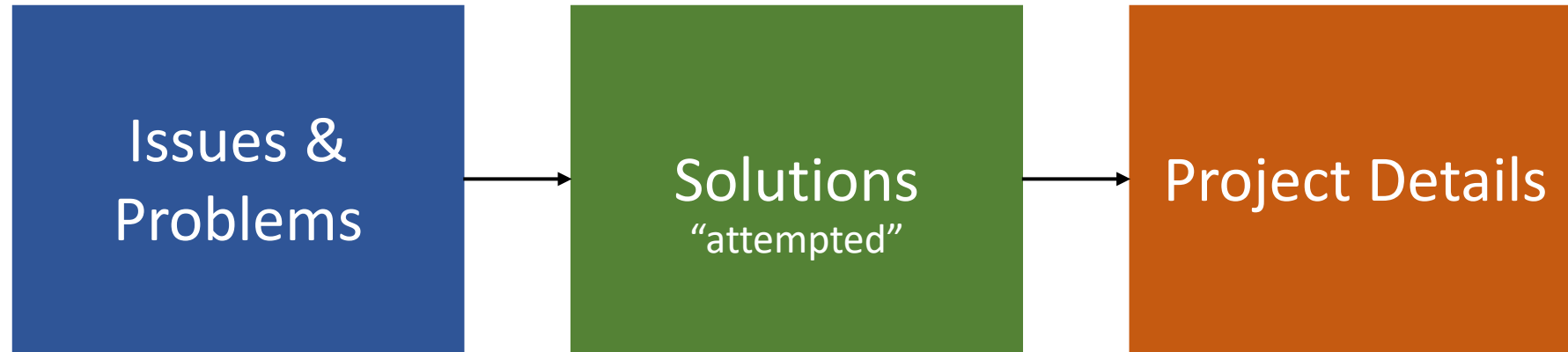
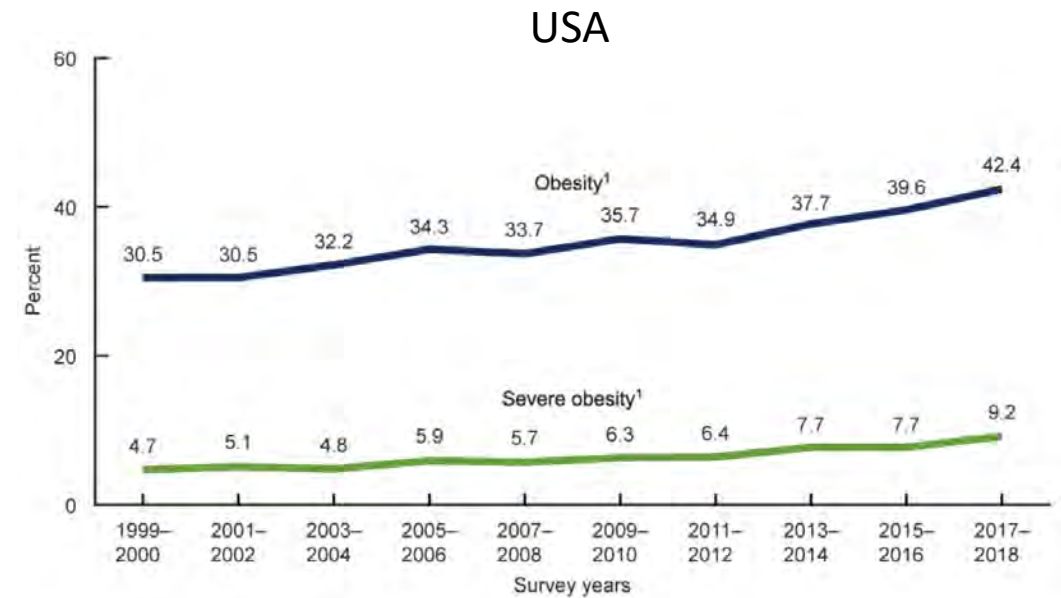
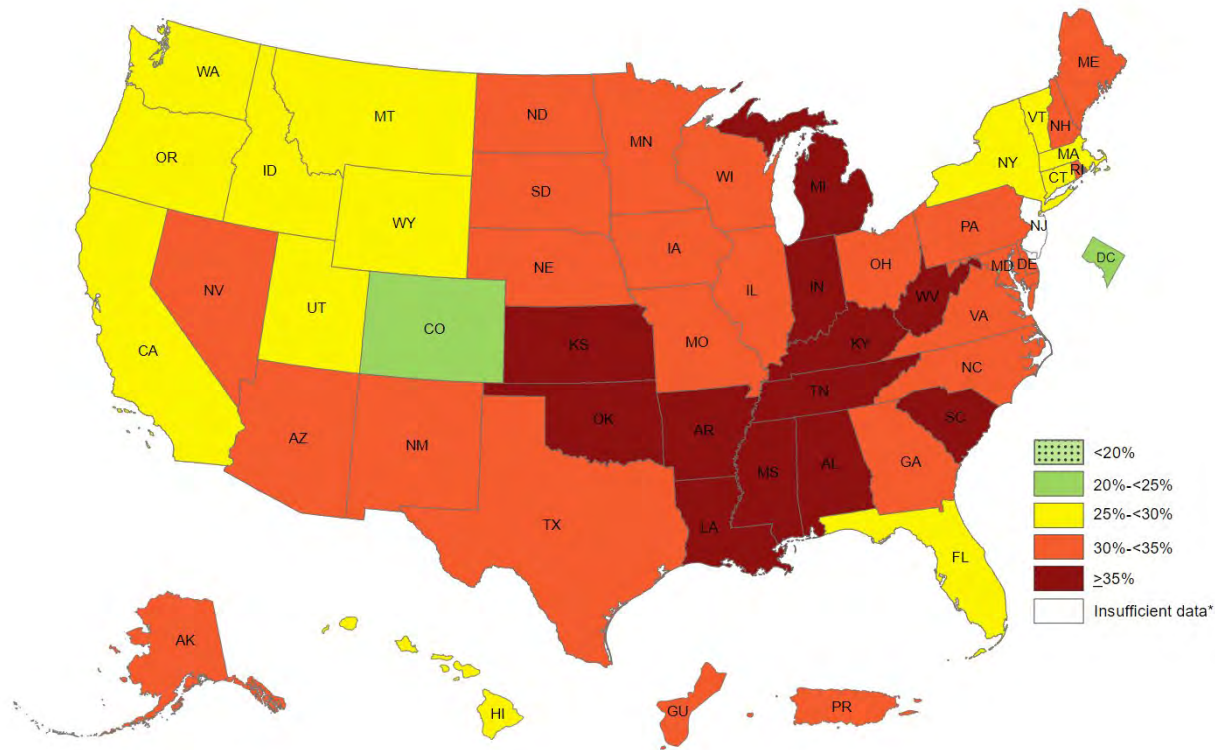


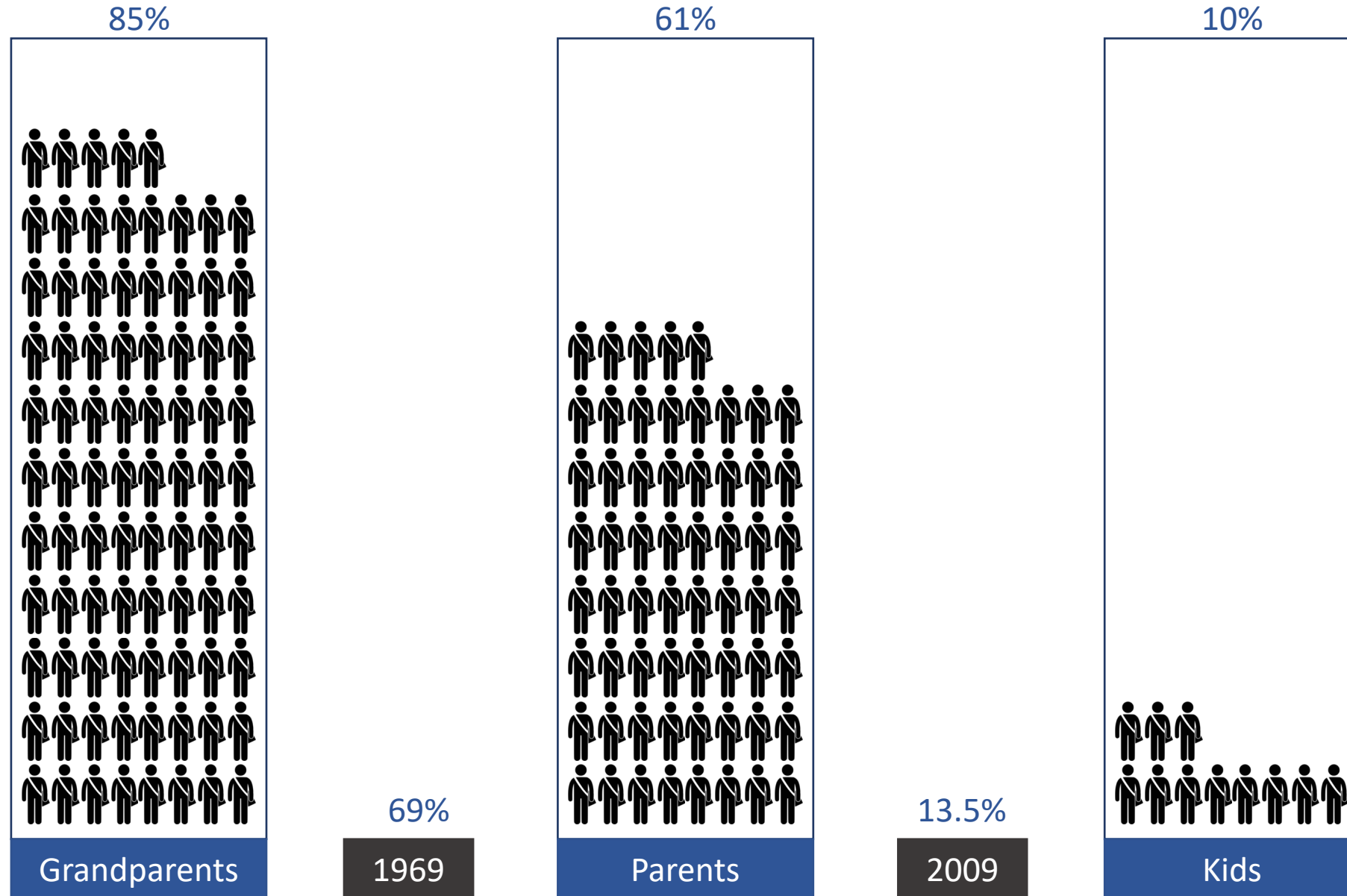
Progress in the Wonderful World of nOZ





Prevalence of Adult Obesity: CDC 2019





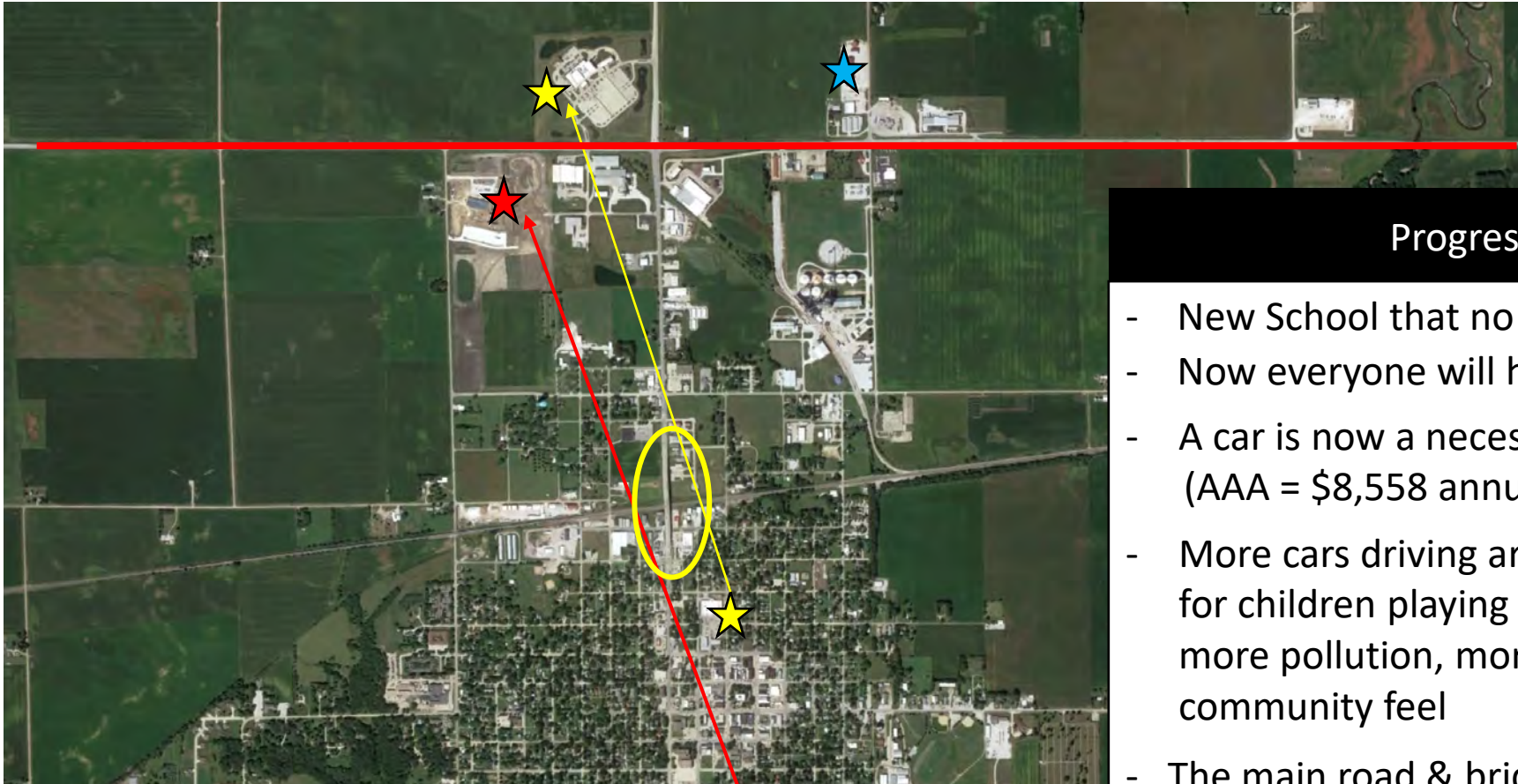


- No Sidewalk to School
- 4 driveway crossings

THERE IS TOO MUCH TRAFFIC
FOR BILLY TO WALK TO SCHOOL;
SO WE DRIVE HIM.



