparable to crash rates when bike lane signage was present (page 12, http://www.michigan.gov/documents/msp/PEDESTRIAN-BICYCLE_ANALYSIS_-_A_SUMMARY_REPORT_-_FINAL_-_022916_523923_7.pdf).

AASHTO's Guide for the Development of Bicycle Facilities (4th ed., page 2-21) lists benefits for bike route wayfinding systems, including:

- enhances other encouragement efforts
- provides a visible invitation to new bicyclists
- encourages current bicyclists to explore other destinations

but has not yet declared a safety benefit.

See link below for ideas drawn from AASHTO on how to answer the question, "Why are you proposing on-road bike routes right next to perfectly good trails?" Short answer: "Authorities like AASHTO state that on-road routes may offer potential safety benefits in certain areas, and are likely to be preferred by many bicyclists. AASHTO states that on- and off-road facilities should not be used to preclude each other."

[<http://bikefriendlykalamazoo.org/wp/wp-content/uploads/2017/03/AASHTO2012BicycleFacilitiesExcerpts.pdf>]

The City of Chicago found that "The Signs did the Following for the Majority of Bicyclists:"

- Helped with Navigation
- Helped Them Feel More Legitimate to Motorists as Legal Users of the Road
- Encouraged Them to Take New Streets

Source:

<http://www.bikewalk.org/2006conference/vconference/presentations/GrantDavisChicagosBikewaysSignageSystem.pdf>

According to Steve Stepek, once complete, this MPO-wide network may be the most extensive in the State of Michigan. Marc Irwin, an experienced bicycle tourist and member of the KATS Citizens Advisory Committee, concurs.

From email to Doug P & others from Paul Selden on December 2, 2016:

- This concept expands bike-ability to more communities since not everyone lives near a trail and since, per road commission policy, many areas are not permitted to have bike lanes.
- Bike routes have a great cost/benefit ratio as a way to connect other bike facilities.
- Bike routes can connect people with the trails
- It makes sense to be able to ride a bike to a trail; this would make more people feel okay about riding to the trails.
- There is a marketing benefit to promoting our MPO as "first," "most," "a leader," etc., if we can pull this off.
- The bike route network idea is affordable for a greater range of townships, and gives them a way to add a bicycling amenity to the list of their special features.
- Related signage raises awareness of each of our communities' unique identities.
- Related signage gives bicyclists concrete destinations to "aim for" on their rides.
- Related signage tells out of towners that we are bicycle friendly.

There are undoubtedly more local benefits that we need to list, as well. Doug Plachcinski has developed a presentation for tailoring/use by others; see <http://bikefriendlykalamazoo.org/wp-content/uploads/2017/04/regionalbikerouteshelpeverybody003.pptx> . Paul Selden presented a powerpoint to the Kalamazoo Board of Township Supervisors that is also available for tailoring/use by others; see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/SWMB-Township-Supervisors-Mtg-Update-180328.pptx>

KRBRC's rationale in favor of the M1-8a over the D11-1c was noted on January 23, 2018 in KRBRC Sign Design Detailed Recommendations (see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/KRBRC-180123-Qtrly-Meeting-Votes-w-Comments-180129.pdf>)

Metro Nashville's Music City Bikeway uses the area's renown as a center of music to promote bicycling, incorporating a keyboard logo into their distinctive M1-8a sign (see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/mcbw-map.pdf>).

The Lake Norman Bicycle Route links cities and places of interest in a connected network of loops, out-and-back runs, on and off the road signed by the M1-8a (see <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/10/Brochure-cover-final-6-21-10.pdf>)

Appendix B: Resolutions/Declarations Supporting Non-Motorized Plan / KRBRC's Sign Guidelines

A number of jurisdictions have passed resolutions supporting and /or incorporating the bike route network found in "Map 7," including Kalamazoo County, the City of Portage, Kalamazoo Township and Comstock Township. Their resolutions are posted in links found on Bike Friendly Kalamazoo's web site, on this page: <http://bikefriendlykalamazoo.org/planning-policy-examples/>

