WALK BIKE ROLL KANSAS

VIRTUAL SERIES

Active Transportation Demonstration Projects 101

Lessons from Manhattan, KS

Wednesday, July 26, 2 PM

Speakers:

Jared Tremblay , *Planning Manager, Flint Hills MPO*

Gregory Newmark, *Research Associate Professor of Civil Engineering, Kansas State University*

Kansas Department of Transportation

Kansas Active Transportation Enhancement

Webinar Housekeeping

- This meeting is being **recorded**
- Turn on closed captions from the menu bar with the CC icon. Click and drag captions to preferred location on screen.
- Submit questions via the **Q & A function or chat**
- We'll send a follow-up email within the next week with **link to recording and Q & A transcript**
- For more information on the Kansas Active Transportation Enhancement (KATE), access to webinar recordings and other resources, and to sign-up for future sessions, visit: https://www.ksdot.gov/KansasATP.asp
- You can also register for the AT Summit on the KATE page or at www.walkbikerollks.com

KDOT Staff Introductions

Matt Messina,

Chief of Multimodal Transportation

Jenny Kramer,

Active Transportation Manager

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Walk Bike Roll Virtual Series

2:00 PM, 4th Wednesdays (usually!)	
August 23rd	Active Transportation Planning Toolkit
★ **September 20-22nd**	**In-Person Active Transportation Summit, McPherson**
October 25th	Increasing Safety for Pedestrians
December 13th	Mobility and Access for All

www.walkbikerollks.com

Guest Speakers

Jared Tremblay

Planning Manager

Flint Hills MPO

Gregory Newmark

Research Associate Professor of Civil Engineering

Kansas State University

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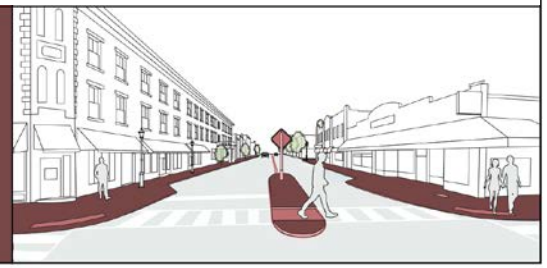
The BIG Issue

Demonstration Projects

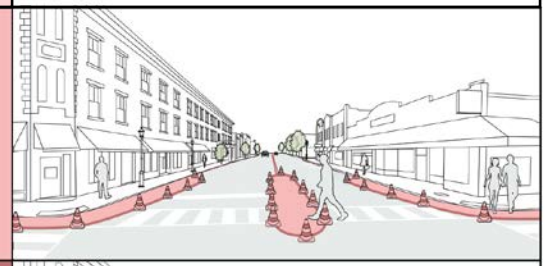
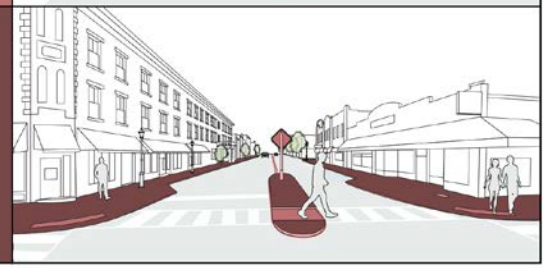
Project Type	Planning Document	Project identified & prioritized (CIP) ATPs, SRTS Plans, Bike-Ped Master Plans, etc.
Project Type Materials Purpose Advantages Disadvantages	**Final Construction** *5 years - 50 years $$$* High-cost permanent materials (concrete) Permanently install roadway improvement projects Permanent, investment in the community, aesthetics High cost, high maintenance	

Today

Gap!!!

2+ Years (often 5-10 years)

Iterative Design Process

Project Type	Planning Document	Project identified & prioritized (CIP) ATPs, SRTS Plans, Bike-Ped Master Plans, etc.
Project Type Materials Purpose Advantages Disadvantages	**Demonstration** *1 day - 1 month $* Low-cost, low durability, easy to install materials (cones & paint) Demonstrate potential projects, get community feedback Flexible, temporary, low-cost, allows for data collection Not permanent	
Project Type Materials Purpose Advantages Disadvantages	**Semi-Permanent** *1 month - 1 year $$* Relatively low cost and semi-durable materials (delineations) Improve roadway safety in a quick and inexpensive manner Low-cost, quick installation, condensed project delivery On-going maintenance, not aesthetically pleasing	
Project Type Materials Purpose Advantages Disadvantages	**Final Construction** *5 years - 50 years $$$* High-cost permanent materials (concrete) Permanently install roadway improvement projects Permanent, investment in the community, aesthetics High cost, high maintenance	

- Today
- Weeks
- Months
- 2+ Years

Improve safety & minimize gaps

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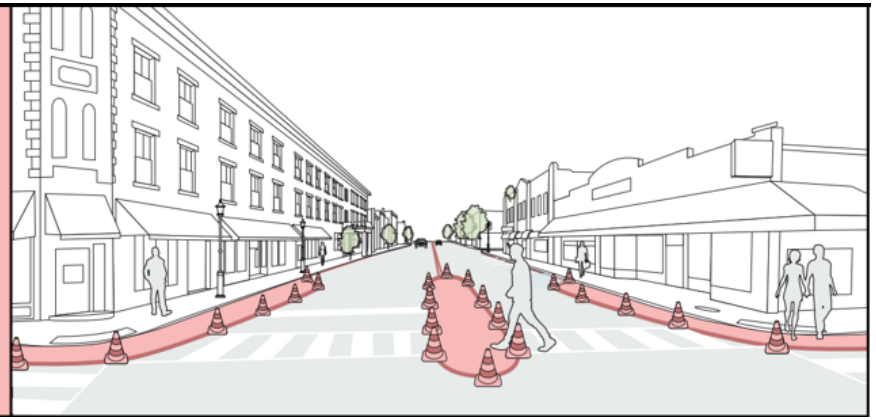
Project Type	Demonstration *1 day - 1 month $*
Materials	Low-cost, low durability, easy to install materials (cones & paint)
Purpose	Demonstrate potential projects, get community feedback
Advantages	Flexible, temporary, low-cost, allows for data collection
Disadvantages	Not permanent



- Low-Cost
- Quick Install
- Temporary
- Test ideas

Anyone can do this.
We have step-by-step instructions

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Why Demonstration Projects

Quick & Cheap	Low cost way to test ideas, quickly, & temporarily
Increase public awareness	Public experience the project (walk, bike, or car) Not just a sketch, line item, or dot on a map Not a plan on a webpage or a meeting at city hall.
Increase in public input	Experience & interaction = opinions (positive + negative).
Grant application quality improved	The project has been tested & vetted. Grantors know what they are funding will work.
Foot in the door	Low cost & temporary = openness from local govt depts. Once the demo works once, you can push for more.

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U.S. Department of Transportation
Federal Highway Administration

Safe Transportation for Every Pedestrian (STEP)

Why?

Bike & Ped fatalities make up proportionally high percentage of roadway fatalities (17% in 2018)

What does STEP do?

Pushes proven countermeasures

https://highways.dot.gov/safety/pedestrian-bicyclist/step

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U.S. Department of Transportation
Federal Highway Administration

Safe Transportation for Every Pedestrian (STEP)

Countermeasures	Demo Project Option	Demo Cost
Road Diets	Yes	High
PHBs	No	
RRFBs	No	
Raised Crosswalks	Yes	High
LPIs	No	
Ped Islands	Yes	Low
Xing Visibility	Yes	Low

https://highways.dot.gov/safety/pedestrian-bicyclist/step

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We had a Solution…

Did we have a local problem to apply it to?

Project Type	Planning Document	Project identified & prioritized (CIP)
		ATPs, SRTS Plans, Bike-Ped Master Plans, etc.

Locations	STEP Countermeasure
X	Ped Islands
Y	Xing Visibility
Z	Ped Islands

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			Demonstration Projects				Semi Permanent Projects				Permanent Projects			
#	City	Location	Type	Year	Funding	Data Collection	Type	Year	Funding	Data Collection	Type	Year	Funding	Data Collection
1	MHK	Fremont & N MHK	Curb Extensions	2019	BPSP						Curb Extensions	2023	FTA 5309	
2	MHK	14th & Leavenworth	Curb Extensions	2019	BPSP									
3	MHK	9th & Yuma	Curb Extensions	2019	BPSP									
4	MHK	Pierre & Juliette	Curb Extensions	2017	MCS		Curb Extensions	2021	AARP	Tubes: Pre & During	Curb Extensions	2024	KDOT TA	
5	MHK	Hudson Trail @ Englewood	Curb Extensions	2019	BPSP		Ped Island	2021	AARP	Tubes: Pre & During				
6	MHK	Hudson Trail @ Londondery	Ped Island	2019	BPSP		Ped Island	2021	AARP	Tubes: Pre & During				
7	MHK	Hudson Trail @ Churchill	Curb Extensions	2019	BPSP									
8	MHK	Butterfield & Walters	Curb Extensions	2019	BPSP									
9	MHK	4th & Houston	Curb Extensions	2019	BPSP						Curb Extensions	2023	City Funds	
10	MHK	City Park Road	Traffic Diverter	2019	BPSP									
11	MHK	City Park Road	Closed Road	2019	BPSP									
12	JC	7th & Jefferson	Curb Extensions + Ped Island	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
13	JC	7th & Adams	Curb Extensions	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
14	JC	7th & Jackson	Road Diet + diverters	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
15	JC	7th & Clay	Traffic Circle	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
16	JC	8th @ Dixon Center	Chicane + Bus Lane	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
17	JC	8th @ Bicentennial Manor	Curb Extensions	2019	ATP						Curb Extensions + Ped Island	2023	KDOT TA	
18	JC	Caroline & St. Mary's					Curb Extensions	2021	STIC	Tubes: Pre & During				
19	JC	Ash & Jackson					Curb Extensions + Ped Islands	2021	STIC	Radar: Pre & During				
20	JC	Ash & Madison					Ped Islands	2021	STIC	Radar: Pre & During				
21	JC	Westwood & Eisenhower					Curb Extensions	2021	STIC	Tubes: Pre & During				
22	JC	15th & Jefferson					Curb Extensions	2021	STIC	Tubes: Pre only				
23	JC	Hickory @ Eisenhower Elem	Curb Extension + Right-In Right-Outs	2022	BCBS Pathways		Curb Extension + Right-In Right-Outs	2023	USD/PTO/City					
24	StG	1st St (Downtown)	Curb Extensions	2021	City of StG						Curb Extensions & Sidewalk repair	2023/24	KDOT TA	
25	PT	Green Valley Rd @ Nature	Ped Island	2021	PT County						RRFBs	2022	PT County	
26	PT	Green Valley Rd @ Eagles Landing	Median Extension (Ped Island)	2021	PT County									
27	PT	Green Valley Rd @ MJ Dr	Ped Island	2021	PT County						RRFBs	2022	PT County	
28	PT	Green Valley Rd @ Kinzie Jo	Median Extension (Ped Island)	2021	PT County									
29	Neodesha	8th St @ Heller Elem.	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
30	Neodesha	8th St @ High School	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
31	Neodesha	Granby Ave @ North Lawn Elem	Curb Extension	2022	KDHE CDRR									
32	Emporia	Washington @ 12th	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
33	Emporia	18th Ave @ High School	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
34	Emporia	24th Ave @ Ridge	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
35	Emporia	Graphic Arts Rd @ Mt Vernon Ter	Ped Island	2022	KDHE CDRR	Tubes: Pre & During								
36	Beloit	S Mill St	Streetscape	2022	KDHE CDRR									
37	Ogden	Riley Ave @ Park St					Curb Extensions	2023	MPO loaned materials					
38	Hoxie	US-24 & 14th St	Ped Island	2023	KDHE CDRR									
39	Johnson City	Main & Sherman	Curb Extensions	2023	KDHE CDRR									