A Transportation Paradox
(by Ian Lockwood)



Progress!

- New School that no one can walk to
- Now everyone will have to drive
- A car is now a necessity for everyone (AAA = \$8,558 annually, \$0.57 p mile)
- More cars driving around = less safety for children playing & people walking, more pollution, more noise, less community feel
- The main road & bridge over the railroad now has traffic congestion
- Spend more \$ to widen road to do same thing we did before

“Unforeseen” consequences

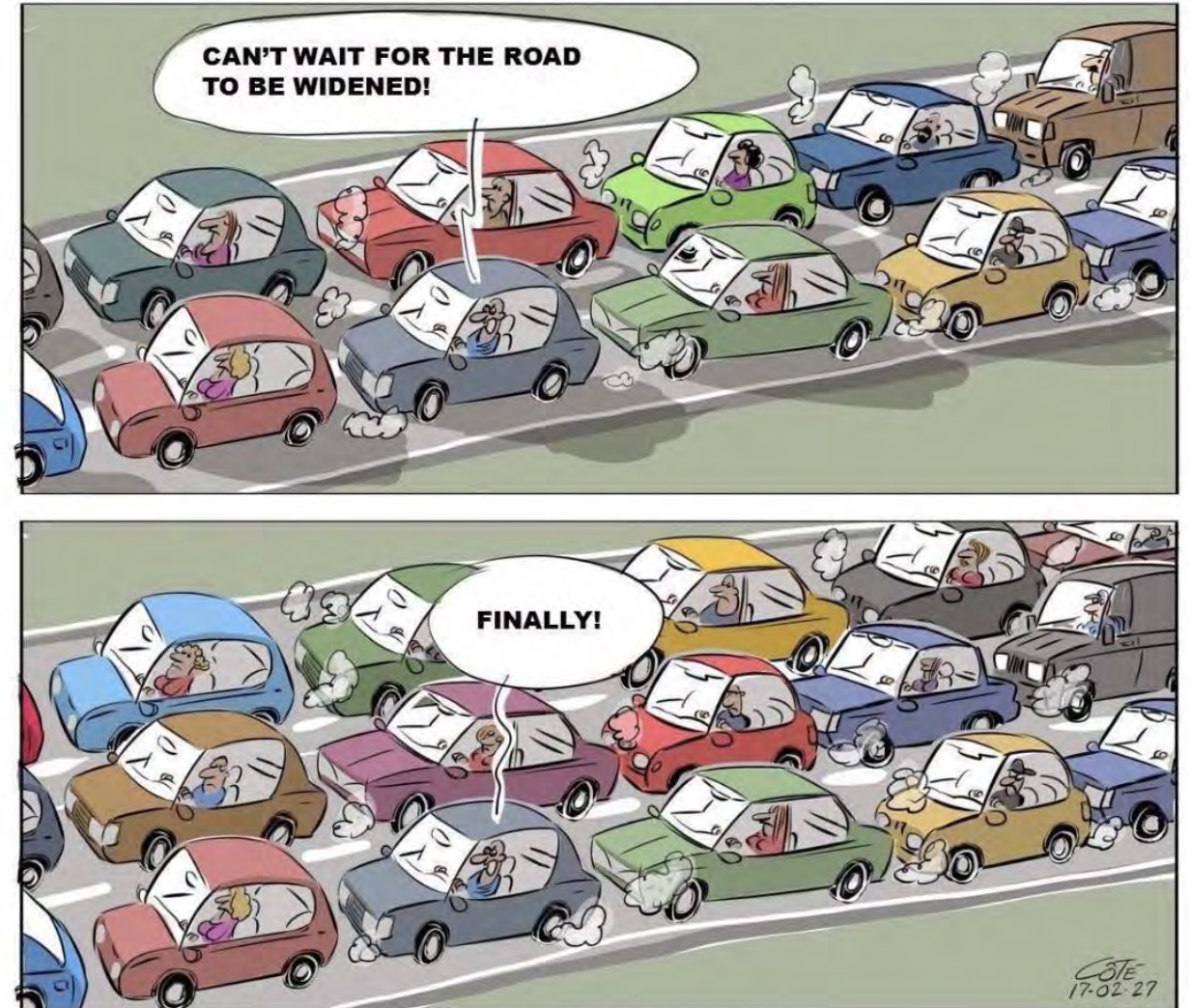
“The paradox of transportation in the late twentieth century is that while it became possible to travel to the moon, it also became impossible, in many cases, to walk across the street.”

—Joell Vanderwagen, 1995²

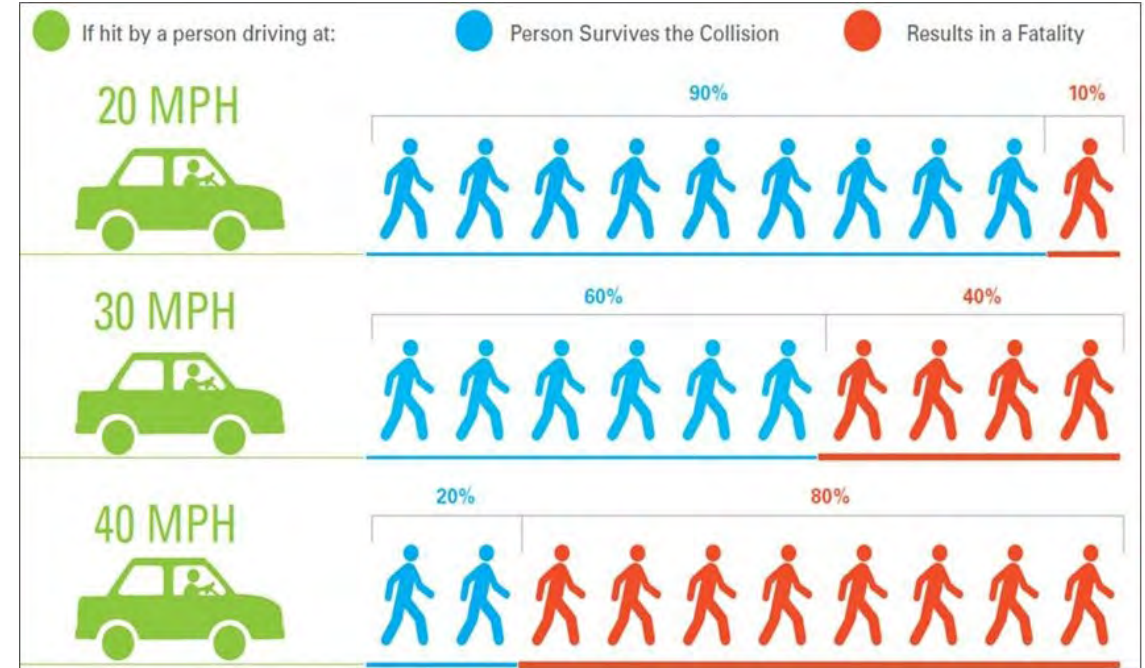
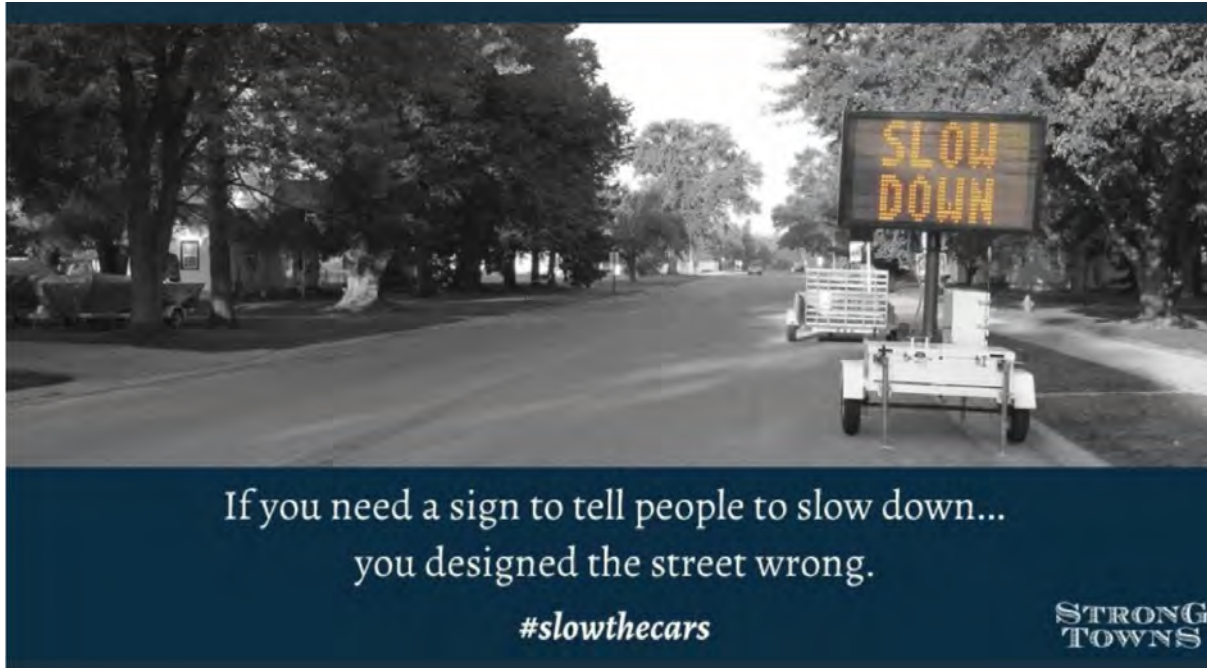


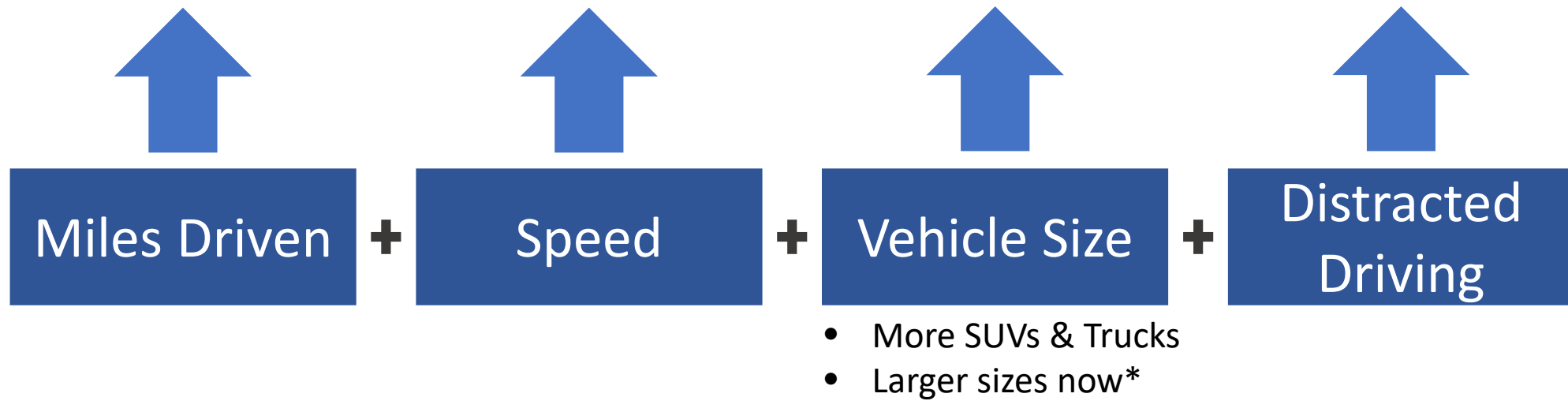
* Not a KS town

Law of Induced Demand: If you build it they will come



Finally, the open road... So we go a faster...