A number of organizations and stakeholders have passed resolutions or offered declarations supporting KRBRC's Sign Guidelines recommending the M1-8a and related destination/direction/distance signs. For an example of a resolution, see [Charter Township of Oshtemo Resolution of Support Kalamazoo Regional Bike Route Committee Sign Design for the Southwest Michigan Bikeway Adopted September 9, 2018](#). Letters of support for signing the Southwest Michigan Bikeway using the M1-8a bike route sign and associated destination/direction/distance and turn arrow signs recommended by the Kalamazoo Region Bike Route Committee have been received from the [City of Kalamazoo](#), the [Village of Paw Paw](#), the [Village of Vicksburg](#), the [City of Portage](#), [Discover Kalamazoo](#), the [Kalamazoo Bicycle Club](#) (as modified by [this](#) correspondence), [TriKats](#), [Paul Runnels](#), [Ed Sackley](#), [Jennifer Johnson](#), [Open Roads Bike Program](#), the [Chain Gang Bicycle Club](#) and [Marc Irwin](#). On July 6, 2020 the Kalamazoo County Board of Commissioners adopted their [Kalamazoo County Resolution Supporting Uniform Bike Route Signage](#), recognizing the Kalamazoo Region Bike Route Committee as a source of information and supporting its signage recommendations.

Two sample resolution “templates” are posted at: <http://bikefriendlykalamazoo.org/wp-content/uploads/2017/03/Example-Resolutions-Supporting-NMPs-170319.docx>.

An example of such a “template” for a resolution reads:

Whereas, on July 5, 2016, the Kalamazoo County Board of Commissioners passed a resolution to support the development and implementation of a Complete Streets Policy that takes into consideration the needs of non-motorized users of roads and their right of ways; and

Whereas, many Cities, Townships and Villages within our Metropolitan Planning Organization (MPO) either have adopted non-motorized plans of their own, or are in the process of considering or actively developing and implementing non-motorized plans that could involve cross-jurisdictional cooperation and connectivity; and

Whereas, on April 27, 2016, the Kalamazoo Area Transportation Study (KATS) included and adopted a well thought-out non-motorized plan covering not only our own jurisdiction but also the rest of the MPO (entitled, the Non-Motorized Element, beginning on page 117 in the KATS 2045 Metropolitan Transportation Plan), that was reviewed and vetted through an open and systematic public process by community stakeholders, KATS staff, and KATS Technical and Policy Committees, which Committees duly represent the Road Commissioners of Kalamazoo County and the vast majority of the KATS MPO’s Cities, Townships and Villages; and,

Whereas, our jurisdiction recognizes that an important aspect of fiscal prudence is to make use of and build on resources which already exist; and

Whereas, our jurisdiction believes that it is important and beneficial to continue to add its voice, support and encouragement to discussions surrounding non-motorized planning, taking action where feasible;

Now, Therefore be it resolved that our jurisdiction: endorses and incorporates by reference the KATS Non-Motorized Element as our own Non-Motorized Plan to the extent it is in concert with related plans of our own; supports its implementation; and, encourages our local transportation agencies and the other jurisdictions within the KATS MPO to likewise support and implement the KATS Non-Motorized Element in a balanced fashion, while encouraging each other to do likewise in the highest traditions of intergovernmental collaboration.

Appendix C: Ideas for Categorizing/Prioritizing Routes

Reasons for categorizing routes include helping to determine which might be “easiest” to sign (for many reasons), which might be signed in Years 1-5; other?

Ideas for categorizing/prioritizing routes:

1. Routes with no intervening jurisdictions, e.g., Portage-Texas Commuterv2.
 2. Routes where intervening jurisdiction serves only as “host,” e.g., Schoolcraft-Mattawan Commuterv3, where route passes through southwest corner of Texas Twp.
 3. Routes involving jurisdictions with “bike-friendly” policies
 4. Routes solely using road commission roads, e.g., Cooper-Alamo Commuter.
 5. Routes solely using MDOT roads, e.g., Lawton-Paw Paw Commuter.
 6. Routes to/from KVCC, WMU and other jurisdictions.
 7. Routes paralleling stretches of off-road multi-use trail, e.g., Galesburg-Comstock Commuter.
 8. Routes making use of road with existing bike route/bike lane signage, e.g., within and between Portage and Kalamazoo.
 9. Routes involving jurisdictions that may require relatively more outside funding assistance, e.g., Fulton-Climax Commuterv2
 10. Intra-jurisdictional routes, e.g., Oshtemo Intra-Jurisdictional Node Connector
- Other?

Appendix D: Funding Sources

Private funds: can brainstorm donor names; philanthropic sources

KATS: set aside something from TAP each year explicitly for this project; this shows it is a regional priority; with or without a match requirement

Non-Motorized Element in KATS 2045 Transportation Plan presents series of ideas. See pages 149-155 at <https://katsmpo.files.wordpress.com/2012/03/2045-mtp-adopted-4-27-2016.pdf>

Local dollars: from each jurisdiction when a project is pursued locally

Other grants: Gilmore, safety funds (talk with Steve, Doug), Kalamazoo Foundation

Rathco/sign makers: might give discount, offer free installation for larger orders, etc.?