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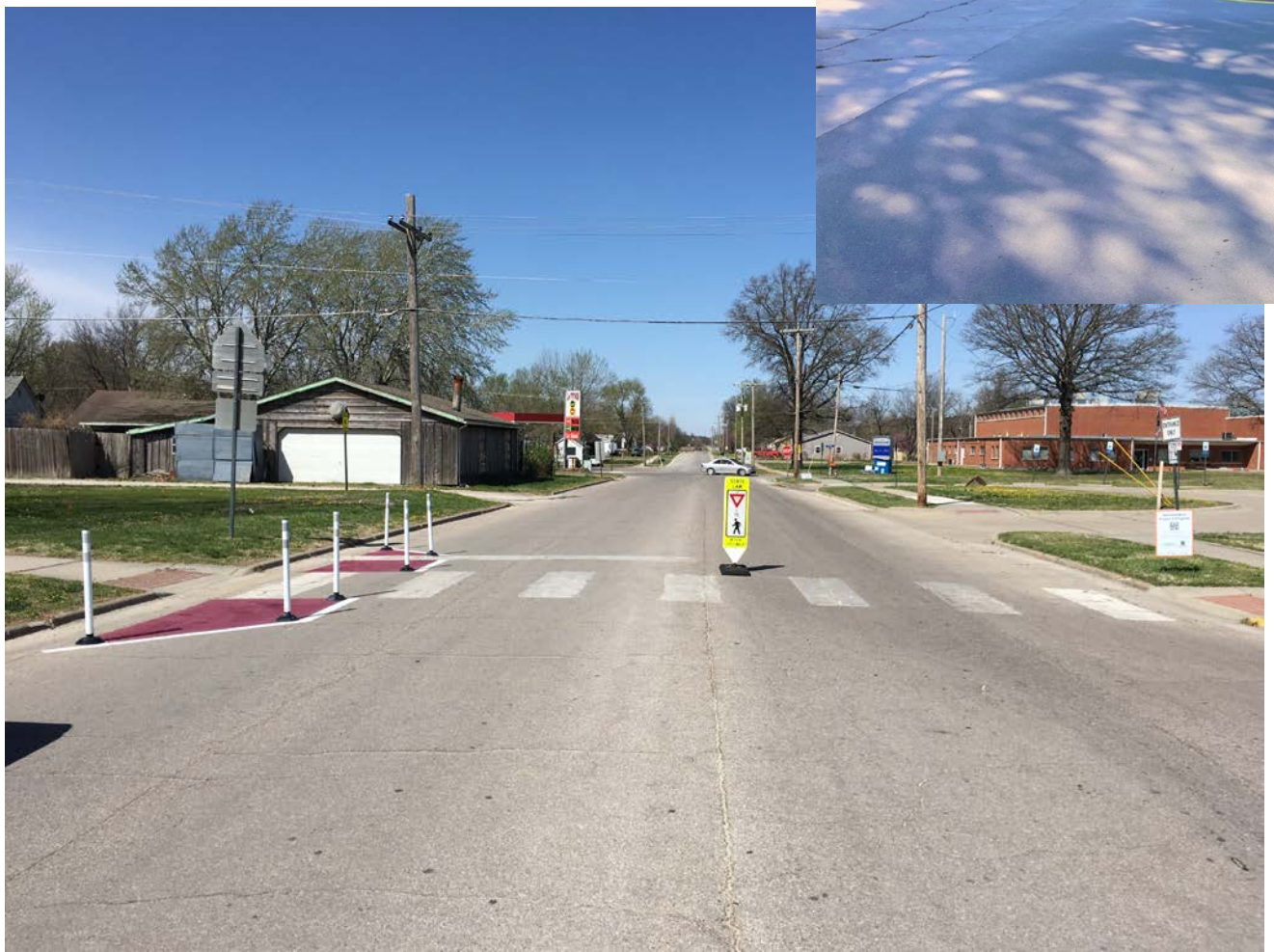

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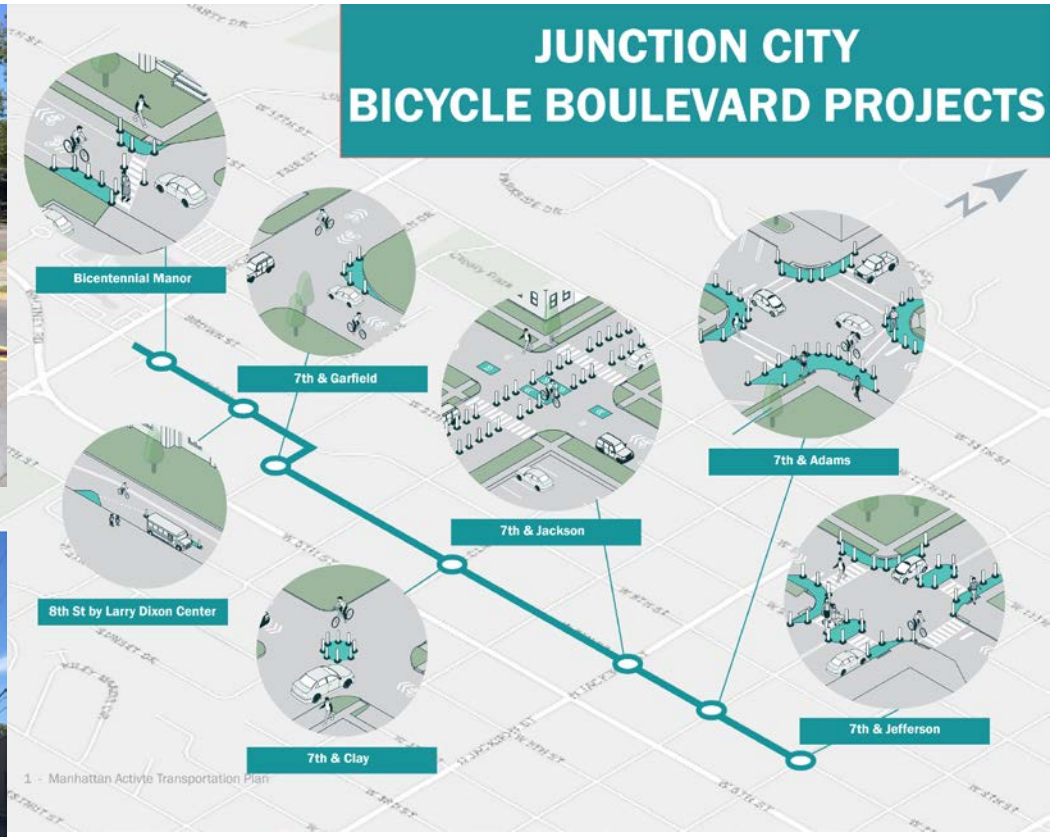

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Resources for YOU!

https://www.flinthillsmpo.org/demoprojects

DEMONSTRATION PROJECTS

PROJECT EXAMPLES

The Flint Hills MPO has been utilizing demonstration projects as public outreach tools for several years. The following documents and links are intended to summarize the work we have done and the lessons we have learned. Scroll down further to view the project gallery.

DEMONSTRATION PROJECT LOOK BOOK

ITERATIVE PROJECT DELIVERY

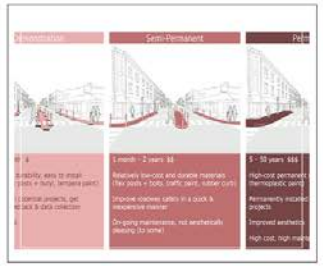

PHOTO GALLERY

DEMONSTRATION Q&A

PROJECT HOW TOS

The Flint Hills MPO has developed materials to help you create your own demonstration projects. From location selection, to materials, and installation guidance the links below offer you easy-to-follow help.