411 Vehicle Fatalities (KS 2019)

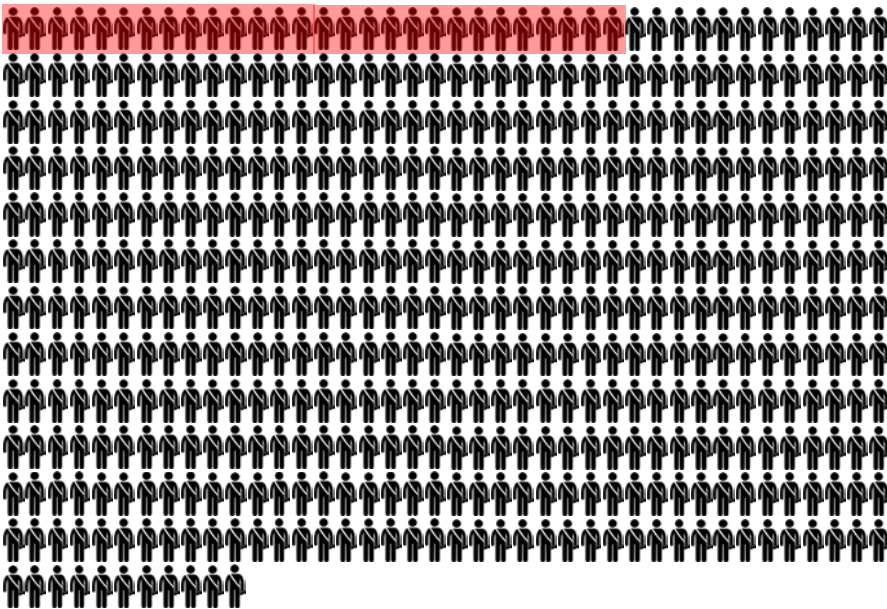
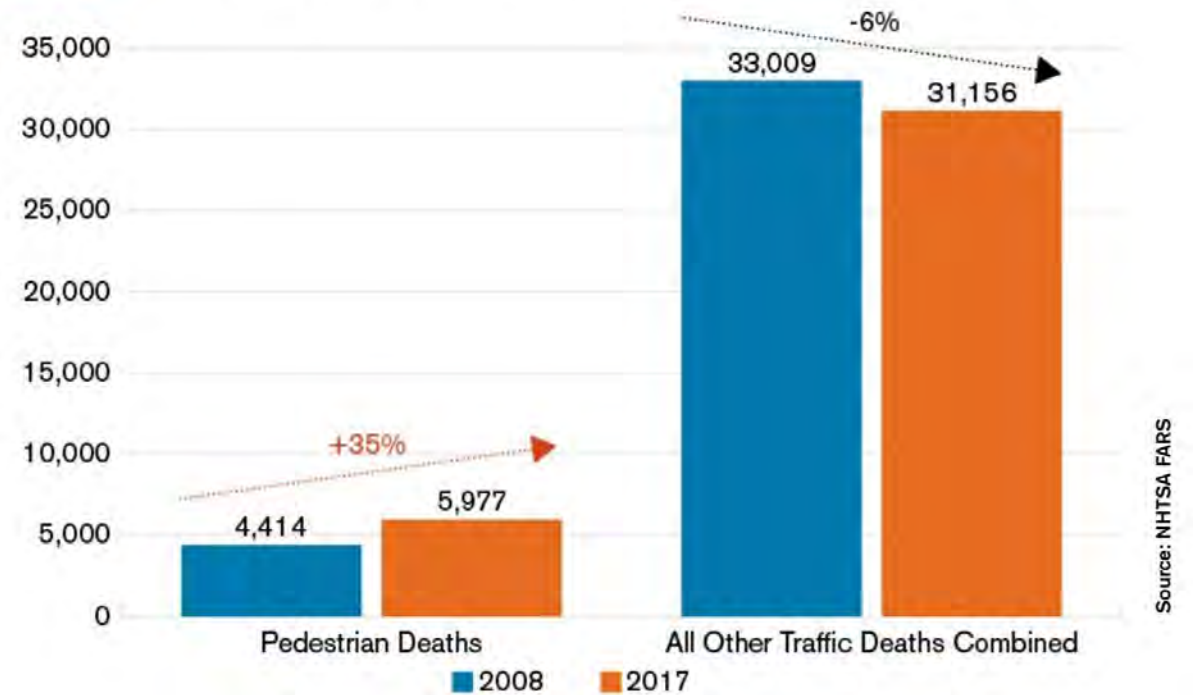


Figure 1 Numbers of U.S. Traffic Deaths in 2008 and 2017



How is this possible?



A Metaphor :



Cartoon: Bill Roundy



Paint & plastic are not protection



Departments



Cities



Advocates



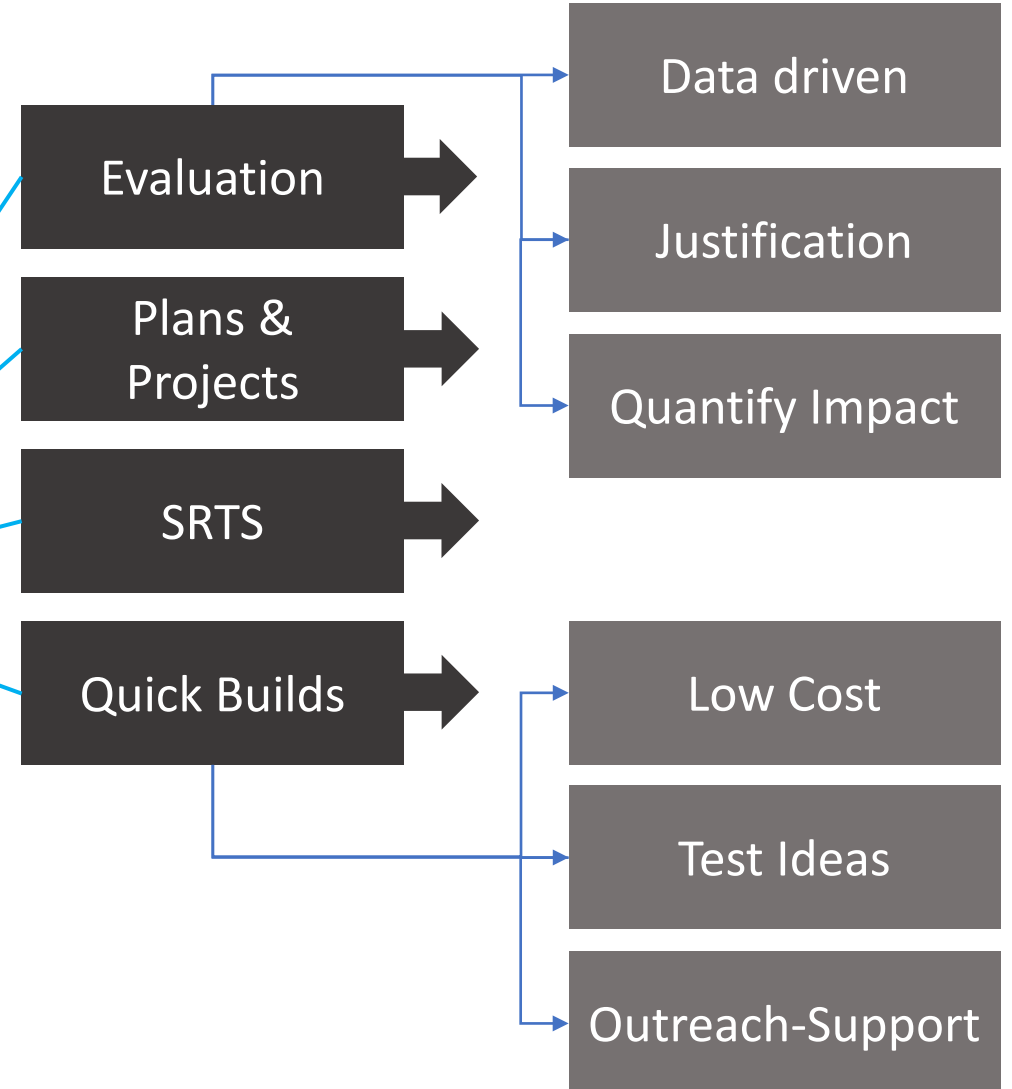
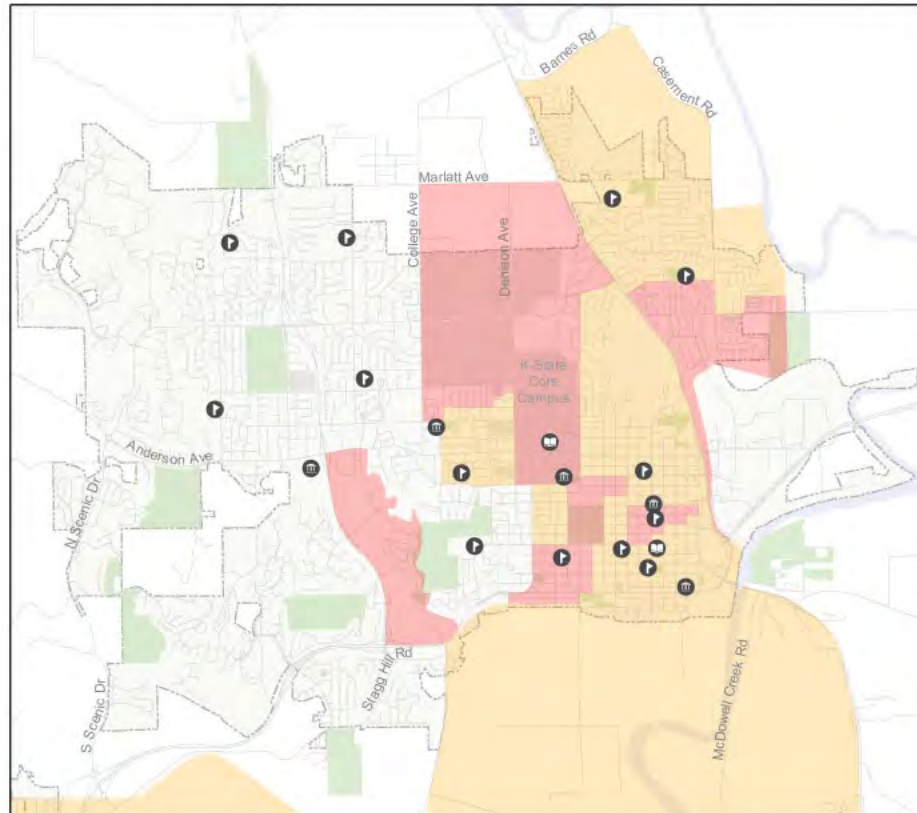


FIGURE 9A. Equity



EQUITY

HIGH NEED AREAS

- High Need
- Low Need

DESTINATIONS + BOUNDARIES

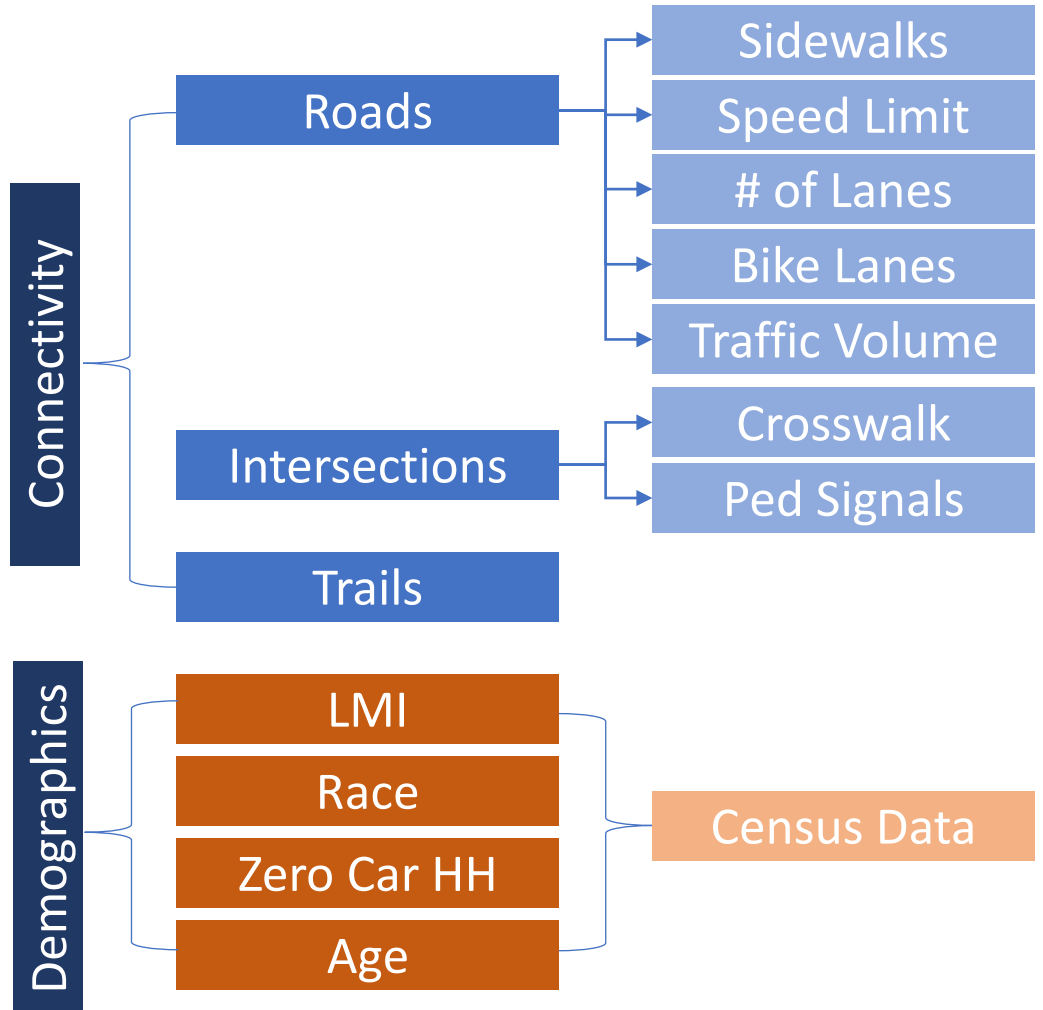
- Libraries
- Civic or Cultural
- School
- University
- Park or Open Space
- River or Stream
- City of Manhattan

MANHATTAN BICYCLE AND PEDESTRIAN SYSTEMS PLAN



Projects in these areas scored higher

Equity GIS Calculations



Project 1

Bike & Ped Systems Plan - Advocacy

~~Open House:
7p City Hall~~

Projects as
Engagement


Pledge Cards

Evenings +
Weekends

Rides + Events

Publicity



 **MY PLEDGE...**

Walking and biking matter to me because:
I need to get to work + classes!