A “limited invitation” funding brainstorming meeting was held on August 11, 4pm at SWMF offices.

Andrew Haan, Chris Tracy, a limited number of others were invited. Please see

<http://bikefriendlykalamazoo.org/wp-content/uploads/2016/08/BFK-Bike-Route-Funding-Meeting-Notes-160811.pdf> for copy of meeting notes emailed to you earlier.

Road Commission of Kalamazoo County will fund routes in their jurisdiction; more details expressed in RCKC’s January 2018 [Sign Policy](#) and January 9, 2018 board packet, and [RCKC Signing Implementation Plan](#). Some details remaining to be confirmed/better understood re. RCKC’s Sign Policy and its acceptance/use of other funding sources for signs in their jurisdiction can be found [here](#).

Summary: if community wants to fund signing all of Map 7 at once, a major community effort and careful strategy would be needed (e.g., for an area-wide millage or fund-raising campaign); other efforts can be scaled, with local funding being the “easiest” to obtain.

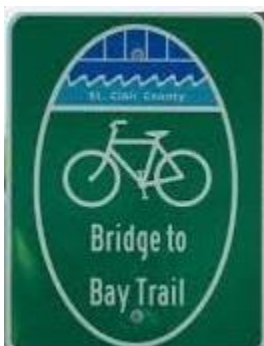
Appendix E: Additional Sign Design Comments

Example of the M1-8a recommended by KRBRC for the Southwest Michigan Bikeway:



Note: More information on the layout specifications for the M1-8a can be found [here](#) and [here](#).

Examples of the M1-8a sign elsewhere in Michigan:



Emails from MDOT regarding the M1-8a can be found at <http://bikefriendlykalamazoo.org/wp-content/uploads/2018/02/MDOT-Emails-re-M1-8a-and-D11-1c-2017-2018.pdf>

Benefits of a distinctive, uniform sign for Map 7 are described in Appendix A.

MDOT is actively collaborating on sign design; MDOT’s June 9, 2017 letter (previously mentioned) supports general sign design concept; also, per extract of email from Denise Smith of MDOT received July 7, 2017:

“We believe that we can only speak for MDOT roads; how other jurisdictions choose to proceed on their roads is not for us to decide.

“The letter that we have already provided includes that “we are comfortable with the general sign design (green/white 18” wide x 24” tall with a bicycle symbol and text – a modified version of the M1-9 sign in the Michigan Manual on Traffic Control Devices)”. “From our point of view,” [although the sign now preferred by the KRBRC is based on the M1-8a,] “this speaks directly to our overall support of MAP 7 as well as our acceptance of the sign design (plus it references the MMUTCD). That point can be highlighted to let interested parties know where MDOT stands on the effort.” MDOT is currently taking a “neutral” stance as to whether it will use the M1-8a, per se.

Per Norm Cox and Josh DeBruyn, can ask for deviations; if MDOT is to participate on M-roads, must meet their standards for exceptions; NOTE:

Could be mixed with other bike route “D” and “M” series signs

Conventional street name signs along some bicycle routes may be redesigned to incorporate the street’s identity as a bicycle route, within jurisdictions having their own Act 51 authority. This could reduce clutter in the most urban areas, but it would reduce visibility at the same time.

A simple “one” page local set of guidelines would be helpful, based on current standards.

Needs to meet reflectivity and grade standards (“high intensity”)

Per extracts of email thread between Josh DeBruyn and Paul Selden; forwarded to our initial group:

“The federal experimentation process goes through the FHWA Washington DC headquarters (HQ) office.

“A request for experimentation would likely be done in conjunction with MDOT and probably the FHWA Michigan Division office so any requests submitted to FHWA HQ would likely already have been approved by MDOT and FHWA MI Division.”

“A request for Interim Approval (IA) of a sign supported by the NCUTCD would go through me and MDOT’s Traffic and Safety staff. Additionally, I would expect that local road agencies where the sign would be installed should be informed of the intent to seek an IA on the sign and they should agree to install it once approved. Otherwise, the IA is a moot point.”

“Mark Bott is the Manager of MDOT Traffic and Safety.”