DEMONSTRATION TIPS & TRCKS

BUILD YOUR OWN DEMO PROJECT

WATCH A PROJECT INSTALLATION

WATCH A PROJECT INSTALLATION

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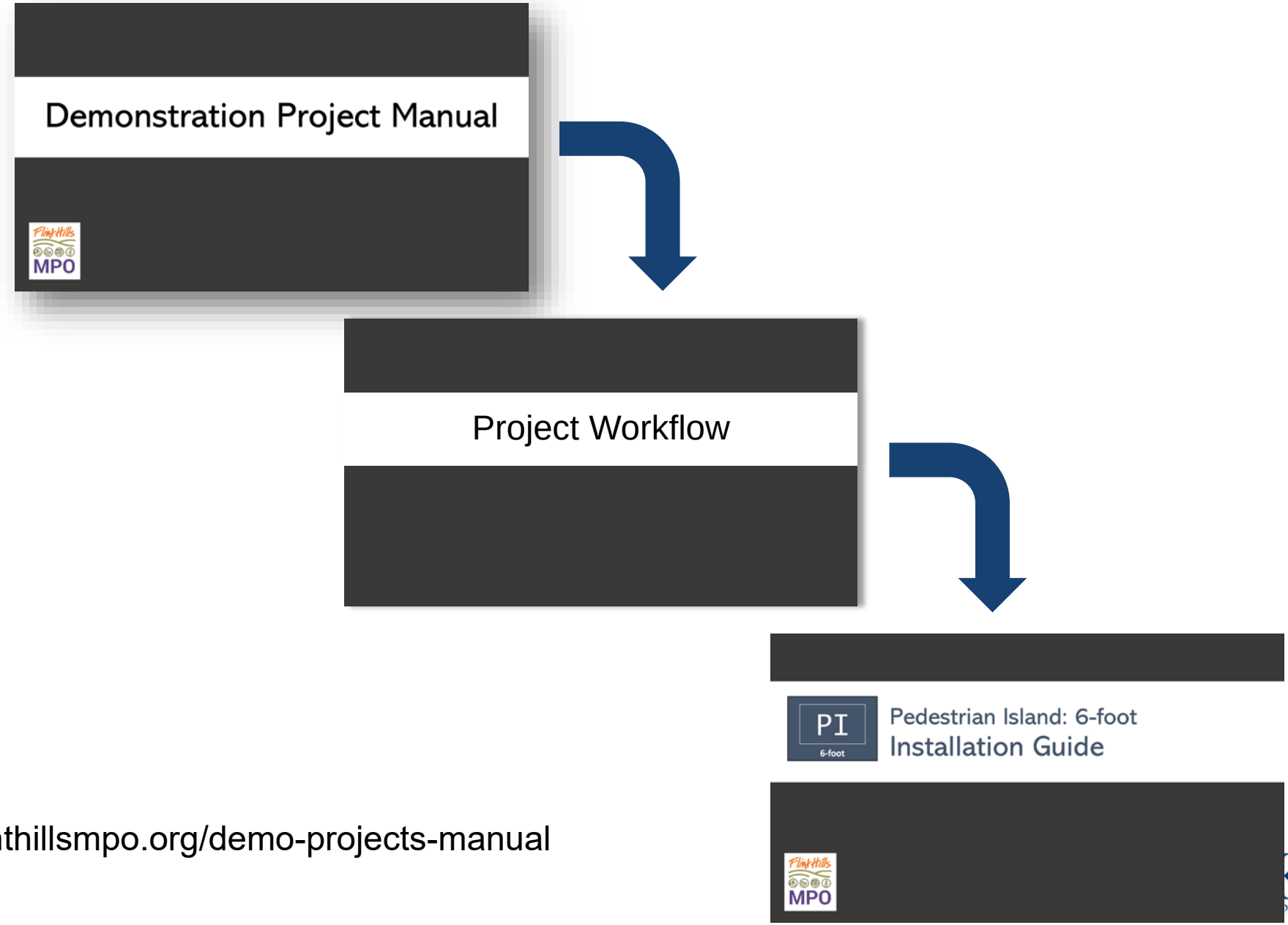
Resources for YOU!



https://www.flinthillsmpo.org/demo-projects-manual

Demonstration Project Manual

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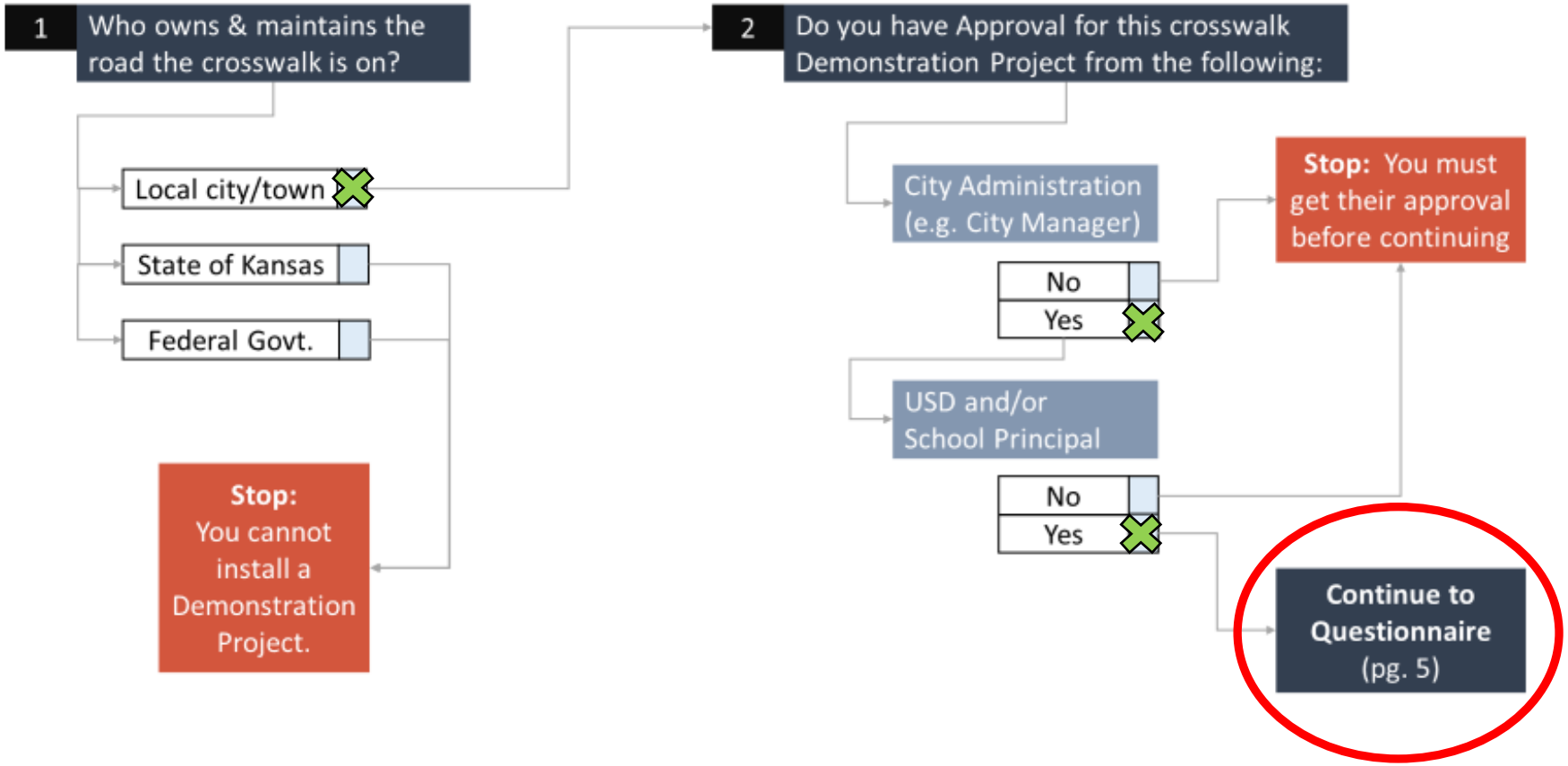
Before you Start



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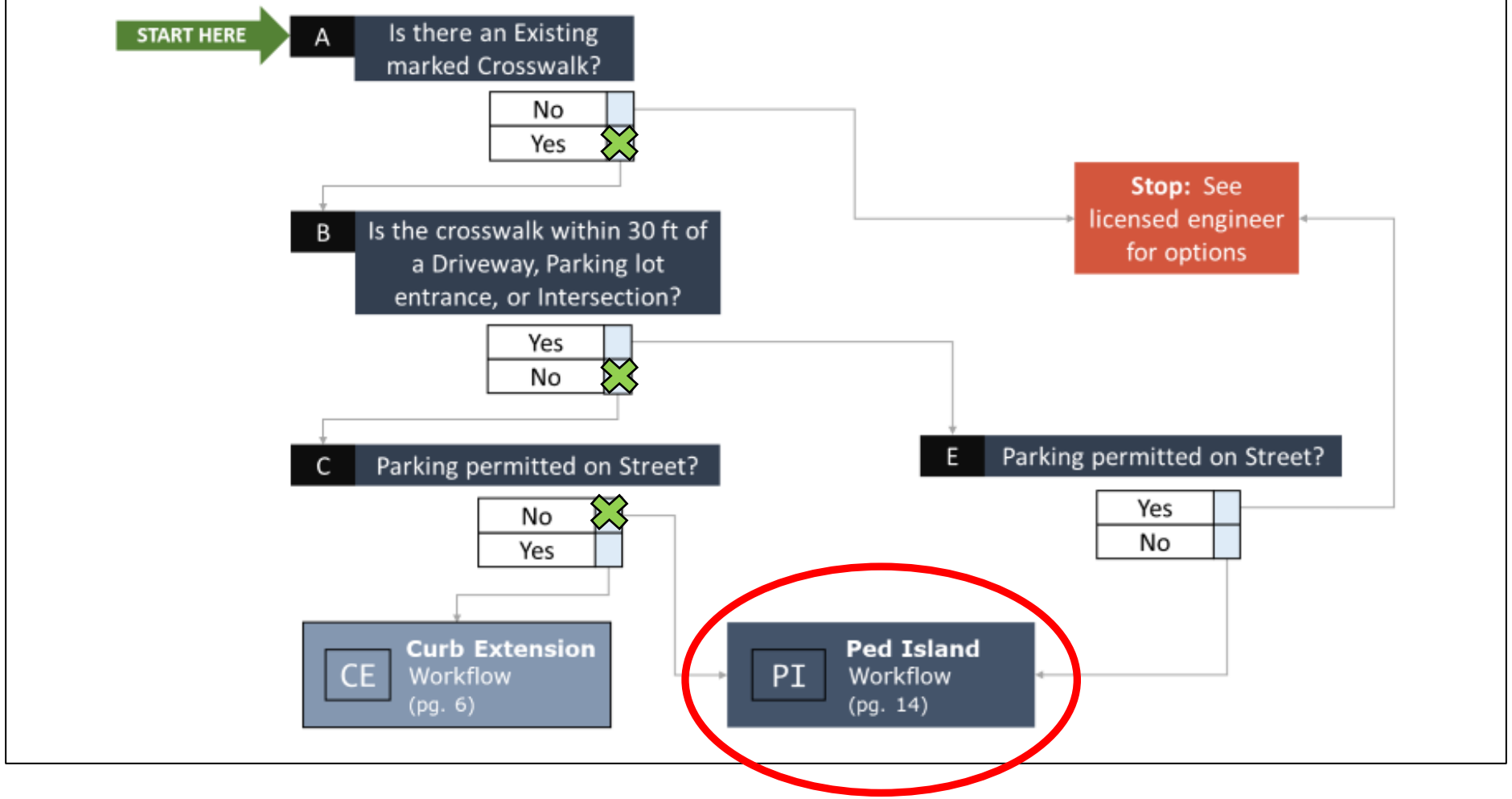
Questionnaire



