

# Multimodal Transportation and Enhanced Trail Infrastructure



Hiawatha TA 2019



# KDOT as Technical Assistance Provider and My Unique Perspective

2009! With Dan Burden in Newton



KDHE-CHP Team 2019



1st Bike Safety Month – June 2019



Transit Day 2019





# COMMUNITY RESOURCES

## PARTNERING WITH **COMMUNITIES**

KDOT is committed to being a strong partner with communities to solve transportation challenges. The IKE program provides more flexibility to us to address local needs – and give Kansans more transportation choices.

[www.ksdotike.org/community/resources](http://www.ksdotike.org/community/resources)



# Transportation Alternatives Program



Atchison TA-SRTS Projects Awarded FFY2018

This image highlights the need for better accommodations for pedestrians on Naismith Dr at KU-Lawrence:

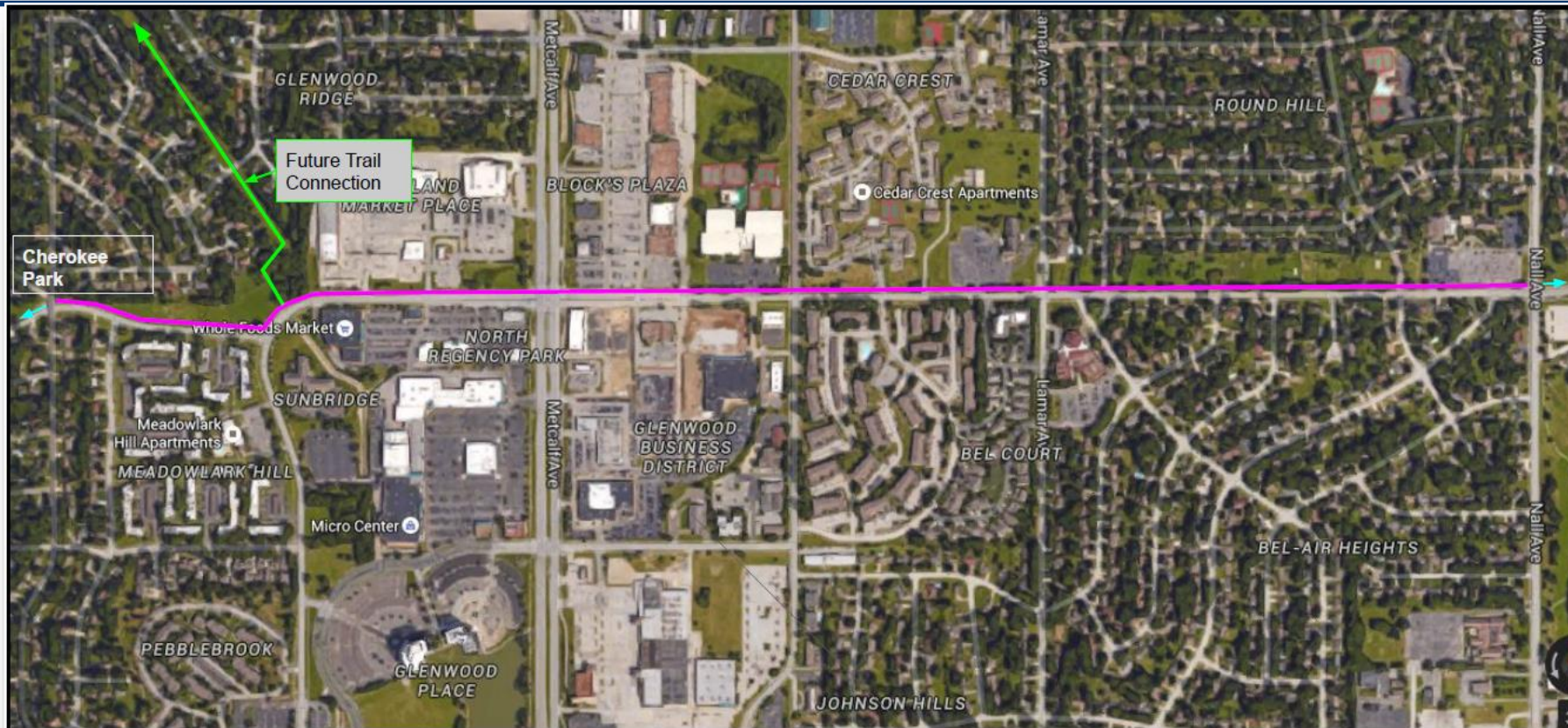


# Access, Innovation and Collaboration



This image highlights a transit stop, also on Naismith Dr. that is accessible and accommodating to pedestrians:

# Cost Share



Legend:

- Proposed Trail (7920')
- Future Connection
- Existing Trail

**Proposed 91st Street Trail Alignment 7920'**



**COST  
SHARE  
PROGRAM**

# Kansas Department of Wildlife, Parks and Tourism Recreational Trails Program (RTP)

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- The RTP provides 80 percent reimbursement
- 30% of the funding is to be devoted to motorized recreation projects.
- Qualifying projects include:
  - **New trail or trailhead construction**
  - **Maintenance or reconstruction of existing trails**
  - **Enhancements or upgrades to existing trails/trailheads**
  - **Development and planning or land acquisition and easements.**

For more information, contact Cherie Riffey, Trail Grant Coordinator, KDWPT:  
620-672-5911 or [cherie.riffey@ks.gov](mailto:cherie.riffey@ks.gov).



USBRs



## Small Town Invests Big in Bicycle Travel- Sterling, Kansas: A Case Study in Bicycle Tourism

Apr 12, 2021 | Advocacy



# Kansas Active Transportation Plan and Economic Study

Kansas  
Active Transportation Plan



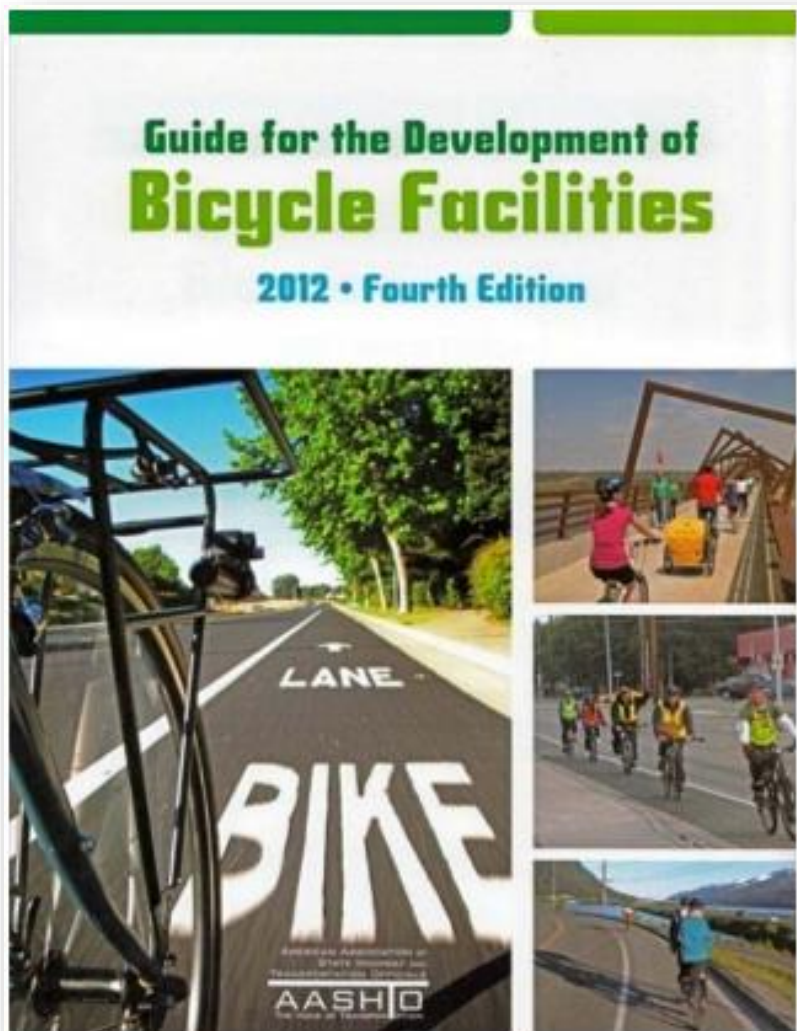
Active Transportation is Life



<http://www.ksdot.org/KansasATP.asp>



# Guidance Documents



## Rectangular Rapid-Flashing Beacon (RRFB)

**SAFE TRANSPORTATION FOR EVERY PEDESTRIAN**  
COUNTERMEASURE TECH SHEET

Multiple lanes of traffic create challenges for pedestrians crossing at unsignalized locations.

RRFBs can make crosswalks and/or pedestrians more visible at a marked crosswalk.