See <http://mutcd.fhwa.dot.gov/condexper.htm> for more information. An example response from the FHWA to such an application letter is at

http://mutcd.fhwa.dot.gov/resources/interpretations/9_09_74.htm See also

http://bikefriendlykalamazoo.org/wp-content/uploads/2016/08/TAPWayfindingV6_Cox.pdf for this response plus additional helpful information pertaining to a professional approach to route sign budgeting and counting, presented by Norm Cox. Paul Selden discussed Louisville (KY)’s application with Mark R. Kehrl, Director of Transportation Operations with the FHWA and expects to receive a copy of the actual sign variation application package fairly soon.

Possible Acceptable Solutions: Call it a “Bikeway” on main sign as a unifying theme; use “modern” symbol for bicyclist; acceptable fonts, sizes (Clearview font may be current standard). See Norm Cox’s May 21, 2015 presentation at an MDOT Bike & Pedestrian meeting for many ideas at: <http://bikefriendlykalamazoo.org/wp-content/uploads/2016/08/Bike-Route-Signing-Options-Norm-Cox.pdf>

Use add on signs to indicate destination, distance – check to see if this really saves money since installation costs comprise most of the costs; Paul Selden paid \$30 for a single Portage sign.

Proposed “Intergovernmental Collaborate Sign Policy” (comments below have been updated as of October 3, 2016 and are limited to the proposed policy’s relationship to our draft Map 7 plans and may not reflect the entire range of comments we may have as a group or otherwise):

- a) We want to reserve the right to use a unique sign based on the M1-8a (see page 28) as a model for signs we might want to use, across the entire county (if we decide to use that sign as a model, once our work is done).
- b) We want to reserve the right to use all of the MMUTCD signs currently allowed for bicycles (and not see them prohibited up front, en masse).
- c) We want to reserve all of the rights / authorities we now have, and make sure that none of current policies/bylaws/etc. nor the current rights / authorities currently reserved to the townships/cities/villages elected officials and management, be diminished by the proposed road sign policies.
- d) We are uncertain about the answer to these important questions: 1) Under what authority is this policy being adopted that reduces the number and/or type of signs that may be used and gives the

traffic engineer sole authority to grant a deviation or remove an existing sign? 2) Where is due process and the right to be heard?

Note: Most of us have submitted comments as part of the Sign Policy Committee’s request for public input. We are waiting to learn what the next steps in their process will be. UPDATE: MDOT’s “Traffic Sign Design, Placement, and Application Guidelines” released March 2017 may have implications for the need for further work on a more local “Intergovernmental Collaborative Sign Policy;” see

http://mdotcf.state.mi.us/public/tands/Details_Web/mdot_signing_design_placement_application_guidelines.pdf

Appendix F: Sign Placement / Cost Details

MMUTCD “Section 2A.04 Excessive Use of Signs

“Guidance:

“01 Regulatory and warning signs should be used conservatively because these signs, if used to excess, tend to lose their effectiveness. If used, route signs and directional guide signs should be used frequently because their use promotes efficient operations by keeping road users informed of their location.”

MDOT will be paying for and paying for signs on the roads under its jurisdiction.

Based on Sign Inventory tally projects completed in July 2017, average count of “Bikeway” sign posts on each side of the road per mile (volunteer estimates pending professional review):

Comstock Twp	2.76
Cooper Twp	* pending
Oshtemo Twp	3.80

Destination/Distance/Direction series signs: approximately one per mile on each side of the road. M5 and M6 series arrow turn signs as occasionally needed.

Preliminary maps of proposed sign locations are stored on-line in an application called Ride With GPS (RWGPS). For the time being, lists of these rough drafts maps (pending review) can be called up at:

Comstock: <https://ridewithgps.com/users/219285/routes>

Cooper: <https://ridewithgps.com/users/219292/routes>

Oshtemo: <https://ridewithgps.com/users/949600/routes>

Paul Selden conducted a physical inventory of signs on representative stretches in the City of Kalamazoo and Portage. High level results: 90 signs (on one side of road) in 17.3 miles, for an average of 5.2 signs per mile. (See <http://bikefriendlykalamazoo.org/wp-content/uploads/2016/08/Example-Bike-Route-Sign-Counts-160829.xlsx> for more details.)

Least sign count per mile, one side of road:	3.0
Most sign count per mile, one side of road:	7.5
Standard Deviation:	1.3

Note: Signage in Kalamazoo and Portage often seem be spaced per guidelines for bike lanes (vs. bike routes); their signs may be more closely spaced than on typical bike routes.