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PI

Pedestrian Island Workflow

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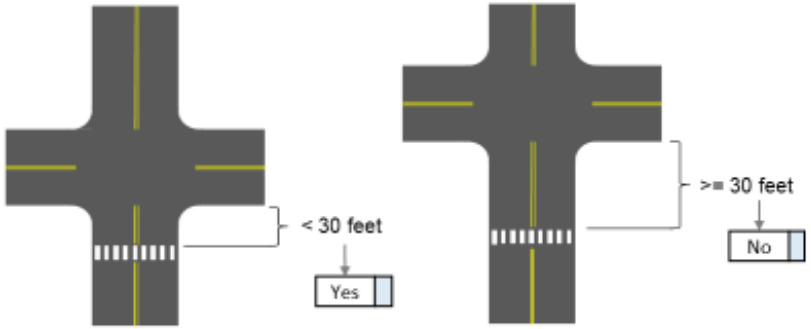
PI Step 1.1

1.1 Is the crosswalk less than 30 feet from a driveway, parking lot entrance, or intersection?

- **No** ✕ → Proceed to **Step 1.2** (pg. 18)
- **Yes** → Proceed to **Step 2.1: Curb Cuts** (pg. 19)

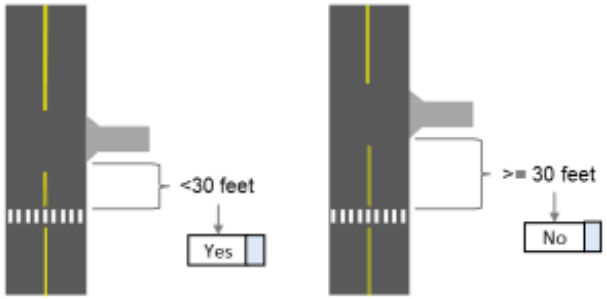
How to measure Intersection

Measure from the crosswalk to the curb of the cross street.



How to measure Driveway or parking lot entrance

Measure from the crosswalk to the driveway or entrance.



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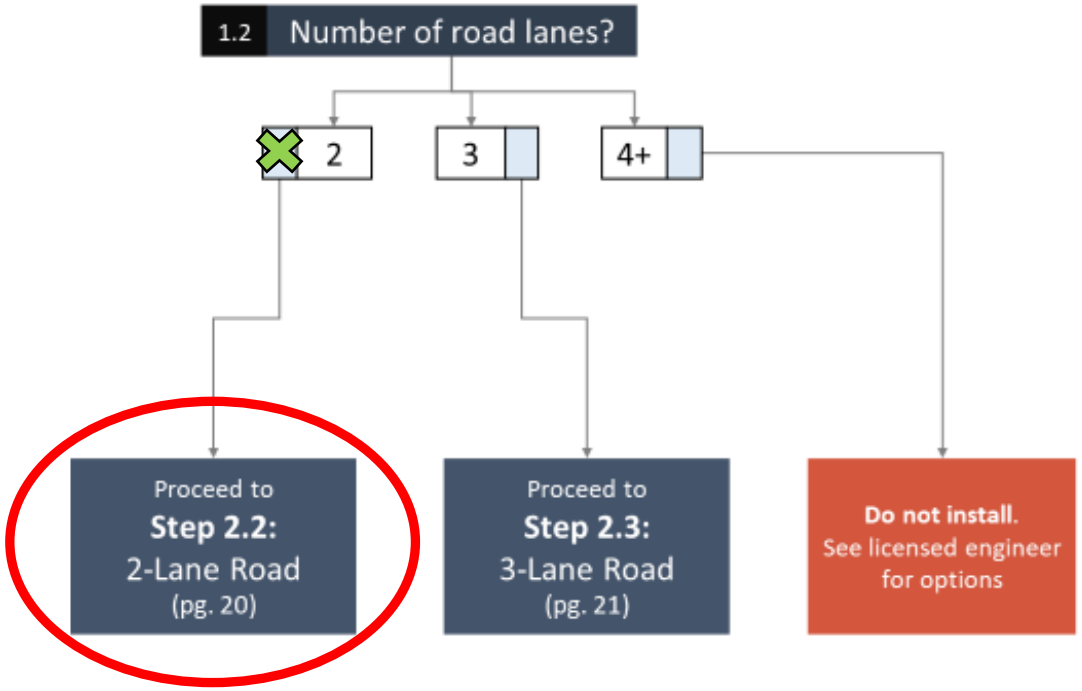
PI Step 1.2



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PI

Step 2.2: 2-Lane Road

2.2a Curbed road?

- Yes ✕
- No

2.2b Measure road width (feet): BOC to BOC

BOC – Back Of Curb

Road width (feet) = **31’ 2”**

2.2c Measure road width (feet): No Curb

Edge of pavement to edge of pavement

Road width (feet) =

Proceed to **Step 3.1** 2-Lane Road Layouts (pg. 22)

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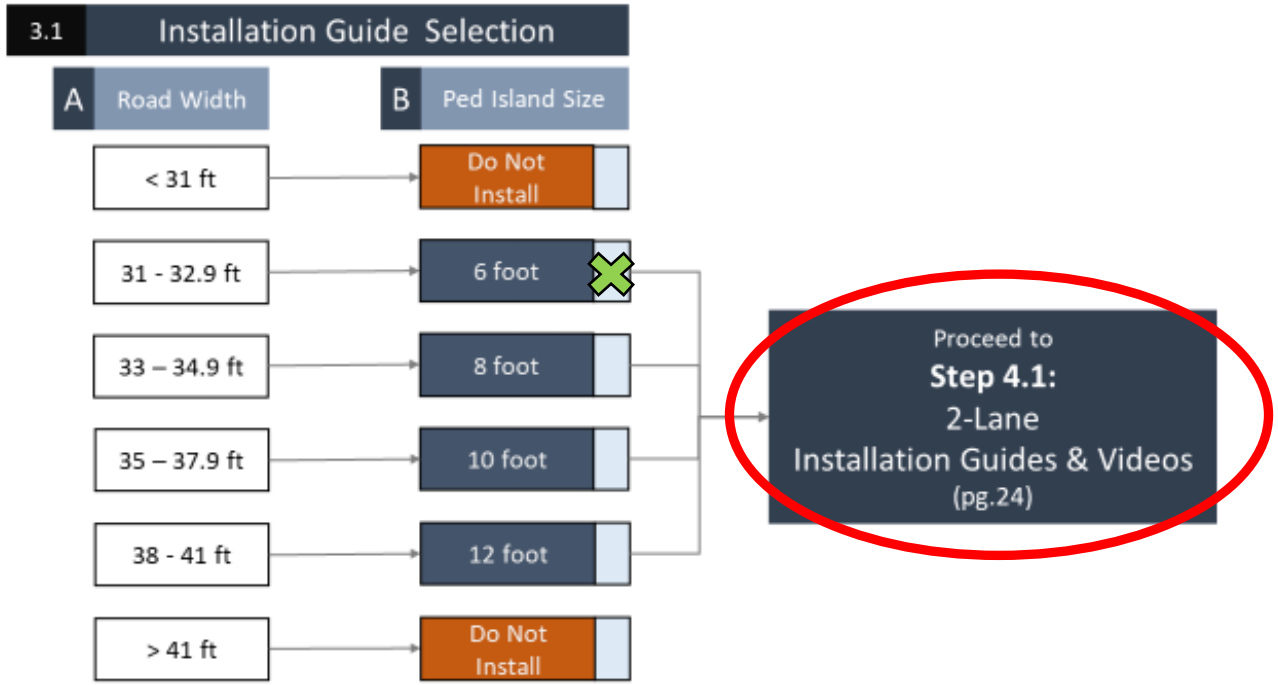
PI Step 3.1: 2-Lane Road Layouts

How To Use

A Using the road width from **2.2b** or **2.2c**, find the matching row in the **Road Width** column

B Select the associated **Ped Island Size**



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PI Step 4.1: 2-Lane Installation Guides & Videos

Open the following links to access the correct Installation Guide files and watch the How-To video in the link.