I pledge to support **#safestreetsmhk** and I ask you to make it a priority for our community to ensure that walking and biking become safer and better modes of transportation.

Hannah [redacted] *Hannah [redacted]* *[redacted]@gmail.com*
Print Name Signature Email Address

[redacted] Dr Manhattan, KS 66503
Mailing Address (Street, City, State, Zip)

☒ I hereby grant BIKE WALK MHK and the FLINT HILLS METROPOLITAN PLANNING ORGANIZATION permission to use my likeness, voice, picture, and name for print, radio, or television commercials or publications to be broadcast or distributed anywhere throughout the United States and the world, and to edit such material on film or videotape for these purposes.







PARKS 4 PEOPLE

Walk Play Bike

CITY OF MANHATTAN
PARKS & REC
LIVE LEARN PLAY

BIKE WALK MPO

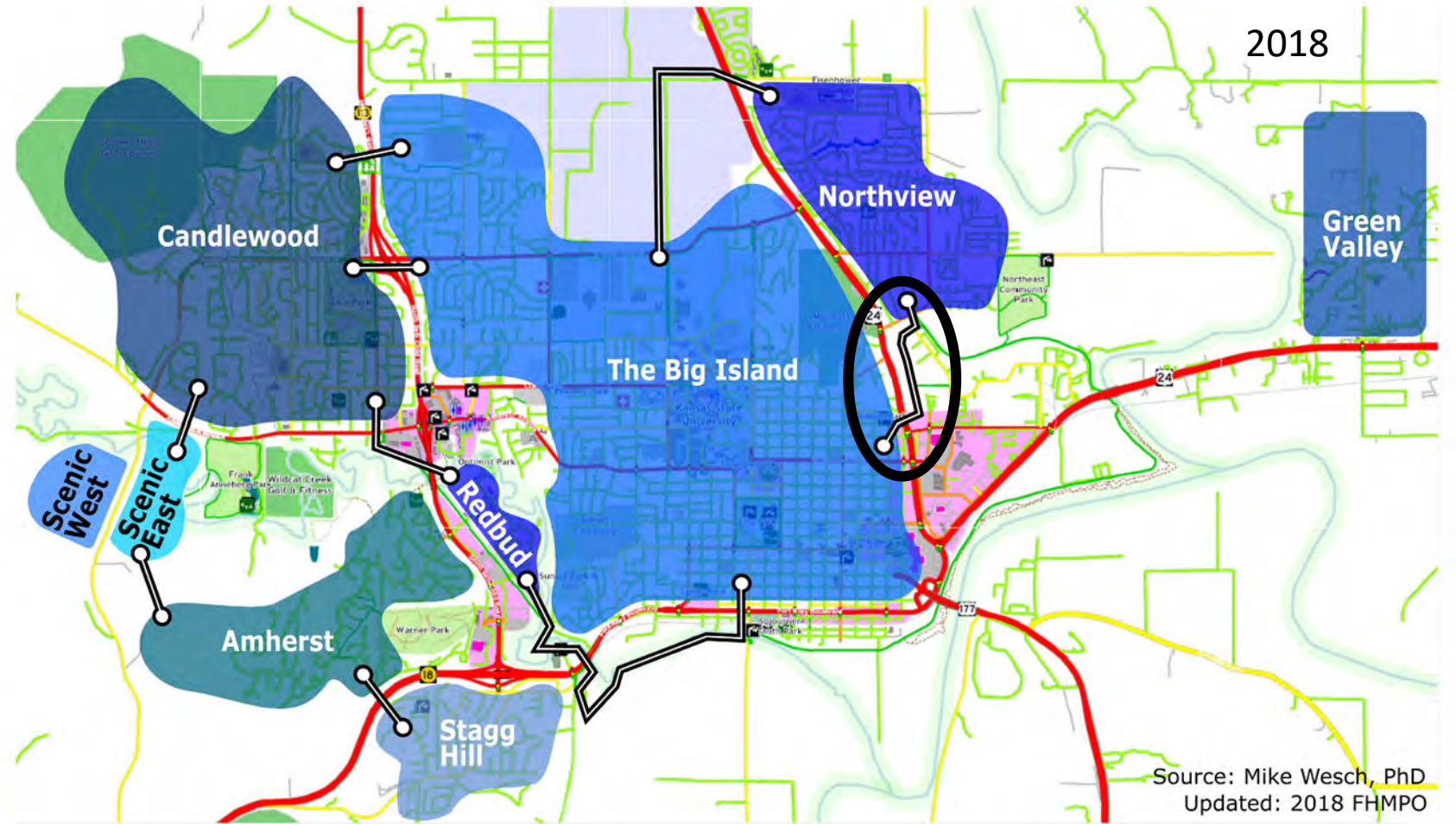
Flint Hills MPO

Part of **Central Park Rd** will be temporarily closed **JULY 11-17** and **SEPTEMBER 12-18** for a demonstration project.

QR code or link to social media

Give us your feedback!