RRFBs can reduce pedestrian crashes by **47%**

**FEATURES:**

- Enhanced warning improves motorist yielding

**OFTEN USED WITH:**

- Crosswalk visibility enhancements
- Pedestrian refuge island
- Advance STOP or YIELD markings and signs

RRFBs are pedestrian-actuated conspicuity enhancements used in combination with a pedestrian, school, or trail crossing warning sign to improve safety at uncontrolled, marked crosswalks. The device includes two rectangular-shaped yellow indications, each with an LED-array-based light source, that flash with high frequency when activated.

The RRFB is a treatment option at many types of established pedestrian crossings. Research indicates RRFBs can result in motorist yielding rates as high as 98 percent at marked crosswalks. However, yielding rates as low as 19 percent have also been noted. Compliance rates varied most per the city location, posted speed limit, crossing distance, and whether the road was one- or two-way. RRFBs are particularly effective at multilane crossings with speed limits less than 40 mph. Consider the Pedestrian Hybrid Beacon (PHB) instead for roadways with higher speeds. FHWA's *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (HSA-17-072)* provides specific conditions where practitioners should strongly consider the PHB instead of the RRFB.

U.S. Department of Transportation Federal Highway Administration

Safe Roads for a Safer Future

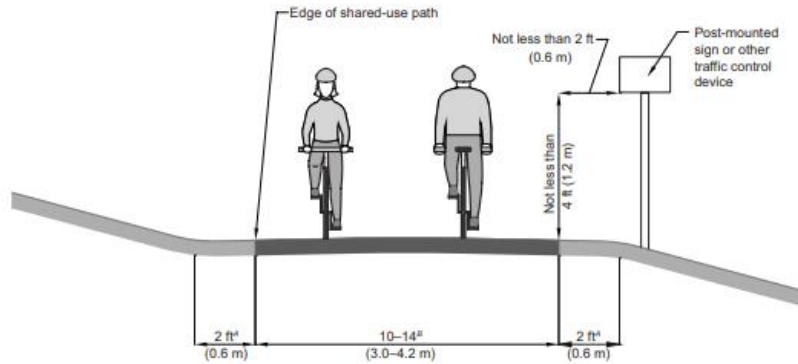
EDC

June 2018, Updated | FHWA-SA-18-065

For more guidance documents, visit:  
<http://www.ksdot.org/burRail/bike/default.asp>



# Guide for the Development of Bicycle Facilities



Notes:

<sup>a</sup> (1V:6H) Maximum slope (typ.)

<sup>a</sup> More if necessary to meet anticipated volumes and mix of users, per the Shared Use Path Level of Service Calculator (9)

Figure 5-1. Typical Cross Section of Two-Way, Shared Use Path on Independent Right-of-Way

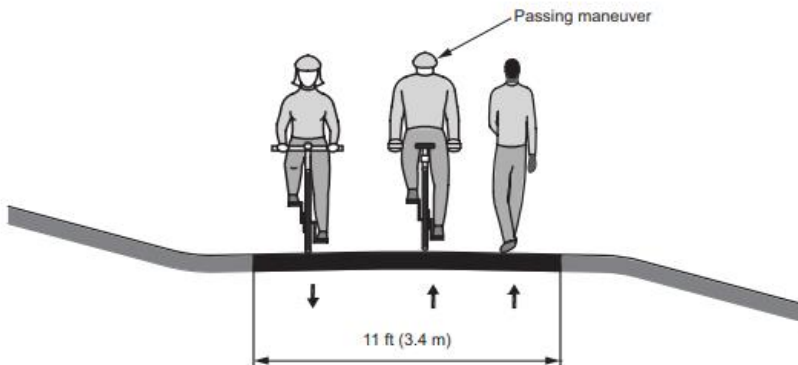


Figure 5-2. Minimum Width Needed to Facilitate Passing on a Shared Use Path

- Includes helpful definitions
- Covers paths plus on-road bikeways; includes comprehensive design, covers many innovations.
- Provides guidance on facility selection.
- A revised Guide is expected soon



# Guide for the Development of Bicycle Facilities

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***Shared Use Path***—A bikeway physically separated from motor vehicle traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Most shared use paths are designed for two-way travel.

***Shoulder***—The portion of the roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use, and lateral support of subbase, base, and surface courses. Shoulders, where paved, are often used by bicyclists.

***Sidewalk***—That portion of a street or highway right-of-way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians.