Ped Island Size (from 2.2b)	Installation Guide	Link to Documents & How-to Video
6 foot	PI: 6ft	www.FlintHillsMPO.org/pi-6ft
8 foot	PI: 8ft	www.FlintHillsMPO.org/pi-8ft
10 foot	PI: 10ft	www.FlintHillsMPO.org/pi-10ft
12 foot	PI: 12ft	www.FlintHillsMPO.org/pi-12ft

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Pedestrian Island: 6-foot
Installation Guide

Flint Hills MPO

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PI: 6ft Materials Needed & Ordering

Paint

Item	# Needed	Details	Item info.
White Tempera Paint	2	16-ounce bottle	• Art-Time Washable Tempera Paint • Available in store or online 
Yellow Tempera Paint	2	16-ounce bottle	
Red Tempera Paint	2	16-ounce bottle	
Black Tempera Paint	1	16-ounce bottle	
Corn Starch	1	16-ounce bottle	• Argo or generic brand 

Delineator Posts

Item	# Needed	Details	Company to Order from: Item #	Phone Number
Flexible Delineators w/ Bases	10	36" Flexible Post with base (Yellow)	Uline: H-7959	800-295-5510
Butyl Pads	5	8" Diam. Butyl Adhesive Pad	Uline: H-4467	800-295-5510

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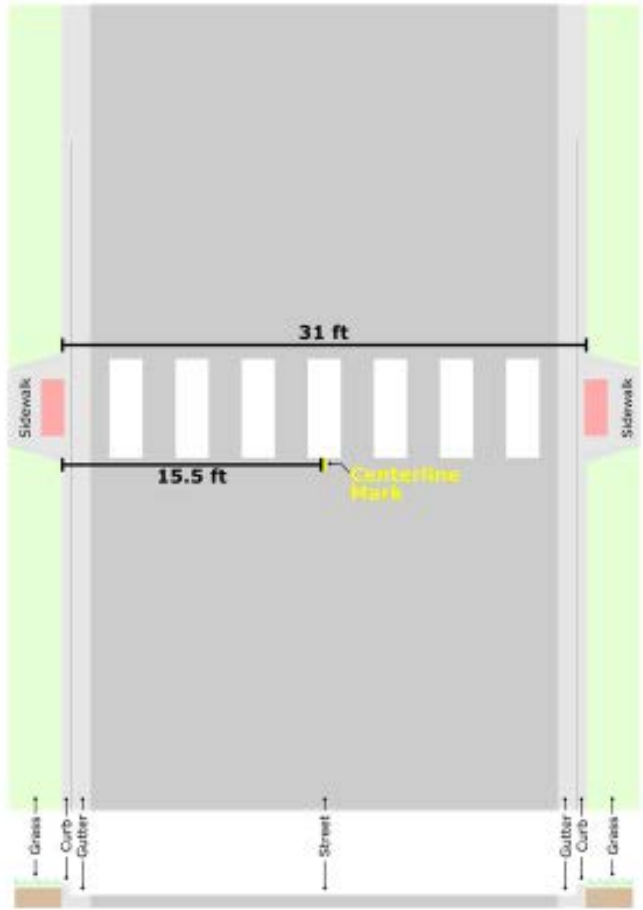
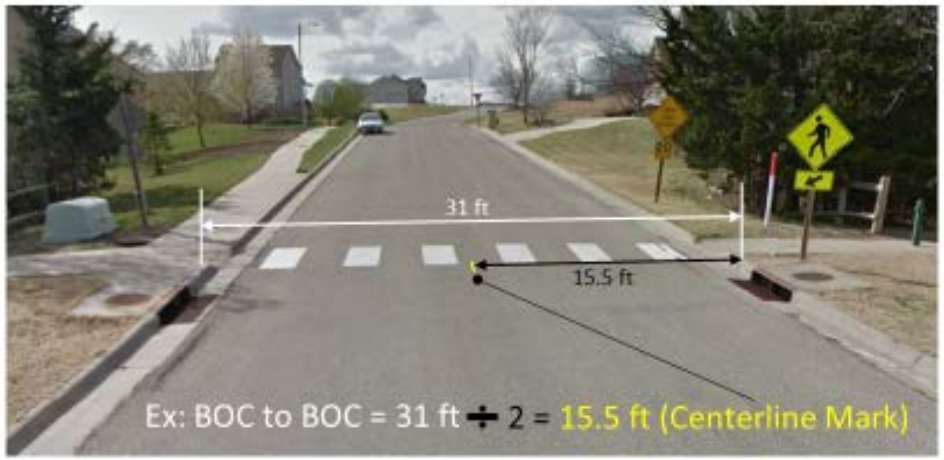
PI: 6ft Step 1: Measure Centerline



- Measure Back of Curb (BOC) to BOC
- Divide this number by 2, which equals the distance from BOC to Centerline
- Along the edge of the crosswalk, measure from BOC to Centerline and mark the Centerline



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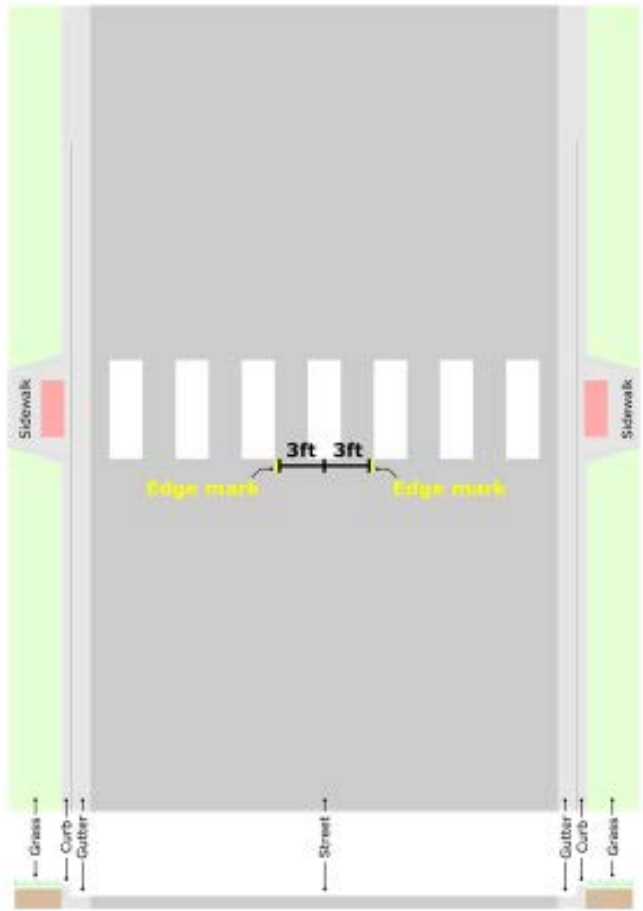
PI: 6ft Step 2: Mark Edge of Ped Island



- From the Centerline, measure along the crosswalk 3 feet in each direction
- Mark each location; these will be the Edge Marks (outside edge of the ped island)

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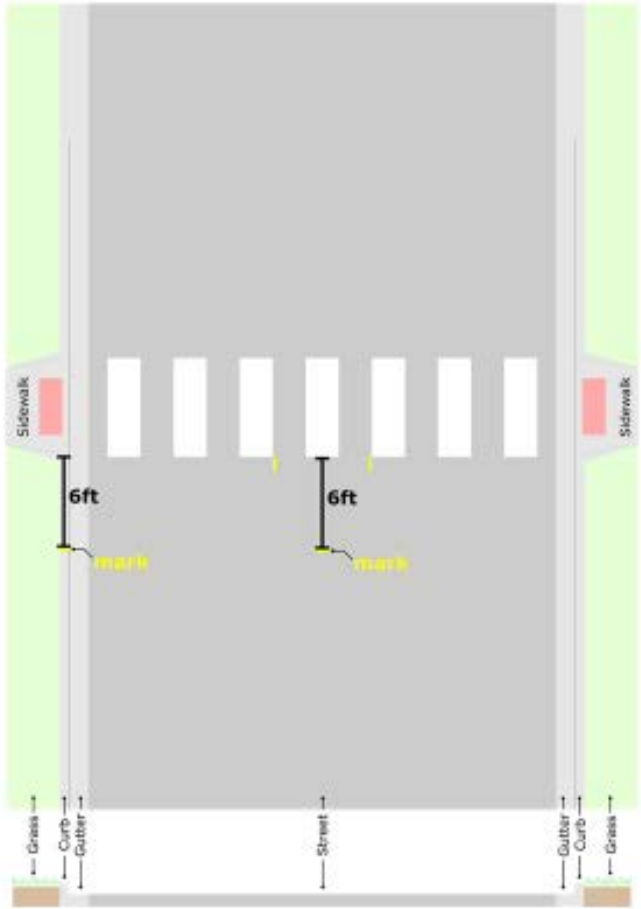
PI: 6ft Step 3: Measure



- From the Centerline Mark, measure away from the crosswalk (perpendicular) **6 feet**
- Mark the location with chalk
- On the curb, where it meets the crosswalk, measure along the curb (away from the crosswalk) **6 feet**
- Mark the location with chalk

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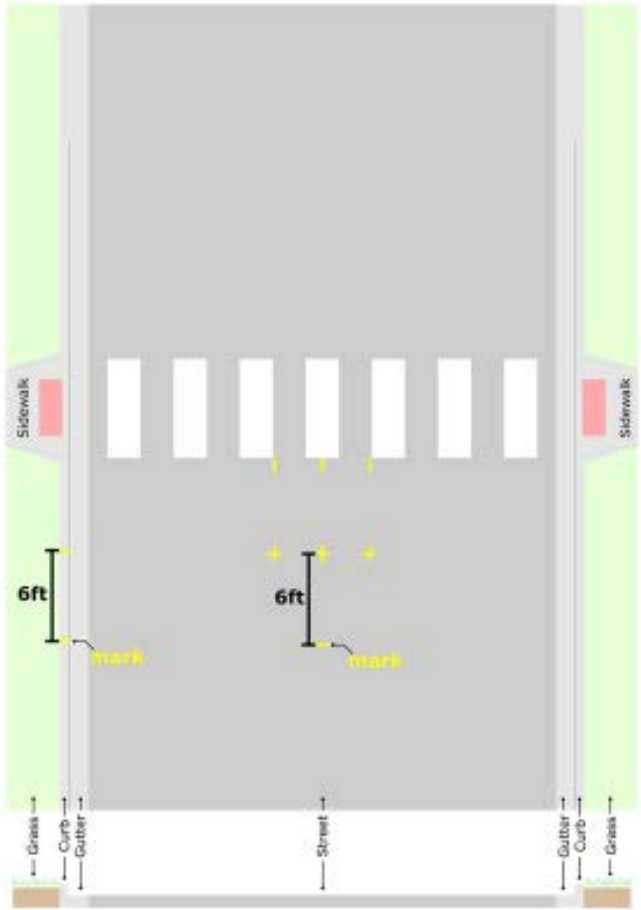
PI: 6ft Step 7: Measure the Point of Ped Island



- From the Centerline mark in Step 4, measure away from the crosswalk (perpendicular) **6 feet**
- Mark the location with chalk

- Along the curb, from the previous mark in Step 3, measure along the curb **6 feet**
- Mark the location with chalk