Project 2

Old Blue River Trail

2018



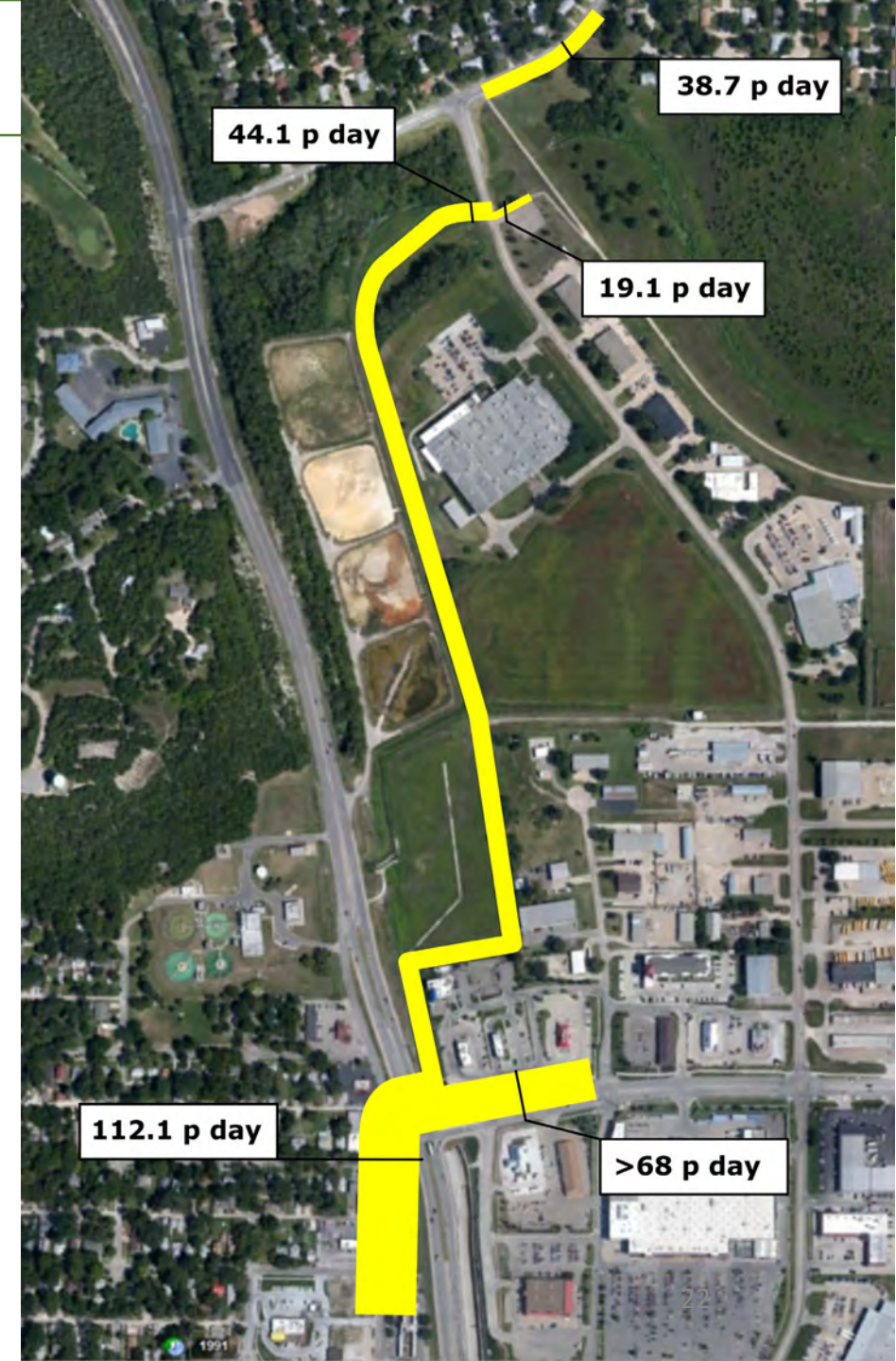
Automated Counters



Project 2

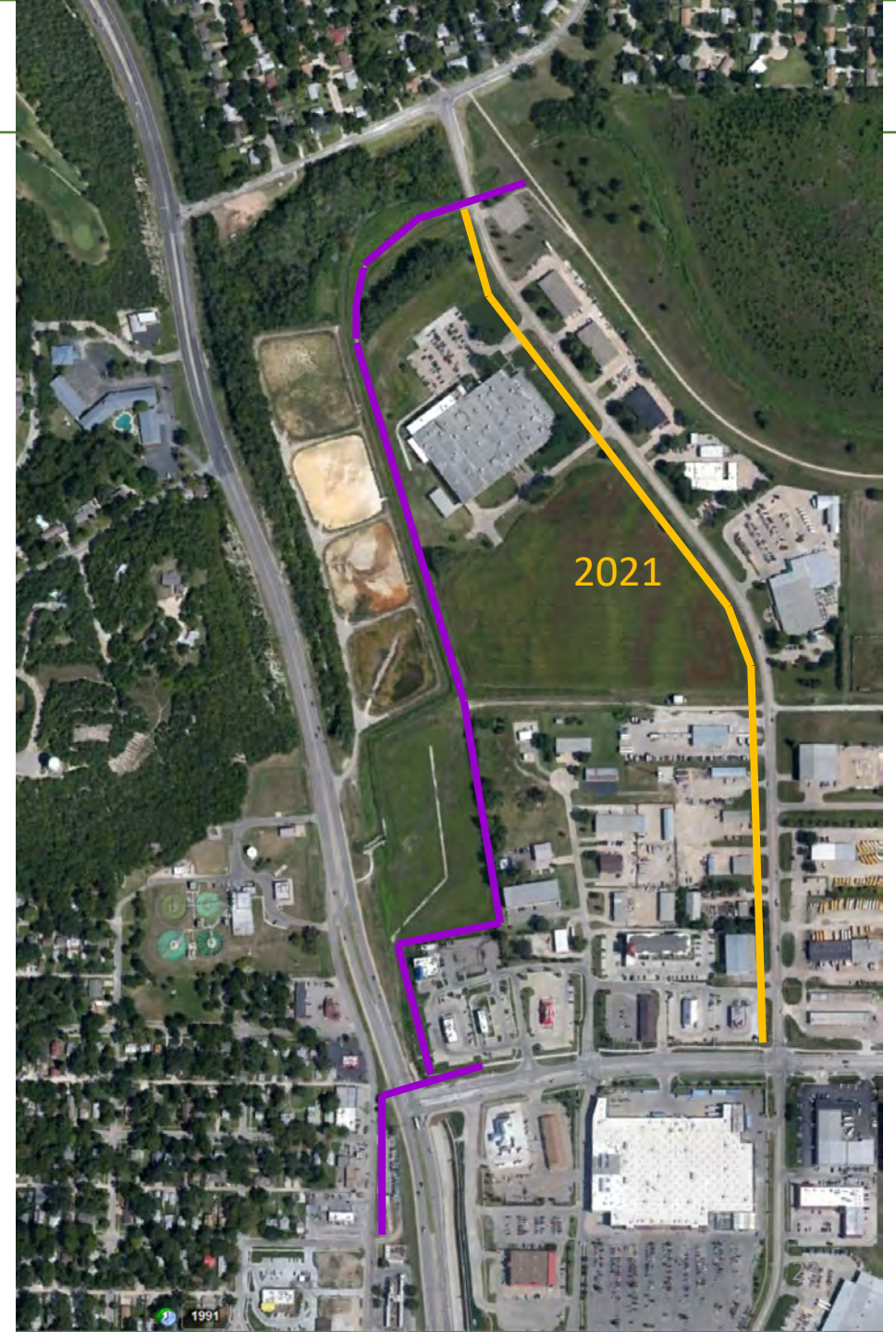
Old Blue River Trail

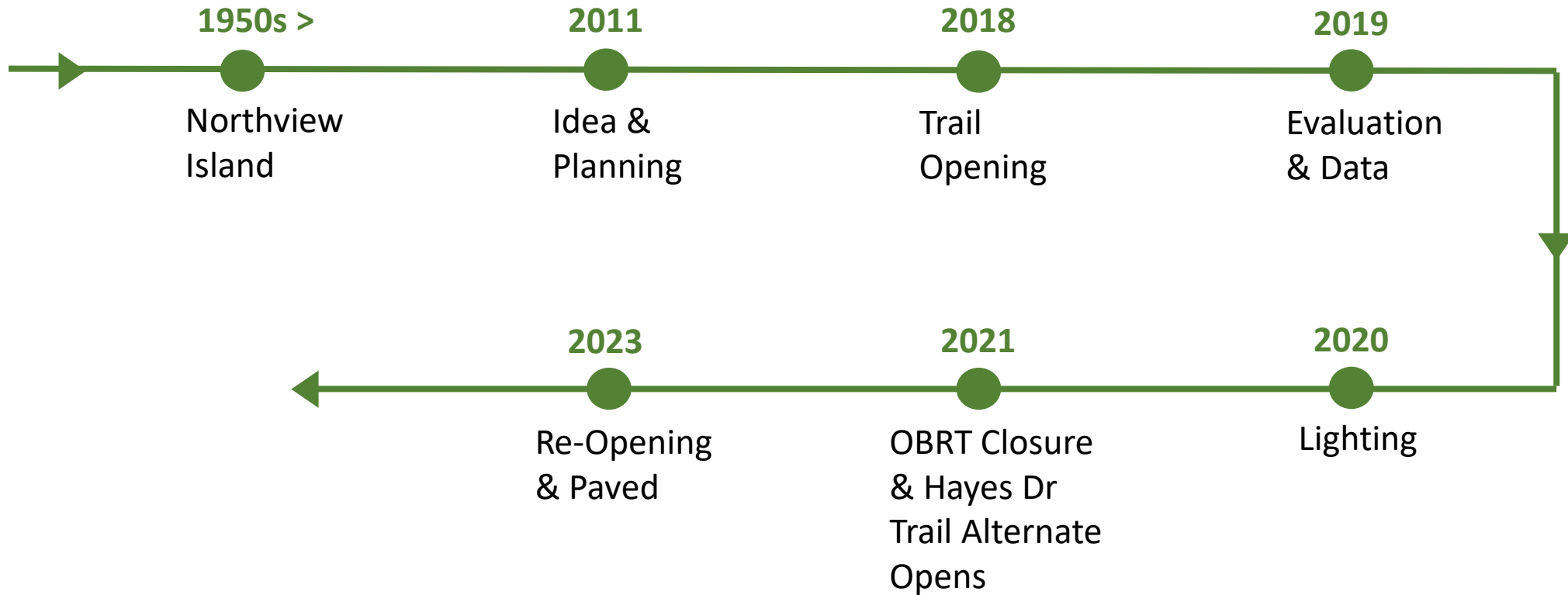
	Bikes	Peds	Total
OBRT west of Hayes	13.5	30.6	44.1
OBRT east of Hayes	4.8	14.3	19.1
McCall Trail @ 3 rd St	32.5	79.6	112.1
Casement Sidewalk	13.0	25.7	38.7



Project 2

Old Blue River Trail





Why?

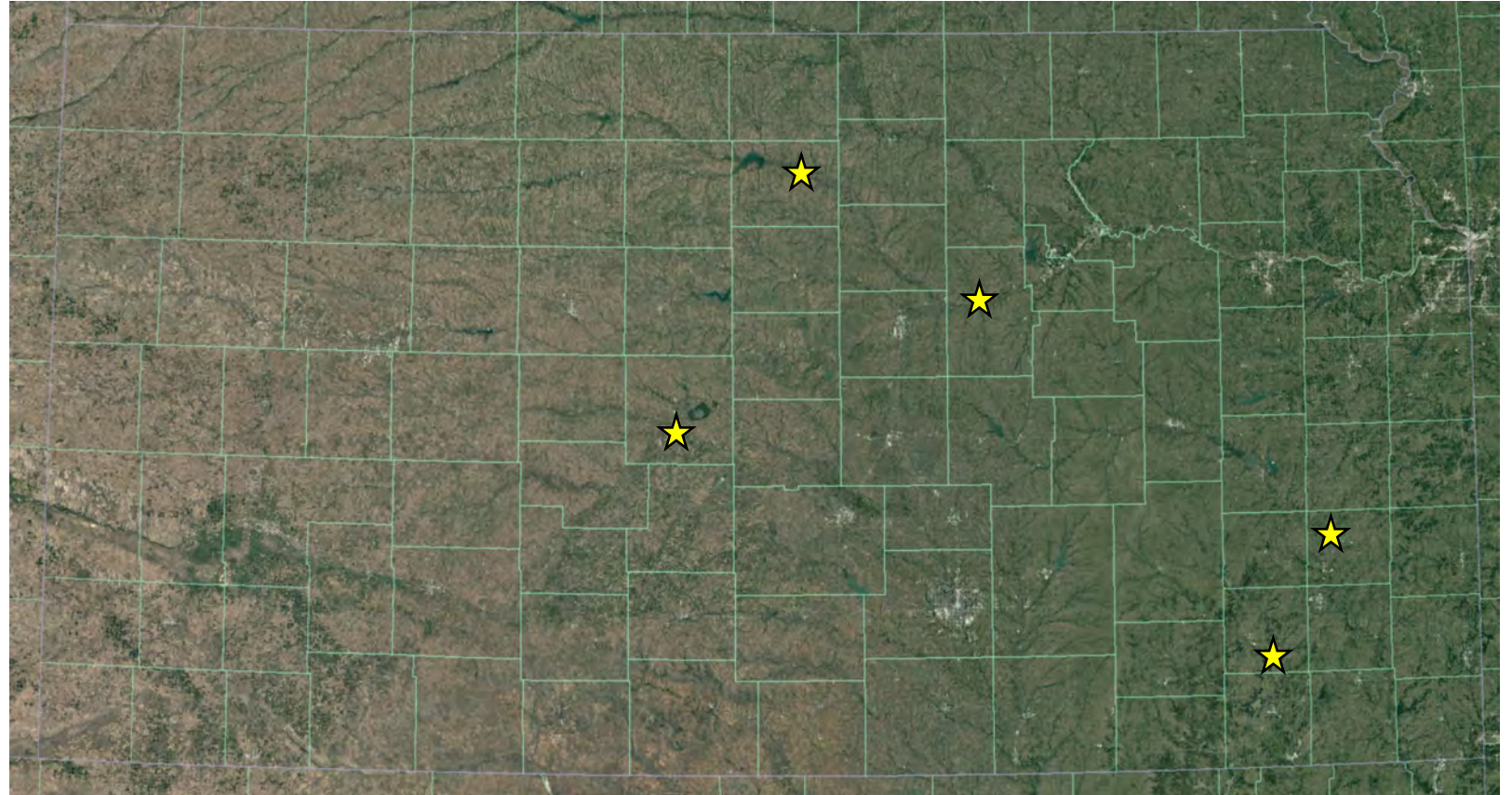
- Data driven
- Justify projects
- Show impact
- Sell future projects

What?

- Simple & easy
- Volunteer help
- Counting people
- Asking a few questions

When?

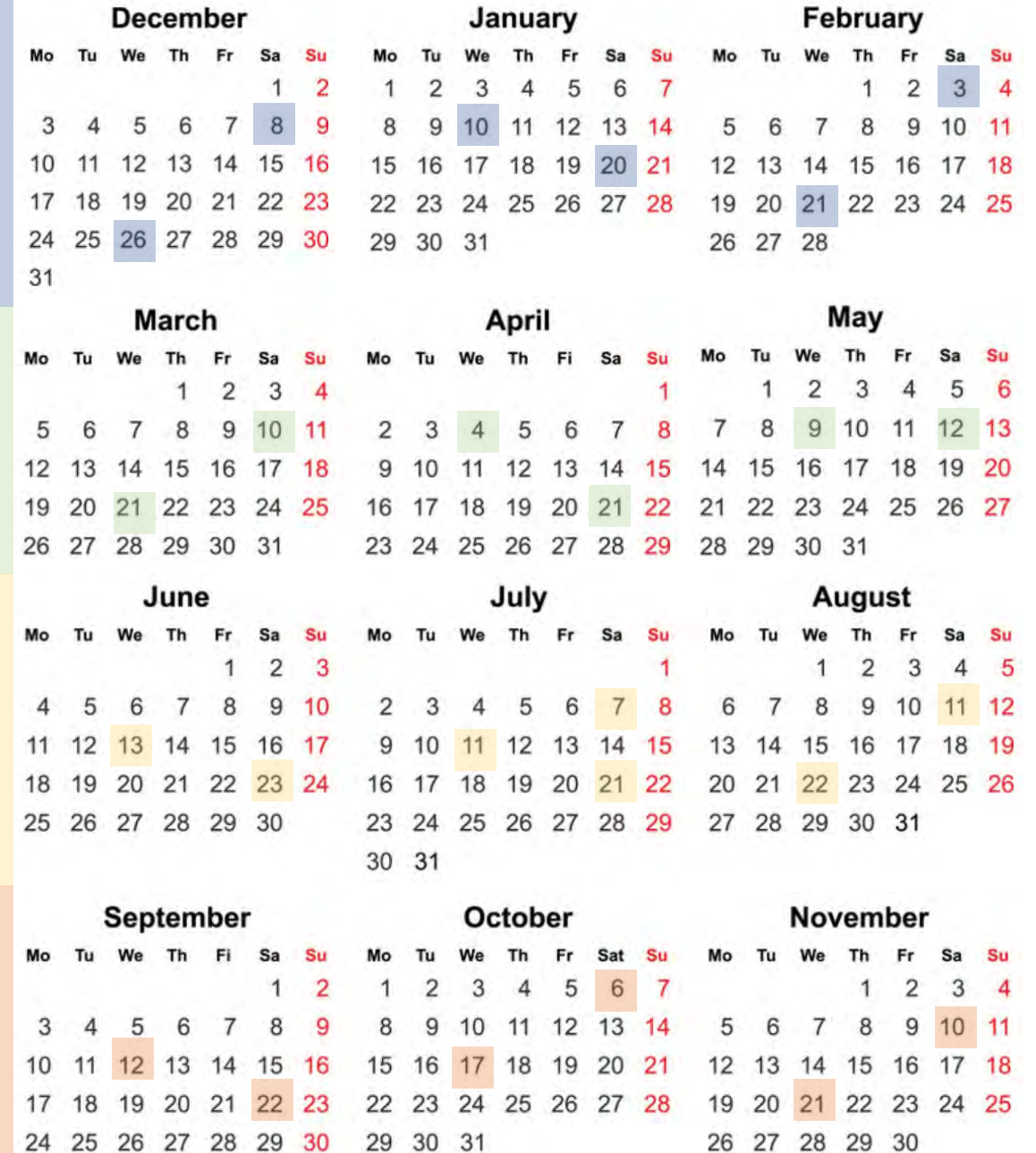
- Seasonal (All year)
- Weekends (Peaks)
- Day: Morning vs Evening, etc



- Barton County
- Dickinson County
- North Central KS (Mitchell, etc)
- Thrive Allen County
- Wilson County

When?

- **Seasonal:** see how weather affects usage
- **Daily:** Weekends vs Weekday
- **Hourly:** Morning vs Midday vs Evening
- **Consistent:** keep as many variables (day of week & time of count) the same as much as possible



Where?

- **Trails:**
 - 1) At junctions/splits where multiple trails meet
 - 2) Near a Park or Trailhead/Parking lot
 - 3) At key road crossings



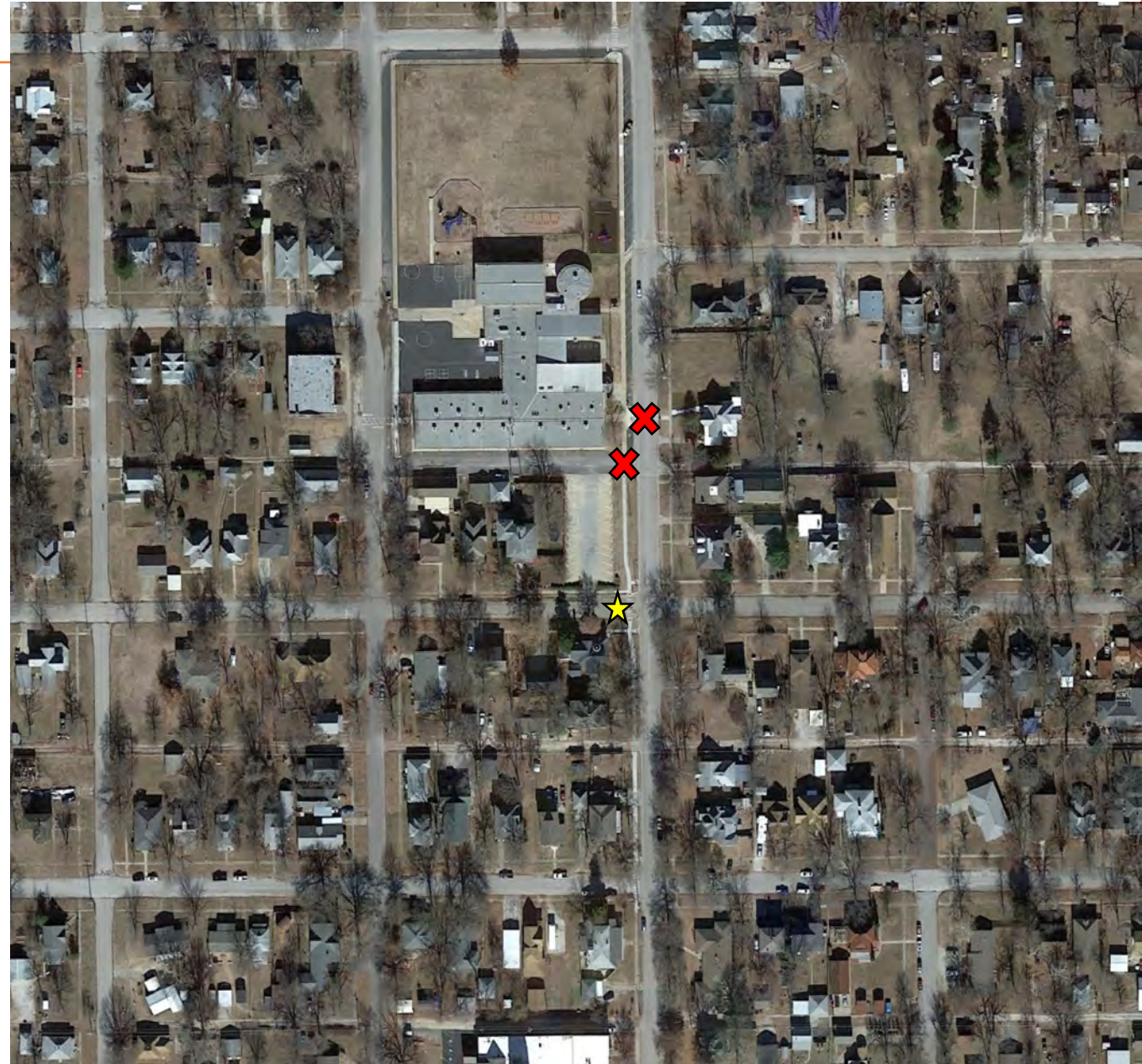
Where to stand while counting



Screen Line: Count anyone who crosses the red line

Where?