***Sidepath***—A shared use path located immediately adjacent and parallel to a roadway.

***Traveled Way***—The portion of the roadway intended for the movement of vehicles, exclusive of shoulders and any bike lane immediately inside of the shoulder.

***Unpaved Path***—Path not surfaced with a hard, durable surface such as asphalt or Portland cement concrete.



# STEP: Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations

## Table 1: Application of pedestrian crash countermeasures by roadway feature

Roadway Configuration	Posted Speed Limit and AADT								
	Vehicle AADT <9,000			Vehicle AADT 9,000–15,000			Vehicle AADT >15,000		
	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph	≤30 mph	35 mph	≥40 mph
<b>2 lanes</b> (1 lane in each direction)	① 2 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6	① 5 6 7 9	① 5 6 ⑦ ⑨	① 4 5 6	① 5 6 7 9	① 5 6 ⑨
<b>3 lanes with raised median</b> (1 lane in each direction)	① 2 3 4 5	① ③ 5 7 9	① ③ 5 ⑦ ⑨	① 3 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑦ ⑨	① ③ 4 5 7 9	① ③ 5 ⑦ ⑨	① ③ 5 ⑨
<b>3 lanes w/o raised median</b> (1 lane in each direction with a two-way left-turn lane)	① 2 3 4 5 6 7 9	① ③ 5 6 7 9	① ③ 5 6 ⑨	① 3 4 5 6 7 9	① ③ 5 6 ⑦ ⑨	① ③ 5 6 ⑨	① ③ 4 5 6 7 9	① ③ 5 6 ⑨	① ③ 5 6 ⑨
<b>4+ lanes with raised median</b> (2 or more lanes in each direction)	① ③ 5 7 8 9	① ③ 5 7 8 9	① ③ 5 8 ⑨	① ③ 5 7 8 9	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 ⑦ 8 ⑨	① ③ 5 8 ⑨	① ③ 5 8 ⑨
<b>4+ lanes w/o raised median</b> (2 or more lanes in each direction)	① ③ 5 6 7 8 9	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 7 8 9	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ ⑦ 8 ⑨	① ③ 5 ⑥ 8 ⑨	① ③ 5 ⑥ 8 ⑨

Given the set of conditions in a cell,

- # Signifies that the countermeasure is a candidate treatment at a marked uncontrolled crossing location.
- Signifies that the countermeasure should always be considered, but not mandated or required, based upon engineering judgment at a marked uncontrolled crossing location.
- Signifies that crosswalk visibility enhancements should always occur in conjunction with other identified countermeasures.\*

The absence of a number signifies that the countermeasure is generally not an appropriate treatment, but exceptions may be considered following engineering judgment.

- 1 High-visibility crosswalk markings, parking restrictions on crosswalk approach, adequate nighttime lighting levels, and crossing warning signs
- 2 Raised crosswalk
- 3 Advance Yield Here To (Stop Here For) Pedestrians sign and yield (stop) line
- 4 In-Street Pedestrian Crossing sign
- 5 Curb extension
- 6 Pedestrian refuge island
- 7 Rectangular Rapid-Flashing Beacon (RRFB)\*\*
- 8 Road Diet
- 9 Pedestrian Hybrid Beacon (PHB)\*\*

# Future Opportunities

- Kansas Active Transportation Enhancement (KATE) Program
- Active Transportation Summit
- ATP Policy memo
- ATP toolkits with potential for trainings and support:
  - Master Plans in small and medium sized communities
  - Bike/Ped accommodations on bridges
  - Active Tourism



## ATP TOOLKIT

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### Ped/Bike Network Planning for Small and Mid-Size Communities

# Tips for Writing a Competitive Application for Construction Projects

- From Master Plan → Construction application
- Communication between City and Community Health partners
- Be aware of Railroad crossings or right-of-way!
- Use guidance documents highlighted on KDOT Bike/Ped website when proposing facilities