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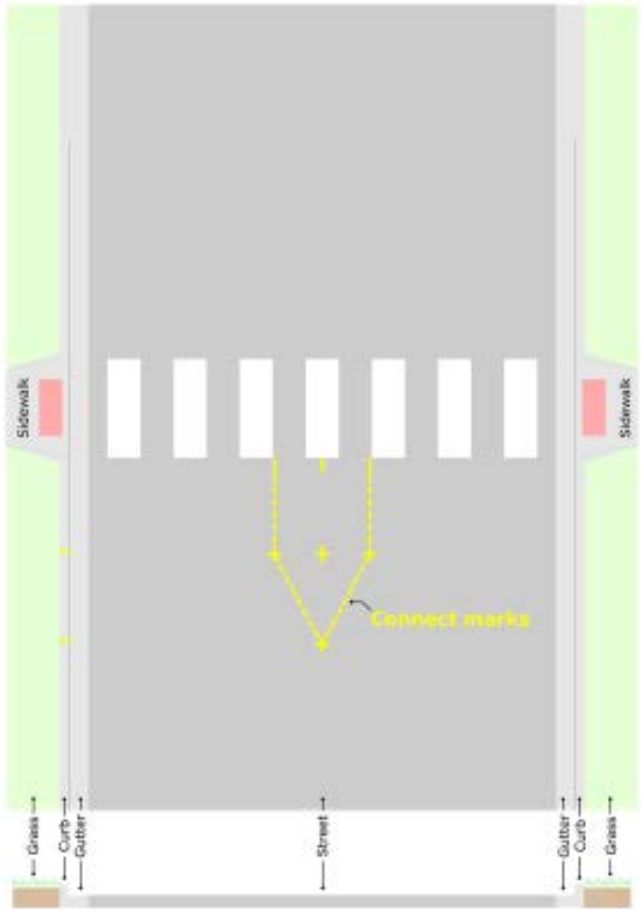
PI: 6ft Step 9: Make Chalk Outline



- Using the tape measure as a straight edge, draw a chalk line connecting the Edge Marks (these lines will be the guides for the paint striping)
- The result will be the outline for half of the pedestrian island

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PI: 6ft Striping Paint

White Striping Paint

White Tempera Paint	32 ounces (two 16-oz bottles)
Corn Starch	1 cup

Note: Paint will be thick

Pour into & mix

Sweep (to remove any dirt/debris on road)

Apply with

4-inch roller and extension handle

Yellow Striping Paint

Yellow Tempera Paint	32 ounces (two 16-oz bottles)
Corn Starch	1 cup

Note: Paint will be thick

Pour into & mix

Sweep (to remove any dirt/debris on road)

Apply with

4-inch roller and extension handle

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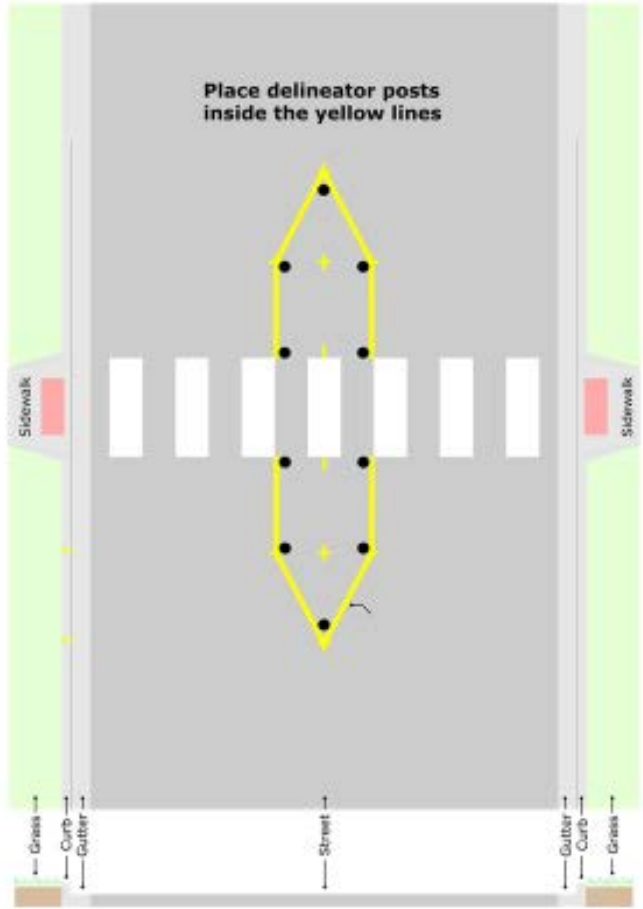
PI: 6ft Step 13: Install Delineator Posts



- Start by placing a delineator post in the center of the point at either end
- Then work your way around the island, placing a delineator every 5 feet

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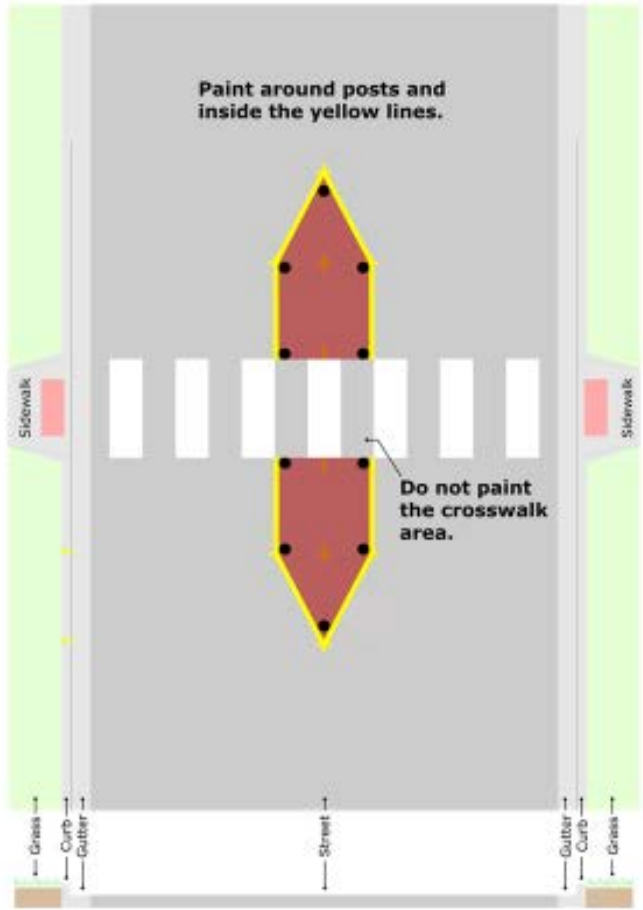
PI: 6ft Step 14: Infill Paint



Note: Use caution when painting the maroon infill paint near the striping and crosswalk. It is watery and can run.

Note: Do not paint the crosswalk area

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YouTube Installation Videos

Shows step-by-step process, with measurements

https://www.youtube.com/watch?v=YoTicE6H0e0

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Evaluation of Traffic Safety Countermeasures

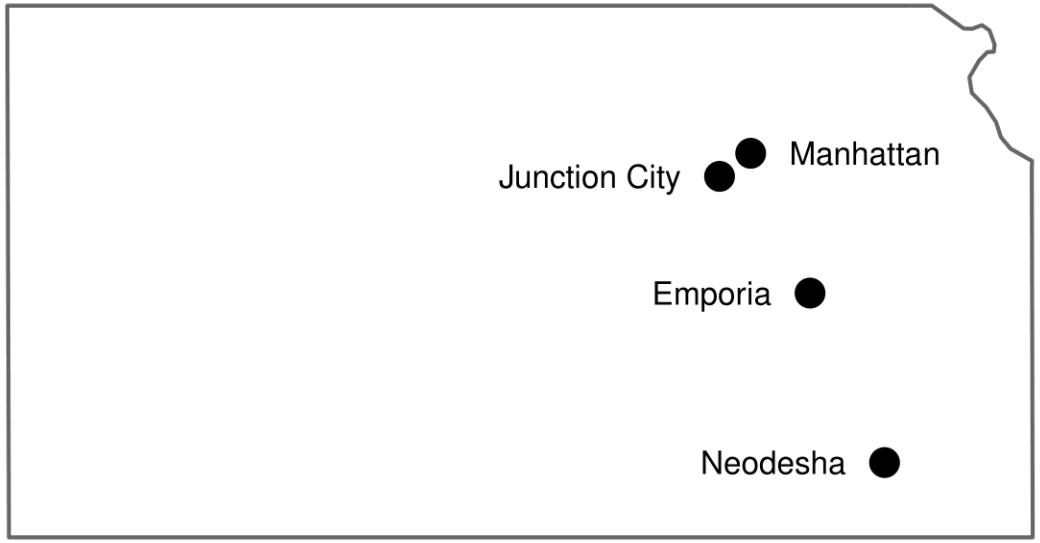
Greg Newmark

July 26, 2023

KANSAS STATE UNIVERSITY

Project Sites

- This project explored curb extensions and pedestrian islands in four Kansas towns



- Low-cost safety interventions are effective

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All Investments Should be Evaluated

- It is important to assess public projects
- Both to understand its benefit to the community and to improve practice
- Too often that step is never taken (no time, no capacity, concern about evaluating something that has already been put in place and may be problematic, etc.)
- **Evaluation needs to be a part of practice**
- **Evaluation should be straightforward**

Evaluation Can Take Many Forms

- Outcomes vs. Pre-Conditions
- Crash outcomes always need monitoring (but thankfully relatively rare)
- Easier to monitor pre-conditions, i.e. changes in:
  - Vehicle Speeds
  - Vehicle Yield Rates to Pedestrians
  - Vehicle Crossing Intrusion
  - Pedestrian/Bicycle Counts
  - User Perceptions

Vehicle Speeds

- Excellent measure of risk reduction
- Can be measured with commonly-owned traffic counting equipment (tubes, radar)
- Key Decisions:
  - Where to measure (Proximity to Intervention)
    - There may be constraints based on roadway (e.g. turning movements compromise tubes)
  - When to measure (Days, School Hours, etc.)
  - What to measure (Average, 85th, Violators)

Speed Study (Where)

Heller Elementary, Neodesha

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Speed Study (Where)