Paul Selden inquired whether City of Kalamazoo or City of Portage has a sign inventory. No reply from City of Kalamazoo’s Traffic Engineer; City of Portage does not have such an inventory as of early 2017, per Streets Dept., but may be working on it

The City of Chicago posts this about bike route signs per mile: “Placed Every ¼ Mile; Placed After Every Turn; Placed After Every “Major” Signalized Intersection” (see

<http://www.bikewalk.org/2006conference/vconference/presentations/GrantDavisChicagosBikewaysSignageSystem.pdf>)

Approximate locations (subject to easement and utility location) can be estimated using computer to get street level views, etc.

Each route determines actual number and placement (e.g., fewer needed on stretches with fewer intersections)

Each jurisdiction can introduce a resolution to incorporate by reference the KATS’ 2045 Metropolitan Transportation Plan’s “Non-Motorized Element” as their own, if they do not have their own non-motorized plan, OR amend their existing NMP to incorporate “Maps 6 and 7” from the KATS plan, to meet possible permitting requirements of the RCKC

Introduce concept to board before having a fairly firm estimate, or wait to get an estimate first, on a jurisdiction basis?

BFK held an estimating session on Aug. 4; 3:30-6pm. Minutes are posted on BFK's website and are also at <http://bikefriendlykalamazoo.org/wp-content/uploads/2016/08/BFK-Commuter-Bike-Route-Estimating-Session-Minutes-160804.pdf> High level results: all individual routes estimated; details to follow and also be posted on BFK's website. Important: due to overlap among many of the routes, adding the length of individual to/from route will result in significant over-estimates.

Using a "Scale Master ProXE" measuring tool and "Ride With GPS," an on-line mapping tool, Paul Selden has estimated the total "one side of road" miles of signage in each of the following jurisdictions as follows:

- Comstock Township: 61.4 miles
- Cooper Township: 26.2 miles
- Kalamazoo Township: 28.1 miles
- Texas Township: 54.7 miles

Note: "One side of road" miles = miles of "to/from" bike route signs, not centerline miles.

BFK website has a link to the individual routes used in KATS' Map 7; or, see <https://ridewithgps.com/users/800851/routes>

Maintenance/Replacement: City of Portage reported four Bikeway signs needed to be replaced last year, due to various causes: accidents, vandalism, weather damage (e.g., fallen trees).

Appendix G: Background on Township Considerations

An email dated September 26 from Ryan Minkus of the Road Commission of Kalamazoo County contained his views on various points (that came up during a meeting he held with Doug Plachcinski, Jodi Stefforia and Paul Selden on August 30, 2016):

###

a) *Interest was expressed in partnering with RCKC bids for signs procurement to potentially utilize on the volume of a larger agency.*

RCKC does not have a standing PO or regularly solicit bids for large sign material contracts. RCKC maintains an inventory/stock pile of signs for the county, and from time to time will solicit quotes from vendors as-needed to replenish our supply.

b) *Interest was expressed in having RCKC staff install the signs and posts for the routes.*

Non- motorized facilities may be part of a primary or local road or standalone project. Following the notification timelines outlined in the RCKC Non-motorized Facilities Policy, if the sign installation were to correspond with a road improvement project, the installation of the signs could be considered with a project and paid for by the applicant. For standalone projects, the applicant would be responsible for the installation.

c) *Clarification was requested on sign placement.*

Per the MMUTCD: Signs requiring separate decisions by the road user shall be spaced sufficiently far apart for the appropriate decisions to be made. One of the factors considered when determining the appropriate spacing shall be the posted or 85th-percentile speed.

d) *Clarification was requested on the ability to share posts with other signs.*

Per the MMUTCD: Signs should be individually installed on separate posts or mountings except where: A. One sign supplements another; B. Route or directional signs are grouped to clarify information to motorists; C. Regulatory signs that do not conflict with each other are grouped, such as turn prohibition signs posted with one way signs or a parking regulation sign posted with a speed limit sign; or D. Street name signs are posted with a stop or yield sign.

[Note: Attachment A in prior editions of this Plan contains information on sign "piggybacking."]

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As summarized by Paul Selden, two key implications for us per the above four items appear to include:

- 1) The RCKC doesn't manufacture signs.
- 2) The RCKC doesn't have the staff to install them.

Other points in our August 30 RC meeting were summarized by Paul S.:

- a) the RCKC has the authority to put up whatever sign designs they want in their own jurisdiction;

- b) we would need to make a compelling case to deviate from standard MMUTCD signage, but are allowed to make that case;
- c) Ryan "prefers" not to piggyback signs;
- d) actual plans for the rough placement and sign type need to be route by route specific, of the sort that Texas Twp recently got a permit to do on one of their neighborhood routes; and,
- e) Ryan was reassured that we would be moving forward in a collegial and cooperative way with the RCKC.