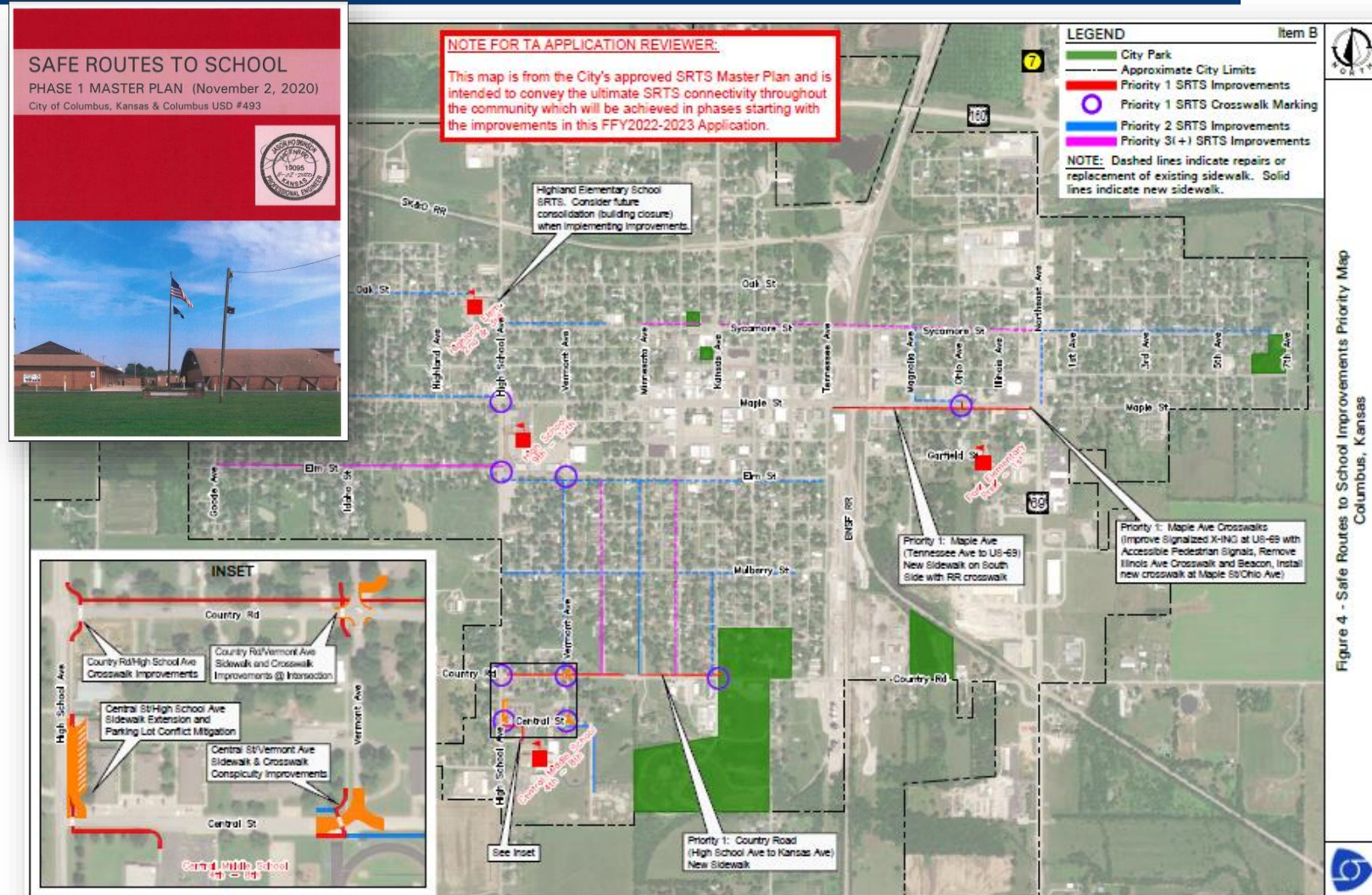


Figure 4 - Safe Routes to School Improvements Priority Map  
Columbus, Kansas



# Quick Glance at KDOT ArcGis

## Legend

### Designated\_and\_Priority\_Bicycle\_Routes

#### Local Bikeways

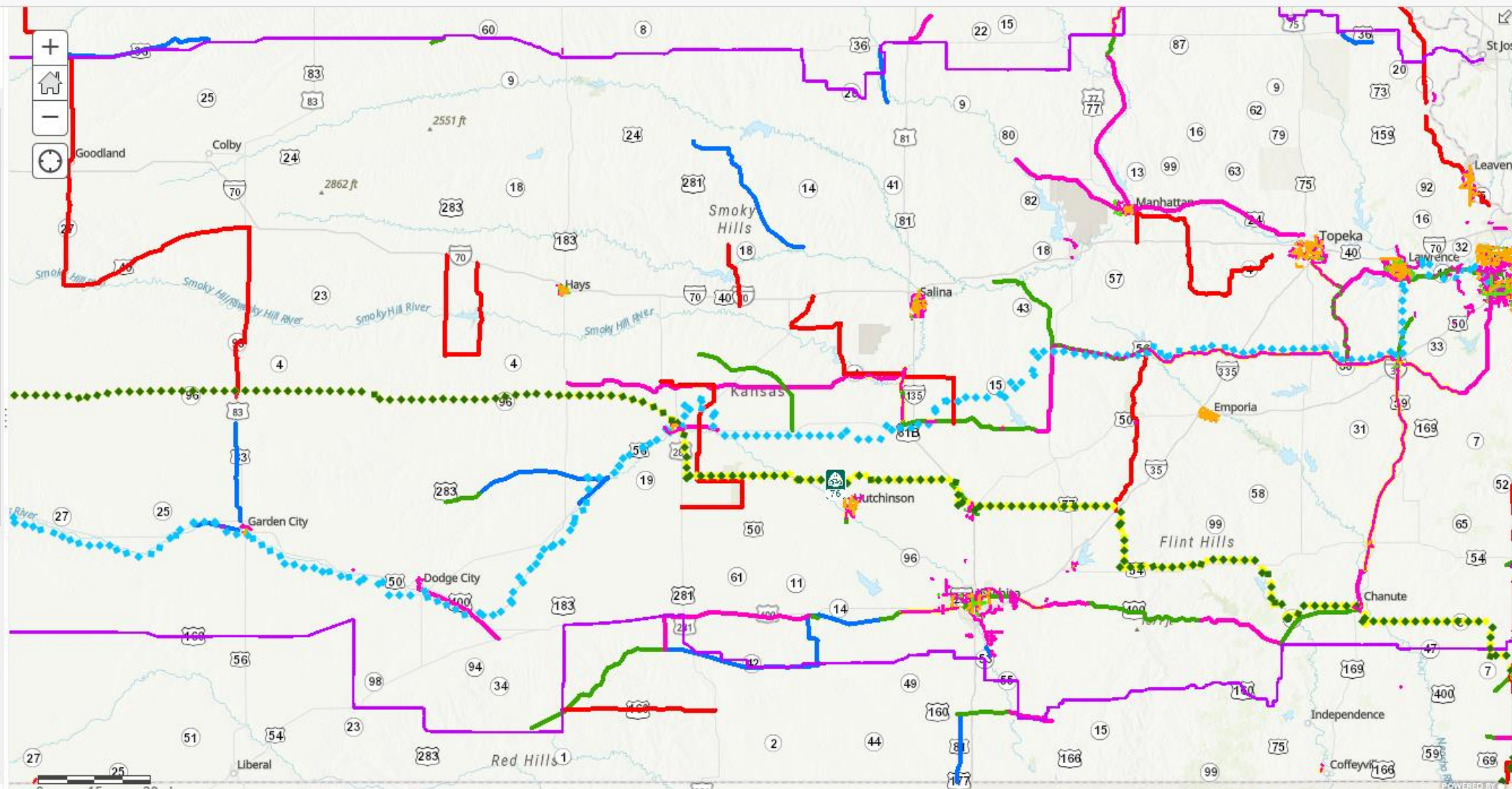
- Bike Routes
- Bike Lanes
- Bike Paths
- Future Bike Routes
- Future Bike Lanes
- Future Bike Paths

#### Cross State Bikeways

- USBR System
- Trans-America Trail
- American Discovery Trail

#### BAK Routes

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## Kansas Active Transportation Enhancement Program PROJECT CONCEPT FORM

**Note:** This is not a competitive application. The purpose of this Project Concept Form is to collect information related to a project need in your community. Please provide as much information as you are able. If you have any questions about this form, please contact Jenny Kramer by email at [jenny.kramer@ks.gov](mailto:jenny.kramer@ks.gov) or by phone 785-296-5186.

\*Required [information](#)

CONTACT INFORMATION			
1. NAME* (primary)	TITLE/ORGANIZATION	EMAIL*	PHONE*
2. NAME (secondary)	TITLE/ORGANIZATION	EMAIL	PHONE

PROJECT DESCRIPTION	
3. PROJECT TITLE	
4. PROJECT LOCATION/ADDRESS*	5. PROJECT LIMITS (mileposts, intersecting roadways, rivers, railroads, other boundaries)
6. EXISTING CONDITIONS AND NEED* (provide a brief description of existing conditions and project need)	



# Questions and Contact Information



Jenny Kramer

Bike/Ped Coordinator

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785-296-5186