Westwood Elementary, Junction City

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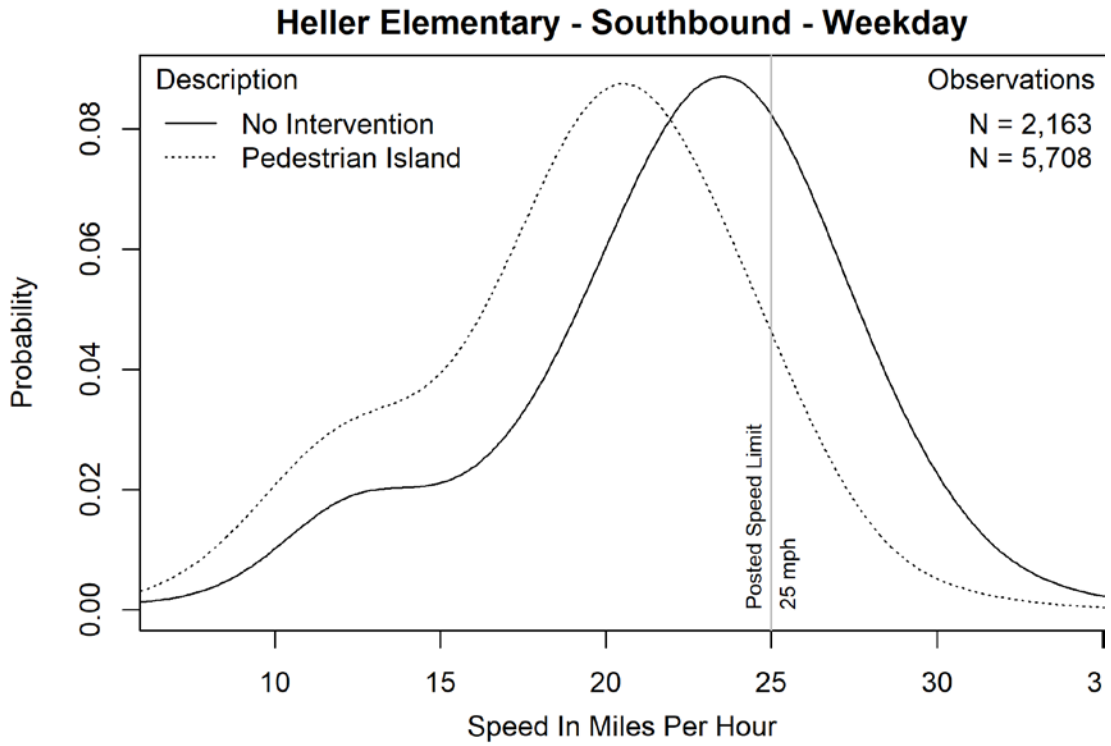
Speed Study (When)

- Need to collect pre- and post- intervention data in the same location, ideally under similar conditions (season, weather, etc.)
  - For temporary projects, it is possible to collect the pre-data immediately before installation
  - For longer projects, question of how people adapt over time (which can alter outcomes)
- At least, two full (24 hour) days during Tuesday, Wednesday, Thursday – **a week is recommended for robustness**

Speed Study (What)

- Critical raw data:
  - Vehicle (possibly even type)
  - Timestamp (Date and Time)
  - Speed
  - Lane/Direction
- Issues to consider
  - Make sure to set counter to get data you want
  - Some systems aggregate the data by hour

Standard Speed Output (What)



	Average	85th Pct	Speeders
No Intervention	22.2 mph	27 mph	25.3 %
Pedestrian Island	19.3 mph	24 mph	7.7 %
% Change	-13.1 %	-11.1 %	-69.6 %

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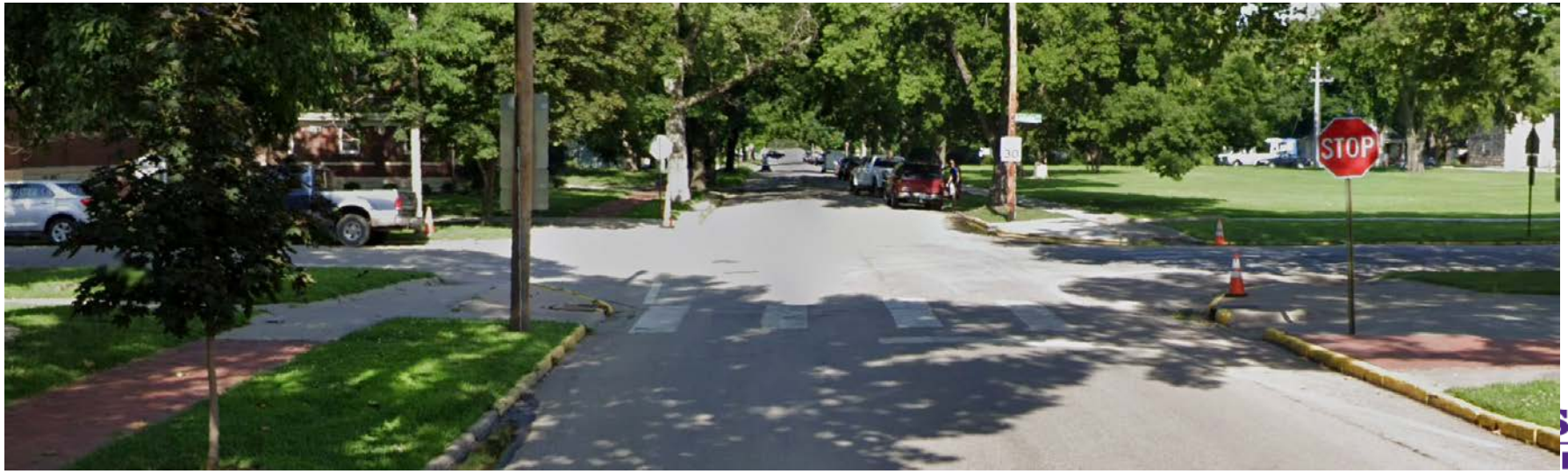
Vehicle Yield Rates

- MCS

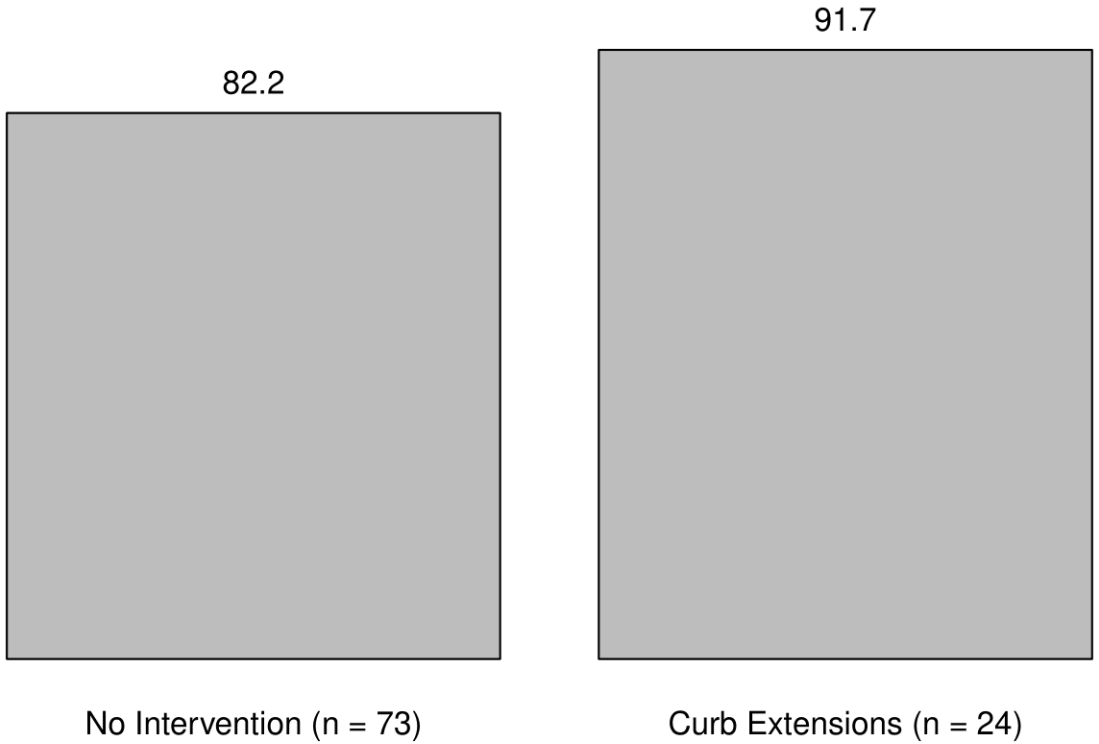
Vehicle Yield Rates

- What share of drivers yield to pedestrians?
- Requires either an observer or video
- Video monitoring increasingly available
  - FHMPO put a GoPro in an enclosure



Vehicle Yield Rates

- Takes a lot of time to capture sufficient pedestrian and car interactions
  - We had very few on a trail crossing in MHK