- **Schools (Safe Routes to School project):**
 - 1) At Crosswalks
 - 2) Close to school, but beyond where cars pick-up/drop-off
 - 3) Between housing & school (pick a location with more housing)



Intercept Survey

Location: _____ Time start: _____
 Count Type: ☐ School ☐ Park Time end: _____
☐ Gym ☐ Other _____ Date: _____

Mode of transport Tally anyone who arrived by bike or walking.	Biking	Walking	
Questions	Responses	Count: Tally mark each respondent's answer	Total Count
Q1. How often do you use walk or bike?	Almost every day		
	2-4 times a week		
	Once a week		
	Once a month		
Q2. How do you primarily use exercise?	Recreation (for fun or fitness)		
	Transportation (getting around town)		
Q3. Have you heard of the ATAB?	Yes		
	No		
Q4. Have you noticed/used any of the new sidewalks in town?	Yes		
	No		
Q5. Did the new sidewalks make you more likely to exercise (if this trail wasn't here, would you exercise less)?	Yes		
	No		
Q6. Are there any places you feel unsafe while walking/biking? (specific intersection for example)			

When Finished: Please scan/take a photo & email to: tremblay@flinthillsmmpo.org

Intercept Survey

Location: Heller Pk + Church Time start: 3:15 PM
 Count Type: ☒ School ☐ Park Time end: 4:15 PM
Kids ☐ Gym ☐ Other _____ Date: 11/5/20

Mode of transport Tally anyone who arrived by bike or walking.	Biking	Walking	
Questions	Responses	Count: Tally mark each respondent's answer	Total Count
Q1. How often do you use walk or bike?	Almost every day		
	2-4 times a week		
	Once a week		
	Once a month		
Q2. How do you primarily use exercise?	Recreation (for fun or fitness)		
	Transportation (getting around town)		
Q3. Have you heard of the ATAB?	Yes		
	No		
Q4. If we had better/more sidewalks, would you be more likely to exercise/take walks?	Yes		
	No		
Q5. Are there any places you feel unsafe while walking/biking? (specific intersection for example)			

Trail: Prairie Spirit Trail
 Location: Cofachique Park
 Date: Nov. 3, 2020
 Weather: cold - sunny
 Times: 12:25 - 1:45 pm

Name: [REDACTED]

Person on Trail. Even if they didn't answer questions	Biking <u>1</u>	On Foot <u>1</u>
	Female	Male <u>11</u>
	Adult <u>11</u>	Child

Questions	Responses	Tally Marks	TOTALS
1. How often do you use the trail system?	Almost daily Weekly Monthly Almost never	<u>1</u> <u>1</u> 	<u>1</u> <u>1</u>
2. How do you primarily use the trail?	Recreation/Fun Transportation	<u>1</u> <u>1</u>	<u>1</u> <u>1</u>
3. Did this trail make you more likely to exercise?	Yes No	<u>1</u> 	<u>1</u>
4. Are there any safety issues along the trail	Yes No	 <u>11</u>	 <u>2</u>
If so, Explain <u>None</u>			
5. Do the signs help the trail system?	Yes No	<u>11</u> 	<u>2</u>
Improvements? <u>None</u>			

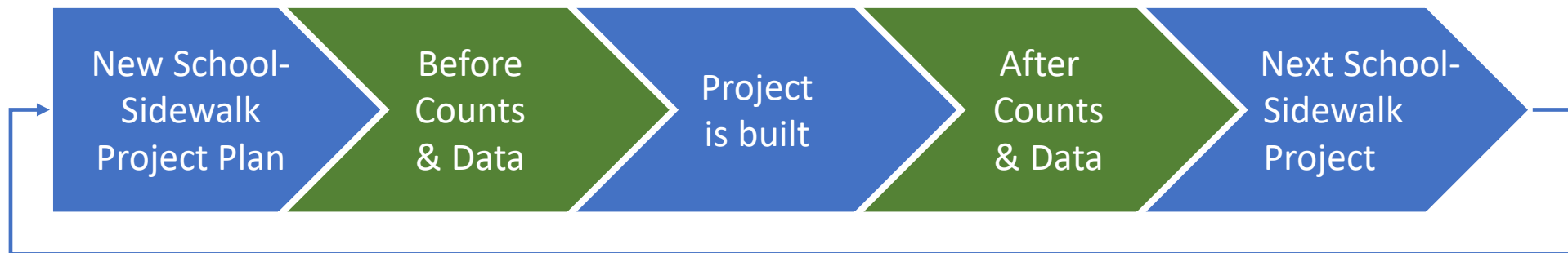
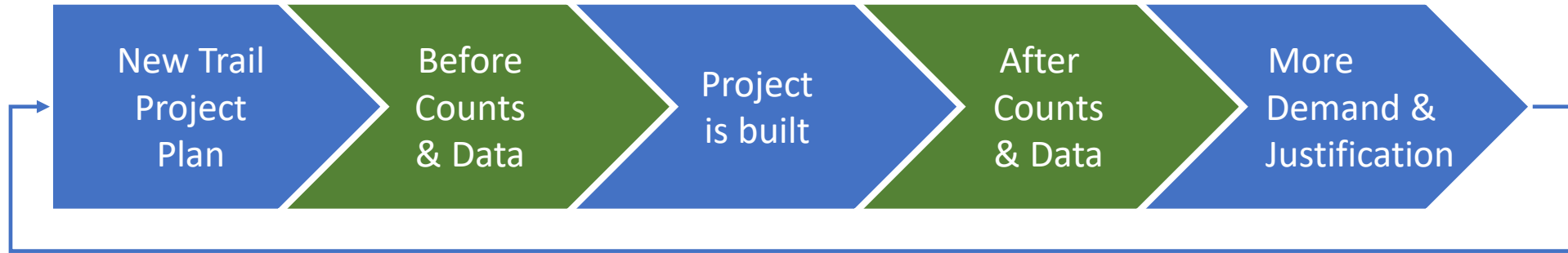
Trail: Lehigh
 Location: Washington Bridge
 Date: 11-27-20 - Black Friday
 Weather: Sunny 50°
 Times: 1:25pm - 2:25pm

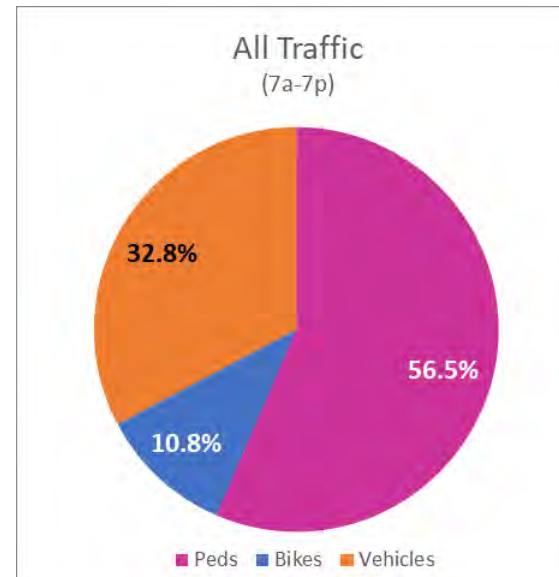
Name: [REDACTED]

Person on Trail. Even if they didn't answer questions	Biking <u>11</u>	On Foot <u>1111</u>	= <u>16</u>
Dog = 1	Female <u>1111</u>	Male <u>1111</u>	= <u>16</u>
	Adult <u>1111</u>	Child <u>111</u>	= <u>16</u>

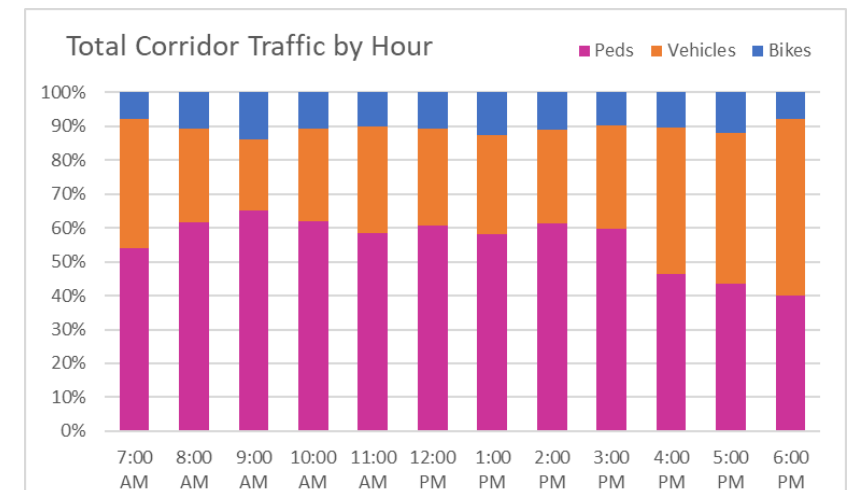
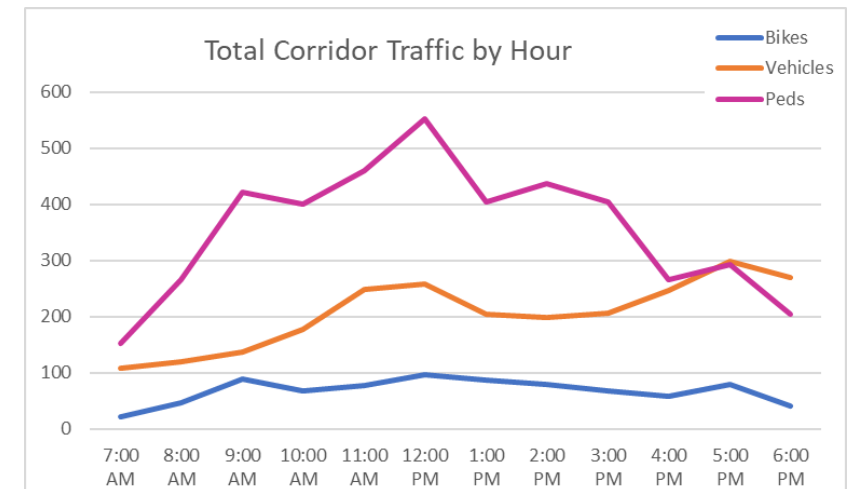
Questions	Responses	Tally Marks	TOTALS
1. How often do you use the trail system?	Almost daily Weekly Monthly Almost never	<u>1</u> <u>1</u> <u>111</u> <u>1111</u>	<u>1</u> <u>1</u> <u>3</u> <u>11</u>
2. How do you primarily use the trail?	Recreation/Fun Transportation	<u>1111</u> <u>1111</u>	<u>16</u> <u>-</u>
3. Did this trail make you more likely to exercise?	Yes No	<u>1111</u> <u>-</u>	<u>16</u> <u>-</u>
4. Are there any safety issues along the trail	Yes No	<u>-</u> <u>1111</u>	<u>-</u> <u>6</u>
If so, Explain <u>Steep ramp if gravel</u>			
5. Do the signs help the trail system?	Yes No	<u>1111</u> 	<u>4</u>
Improvements? <u>redo some wooden signs</u> <u>signs need help</u>			

Bravo to
Woodbine!