Yield rates improved by 11.6% at MCS

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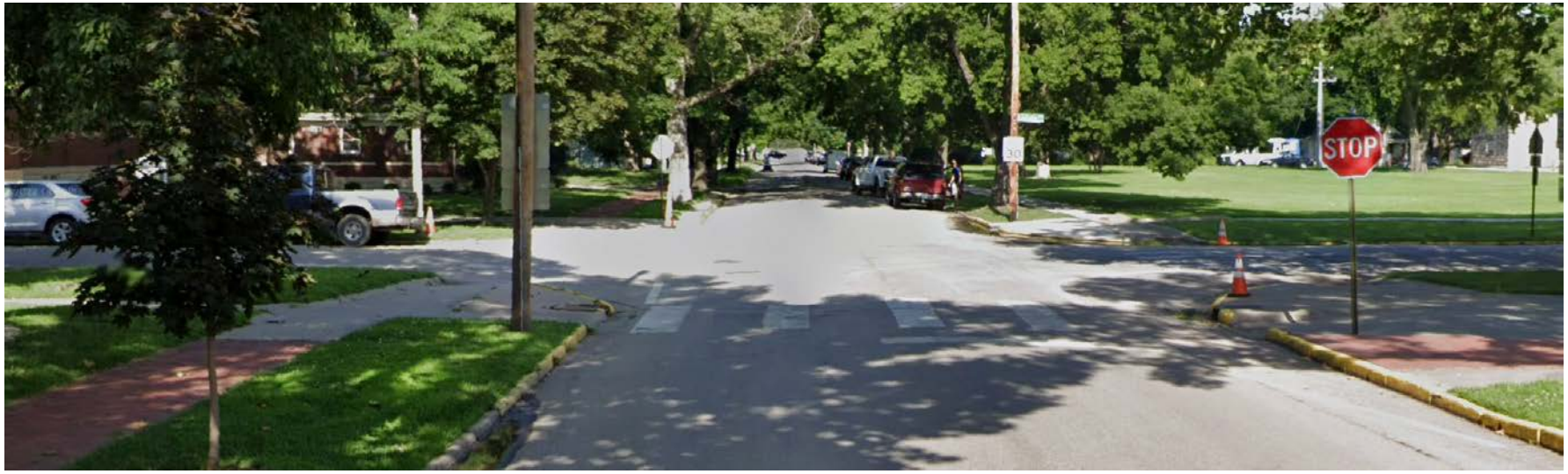
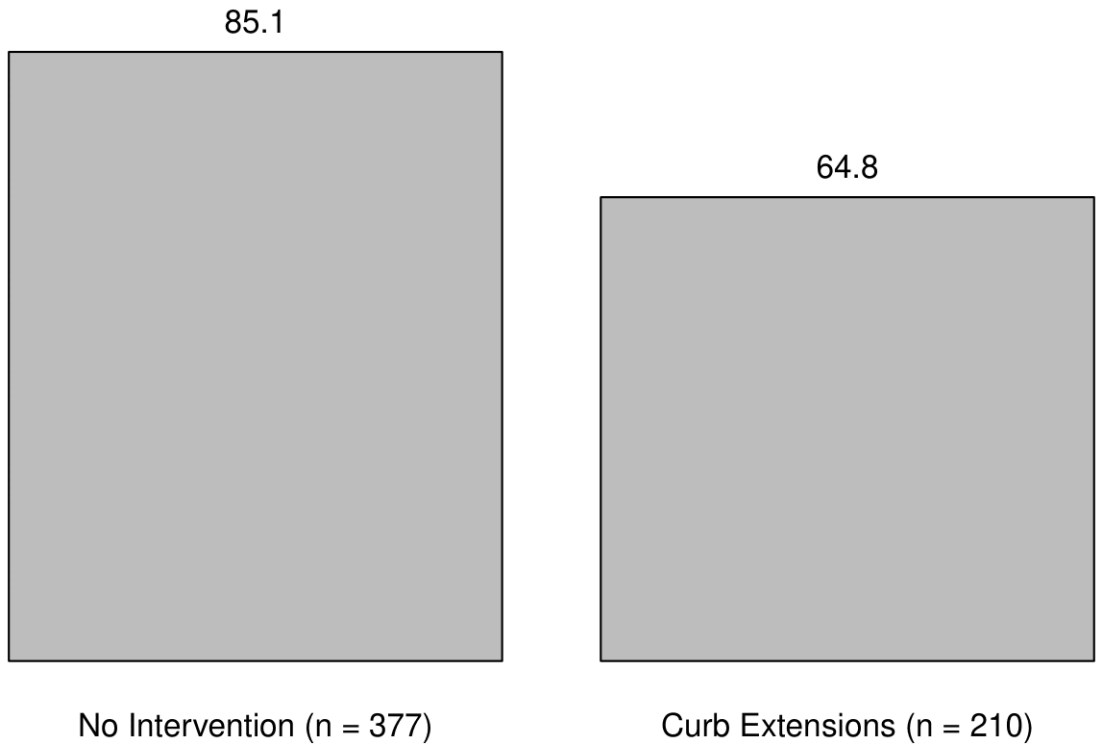
Vehicle Crossing Intrusion

- What share of vehicle stop in crosswalk?
- Video monitoring increasingly available
  - FHMPO put a GoPro in an enclosure



Vehicle Crossing Intrusion

- Less time is needed to capture data
- Intrusion rates dropped by 23.9% at MCS



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Bike/Ped Counts and Surveys

- Counts
  - Measure non-motorized use of roadways
  - Video, observation, trailcams(?)
- Surveys
  - Measure attitudes (including sense of safety)
  - Can capture demographic information
  - Many different methods of delivery
    - Mail, intercept, school activity, etc.

Make a Plan to Evaluate Projects

- Link evaluation method to project goals
- Consider availability of local resources
- Document findings to help future work
  - KDOT wants to support these efforts

Feel free to reach out! Greg Newmark

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Q&A Session

Kansas Department of Transportation

Kansas Active Transportation Enhancement

Mark your Calendars!

www.walkbikerollks.com

A limited number of travel scholarships are available for those who need financial assistance to attend the Summit. Information posted on Summit website!

September 20–22, 2023

McPherson, Kansas

Join us for a three-day, in-person event for transportation professionals, advocates, and community members from across the state. You will deepen your understanding of the **Kansas Active Transportation Plan** and build valuable partnerships as you learn how to improve walking, biking,

Summit Agenda

Wednesday, September 20

- **Welcome**: Active Transportation in Kansas
- **Keynote** (TBA)
- **Safety**: Creating Peaceful Streets - Design Guidance from the American Association of State Highway and Transportation Officials (AASHTO)
- **Equity**: Mobility Justice – The Role of Policy in Building Equitable Transportation System
- **Community Health and Vibrancy**: Vibrant People-Focused Communities
- **Social Activity** (TBA)

Thursday, September 21

- **Plenary Session**: Funding Active Transportation
- **Culture Shift and Education**: Normalizing Walking, Biking, and Rolling for Transportation
- **Mobile Workshops/Special Interest Small Groups**
- **Mobility**: Reconnecting Communities through Active Transportation
- **System Longevity**: Operations and Maintenance Networks that Work 24/7/365
- **Mobile Workshops/Special Interest Small Groups**

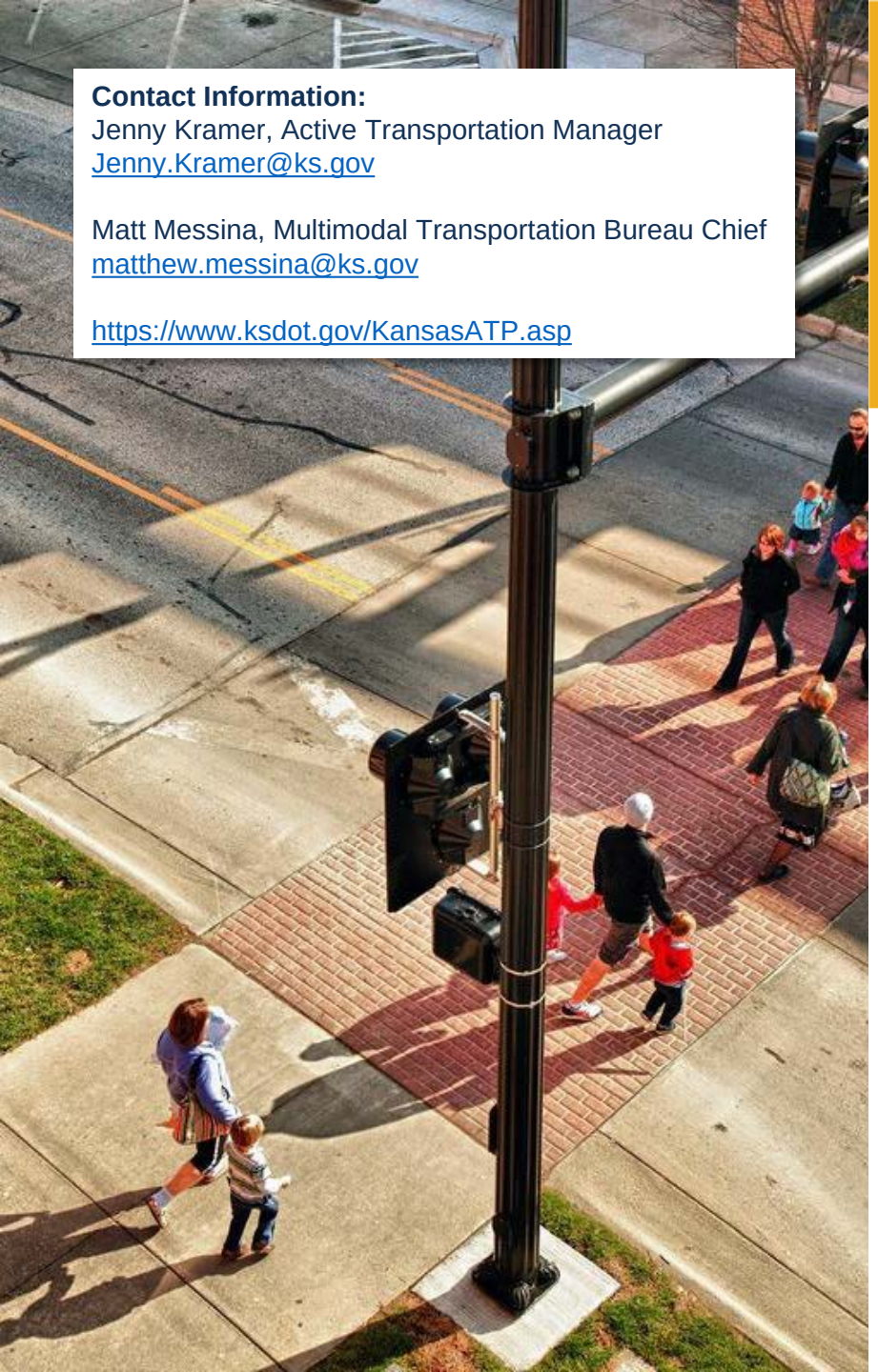
Friday, September 23

- **Safe Routes to School (SRTS) Community Engagement Project** (Offsite)
- **SRTS Panel**: Kansas Department of Transportation (KDOT) Resources to Support Safe Routes to School + Meet the New KDOT SRTS Coordinator
- **Panel on Kansas SRTS Successes**

www.walkbikerollks.com

Kansas Department of Transportation

Kansas Active Transportation Enhancement



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https://www.ksdot.gov/KansasATP.asp

WALK BIKE ROLL KANSAS

VIRTUAL SERIES

WALK BIKE ROLL KANSAS ACTIVE TRANSPORTATION SUMMIT

Save the Date: September 20–22, 2023

Thank you!

Virtual Walk Bike Roll Virtual Series

Next Session: August 23 at 2PM

Tools and Resources Spotlight: Active Transportation Planning Toolkit

https://www.ksdot.gov/KansasATP.asp

Walk Bike Roll Active Transportation Summit

September 20-22, 2023 **www.walkbikerollks.com**

Kansas Department of Transportation

Kansas Active Transportation Enhancement