Hour	Peds	Bikes	Vehicles
7:00 AM	153	22	108
8:00 AM	265	46	119
9:00 AM	421	89	136
10:00 AM	400	68	177
11:00 AM	460	78	248
12:00 PM	552	97	259
1:00 PM	404	87	205
2:00 PM	437	79	198
3:00 PM	404	67	207
4:00 PM	265	59	246
5:00 PM	293	80	298
6:00 PM	205	40	269
Total	4259	812	2470



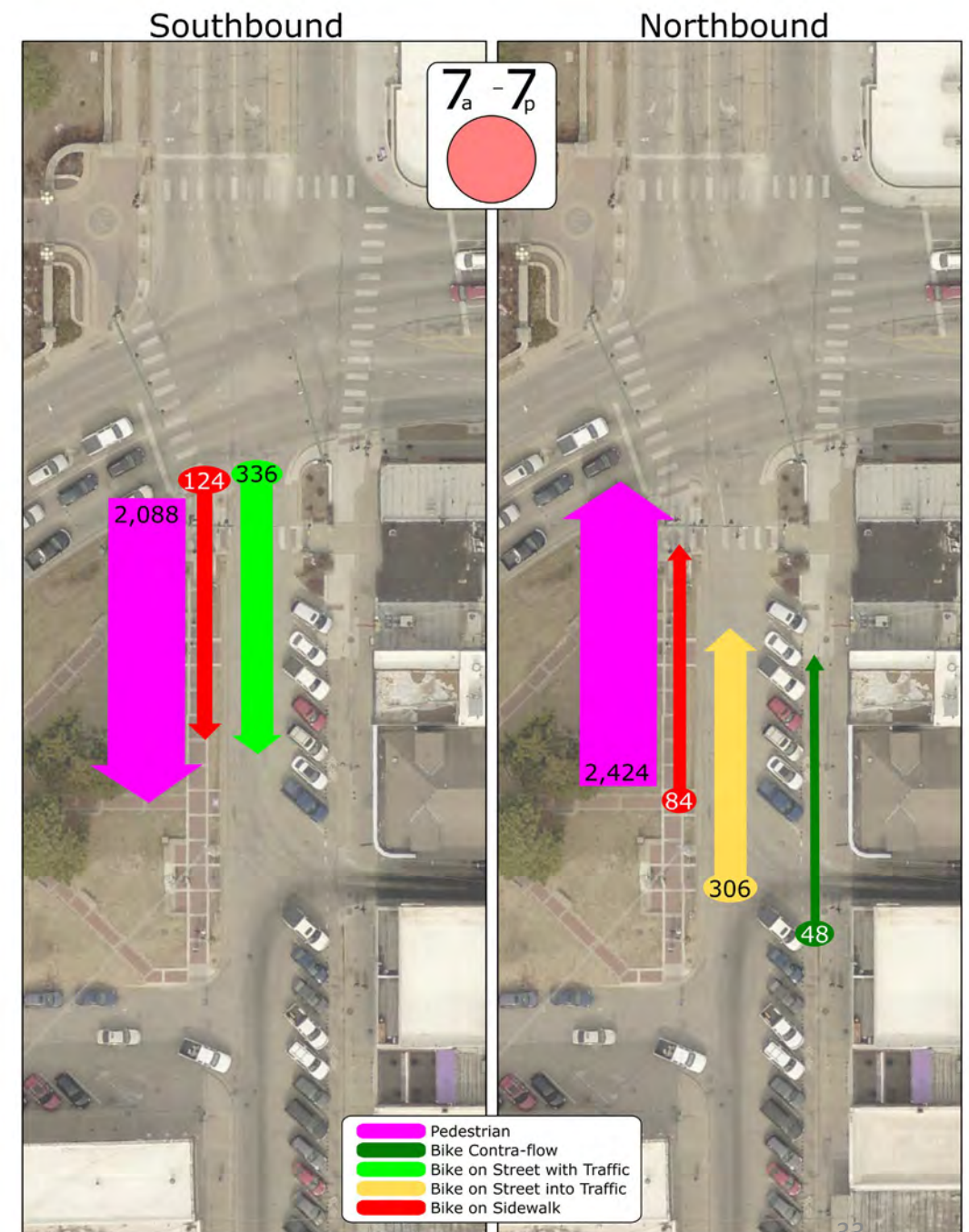
Northbound bikes:

- only 11% ride in **bike lane***
- 70% ride **into on coming traffic**
- 19% ride on **sidewalk**

Southbound bikes:

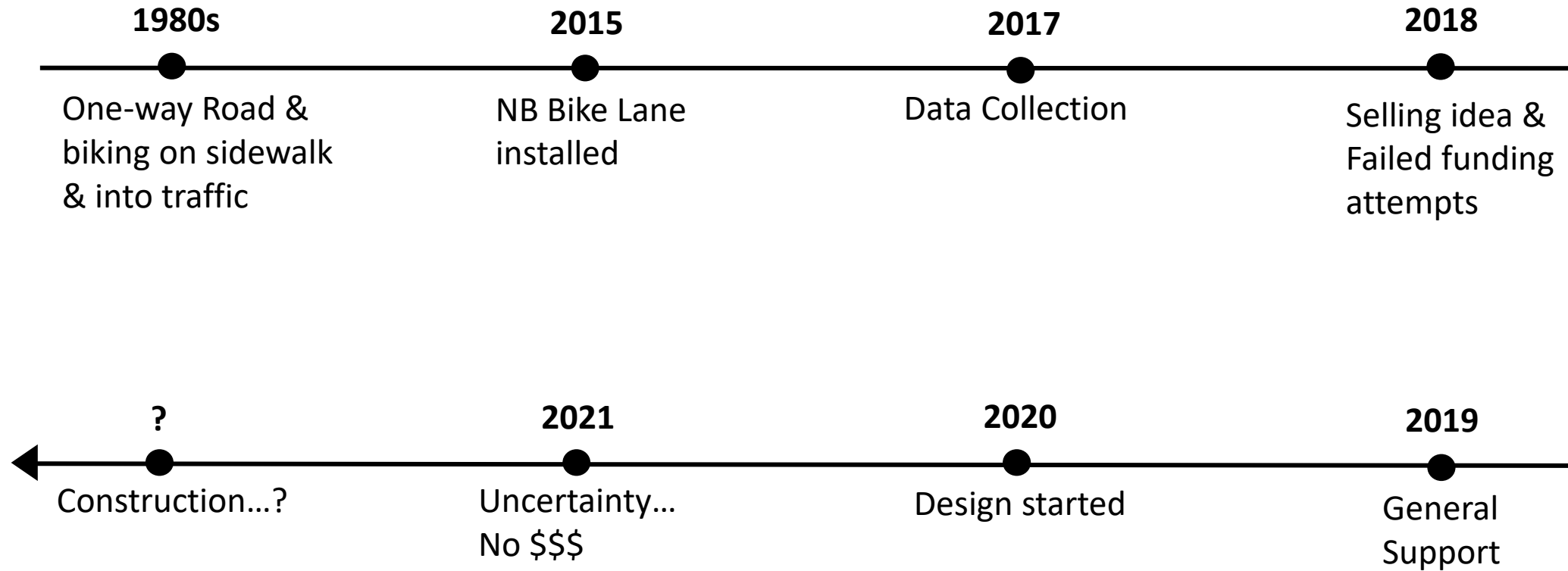
- 75% ride with traffic on **Bike Blvd**
- 25% ride on **sidewalk**

* Not marked, vehicles block it, etc



Data led solution: **2-Way Protected Bike Lane**





Ped Island

Pedestrian Refuge Island

SAFE TRANSPORTATION
FOR EVERY PEDESTRIAN

COUNTERMEASURE TECH SHEET



⚠️ The combination of a long crossing distance and multiple lanes of oncoming traffic can create an unsafe pedestrian environment.

💡 A pedestrian refuge island can improve safety and comfort by providing pedestrians with the option of waiting in the median area before beginning the next stage of the crossing.

Pedestrian refuge islands can reduce pedestrian crashes by

32%



A pedestrian refuge island is a median with a refuge area that is intended to help protect pedestrians who are crossing a multilane road. This countermeasure is sometimes referred to as a crossing island, refuge island, or pedestrian island. The presence of a pedestrian refuge island at a midblock location or intersection allows

Curb Extensions

Crosswalk Visibility Enhancements

SAFE TRANSPORTATION
FOR EVERY PEDESTRIAN

COUNTERMEASURE TECH SHEET



This example combines curb extensions, high-visibility markings, overhead lighting, and in-street signs on a two-lane roadway.

⚠️ Poor lighting conditions, obstructions such as parked cars, and horizontal or vertical roadway curvature can reduce visibility at crosswalks, contributing to higher crash rates.

💡 Crosswalk visibility enhancements help make crosswalks and/or pedestrians more visible and can help pedestrians decide where to cross.

Crosswalk visibility enhancements can reduce crashes by

23-48%







Rubber Curb
\$27

Reusable



Vertical Delineator
& Butyl Pad
\$40

Reusable

Tempera Paint:
32oz = \$3.99

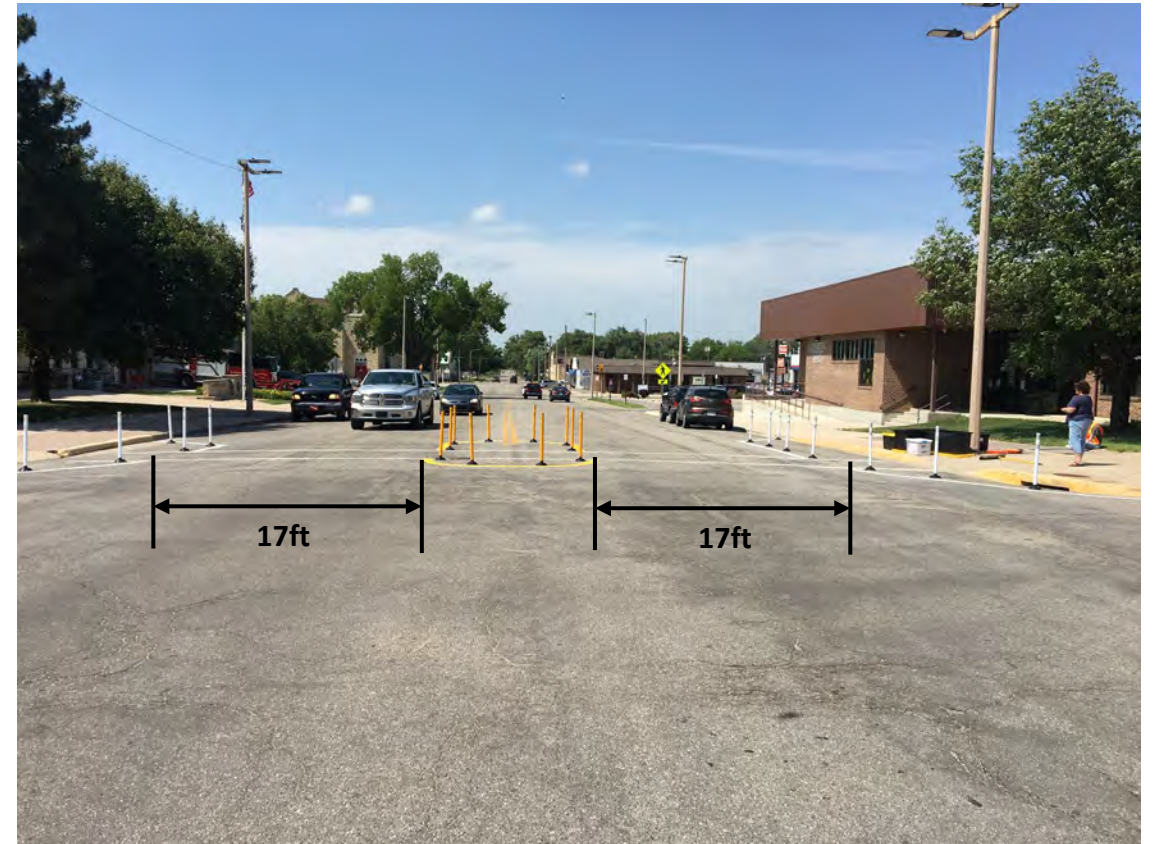


Corn Starch:
16oz = \$6.70



Yield to Ped Sign
\$350

Reusable



Vertical Delineators (28 + shipping) = **~\$1,250**

Paint = **~\$30**

Supplies* = **\$100**

Total = ~\$1,400

Item	Quantity	Installation	Clean-up
Construction Cones	5-10	Yes	-
High Visibility Vests	*	Yes	Yes
Trash Bag	2-3	Yes	Yes
Dustpan	1	Yes	Yes
Broom	1-2	Yes	Yes
Gloves (pair)	1	Yes	Yes
Hand truck/Dolly **	1	Yes	Yes
Tape Measure (25ft)	1	Yes	-
Chalk set ***	1	Yes	-

* 1 per person
 ** for moving storage totes
 *** for marking project layout

& much more



<https://www.flinthillsmmpo.org/bikepedplans>

MPO Plan Drawing



Install Process

- 1 You can do this!
- 2 Sweep or Blow away all debris



3 Measure & mark with Chalk

4 Dry fit delineators to get layout



5 Paint Striping



6 Install Butyl to Delineators & stick to ground

7 Paint median (if needed)



8 Clean up and Enjoy



MPO in 2021

- 1 Workflow Questionnaire:
DIY project selection for
existing crossings



- 2 How-To videos with step
by step instruction

- 3 Semi-Permanent Quick
Build projects



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

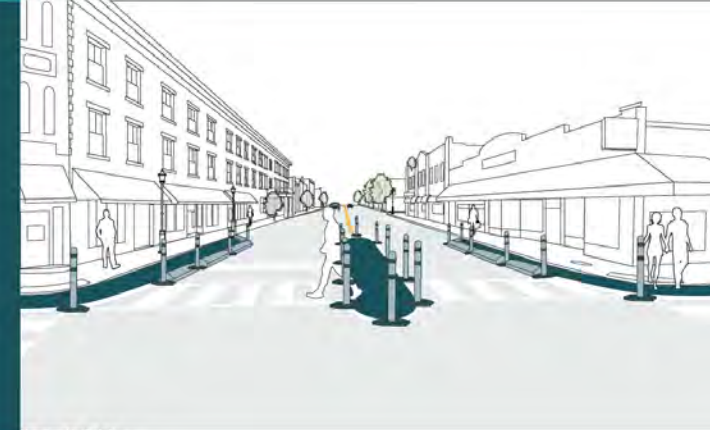
1 month - 1 year \$\$

Relatively low cost and semi-durable materials (delineators)

Improve roadway safety in a quick and inexpensive manner

Low-cost, quick installation, condensed project delivery timeline

On-going maintenance, not aesthetically pleasing



Project type

Materials

Purpose

Advantages

Disadvantages

Final Construction

5 years - 50 years \$\$\$

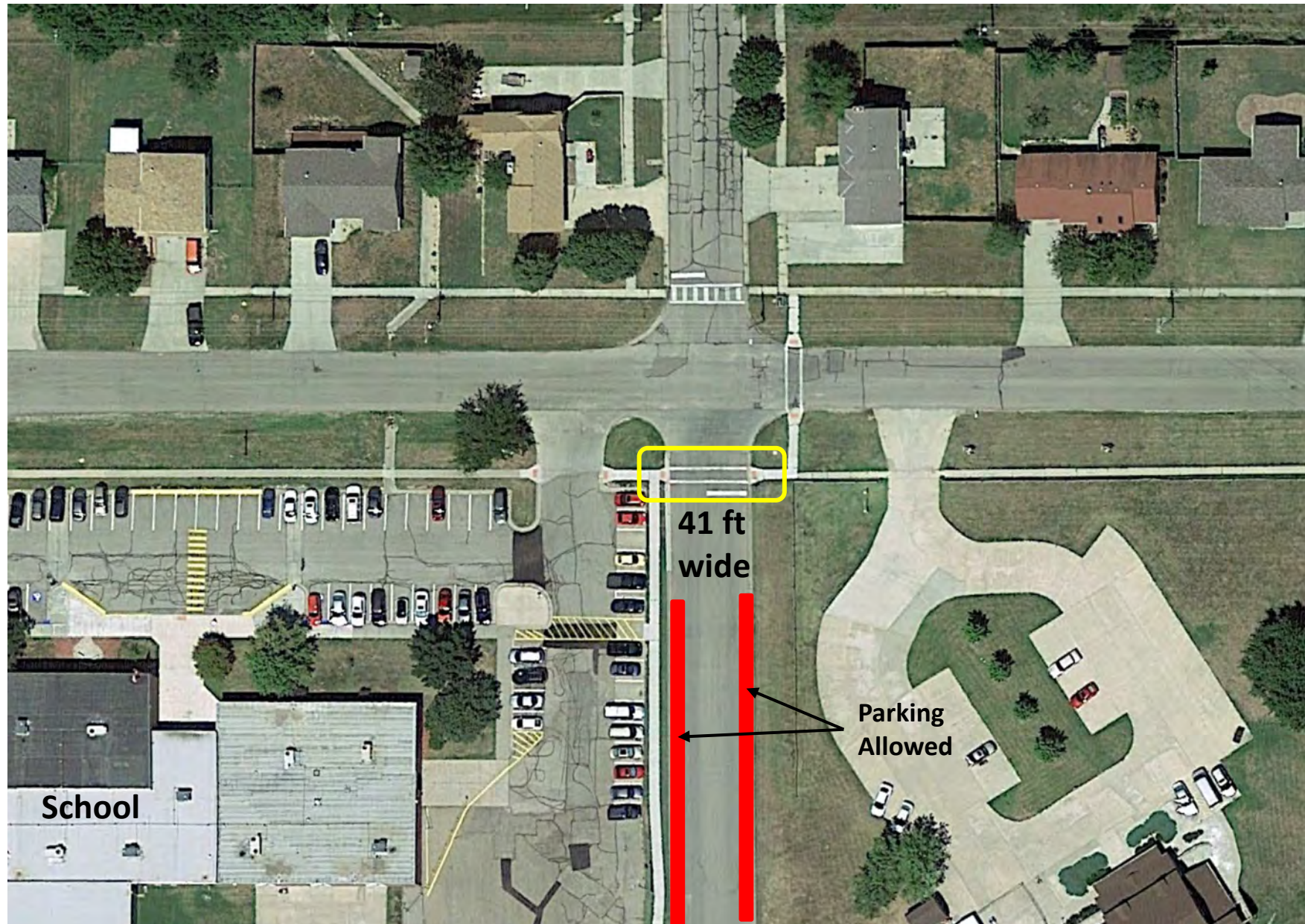
High-cost permanent materials (concrete)

Permanently install roadway improvement projects

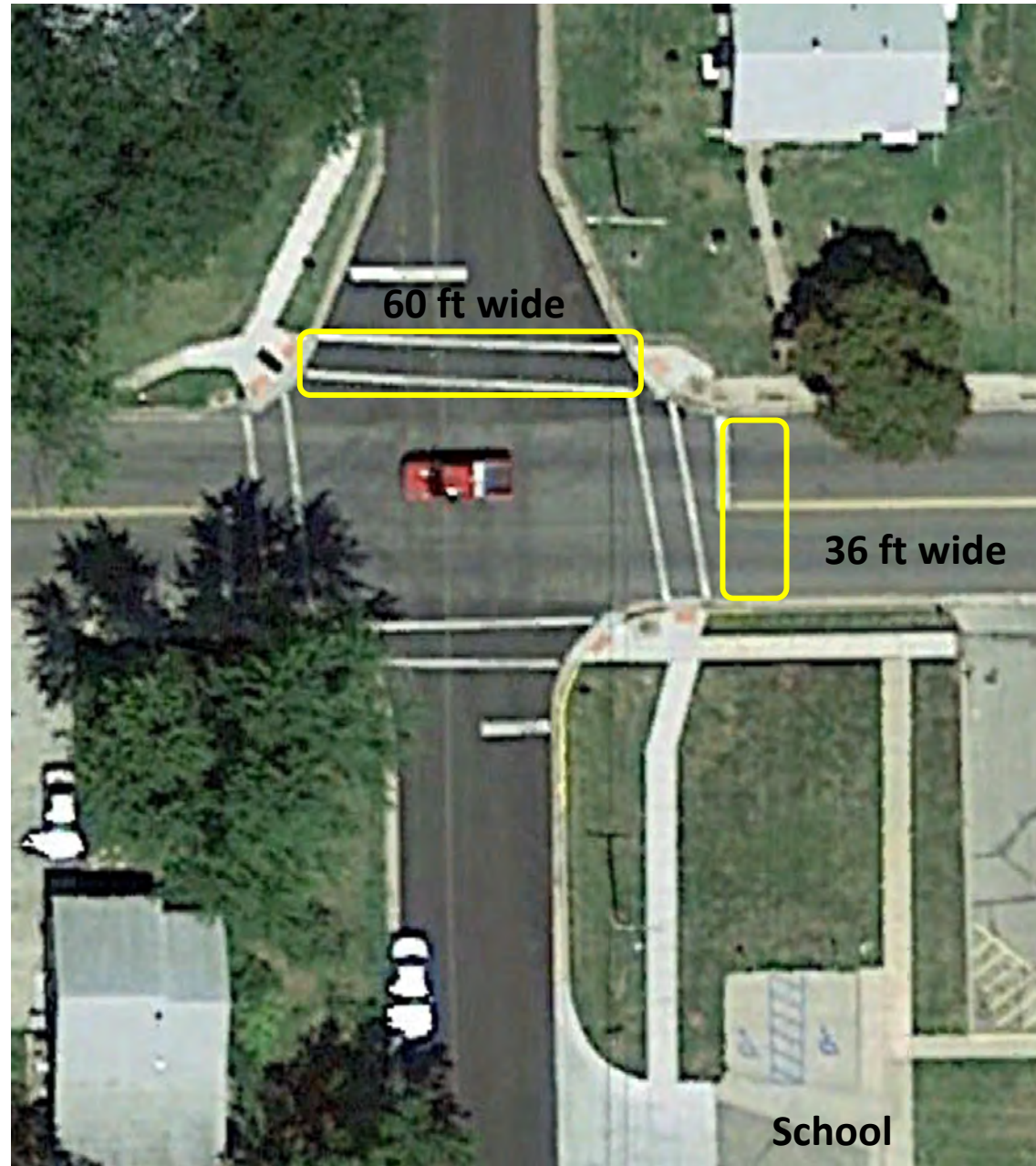
Permanent, investment in the community, aesthetics

High cost, high maintenance











Prioritized Project Lists

SRTS Plans

Active
Transportation
Plans

Any idea
with a plan



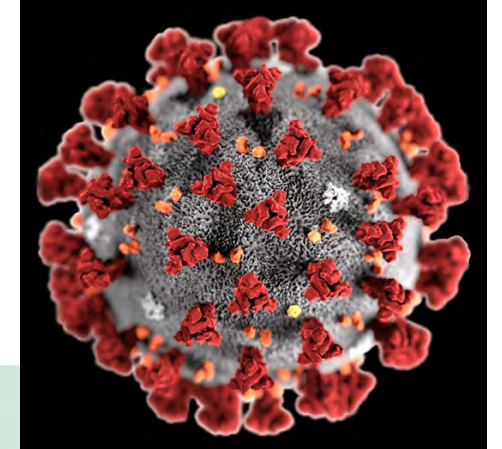
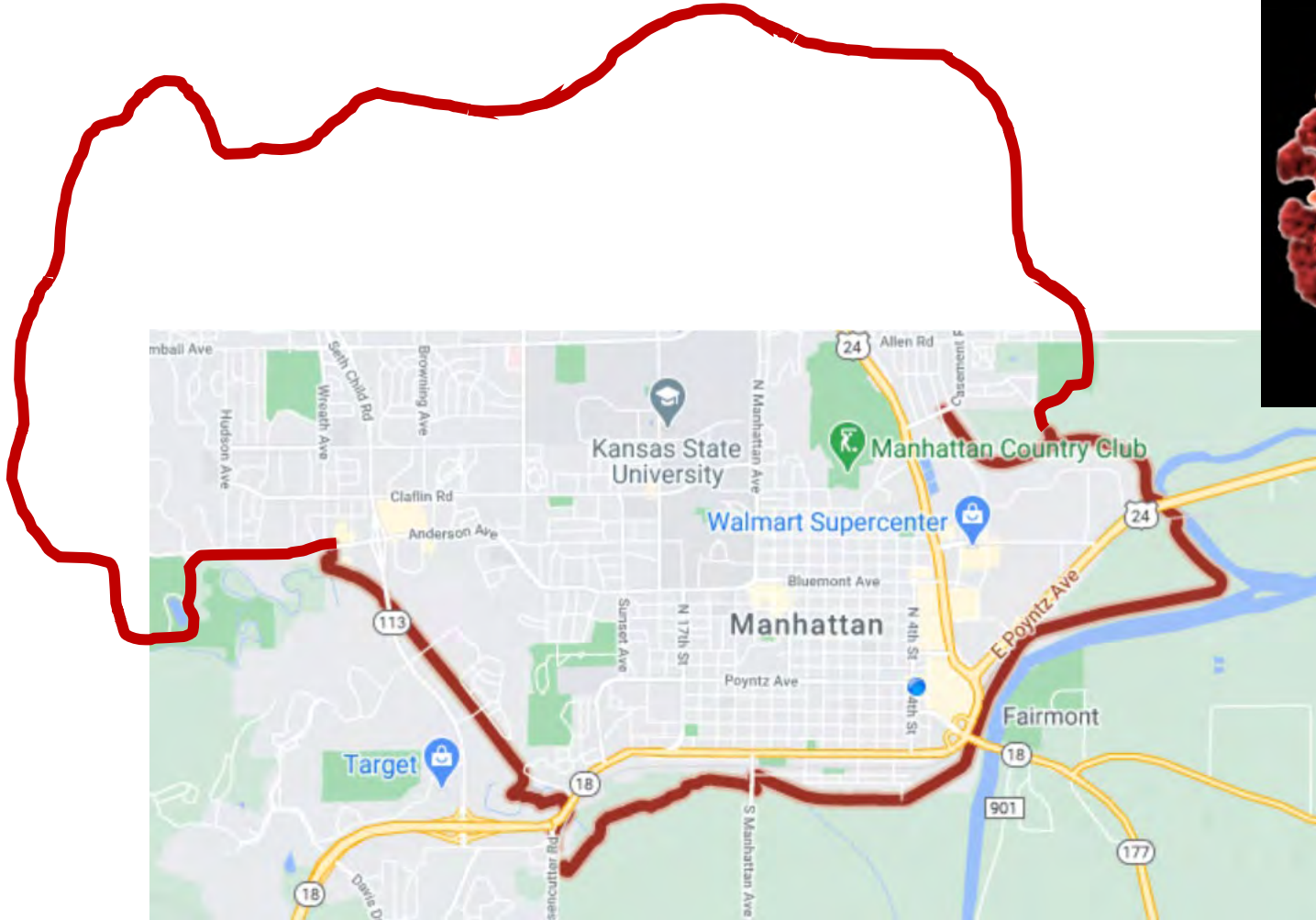
Opportunity



You & Your Organization

No \$\$\$

Linear Trail:
since 1986



Opportunities

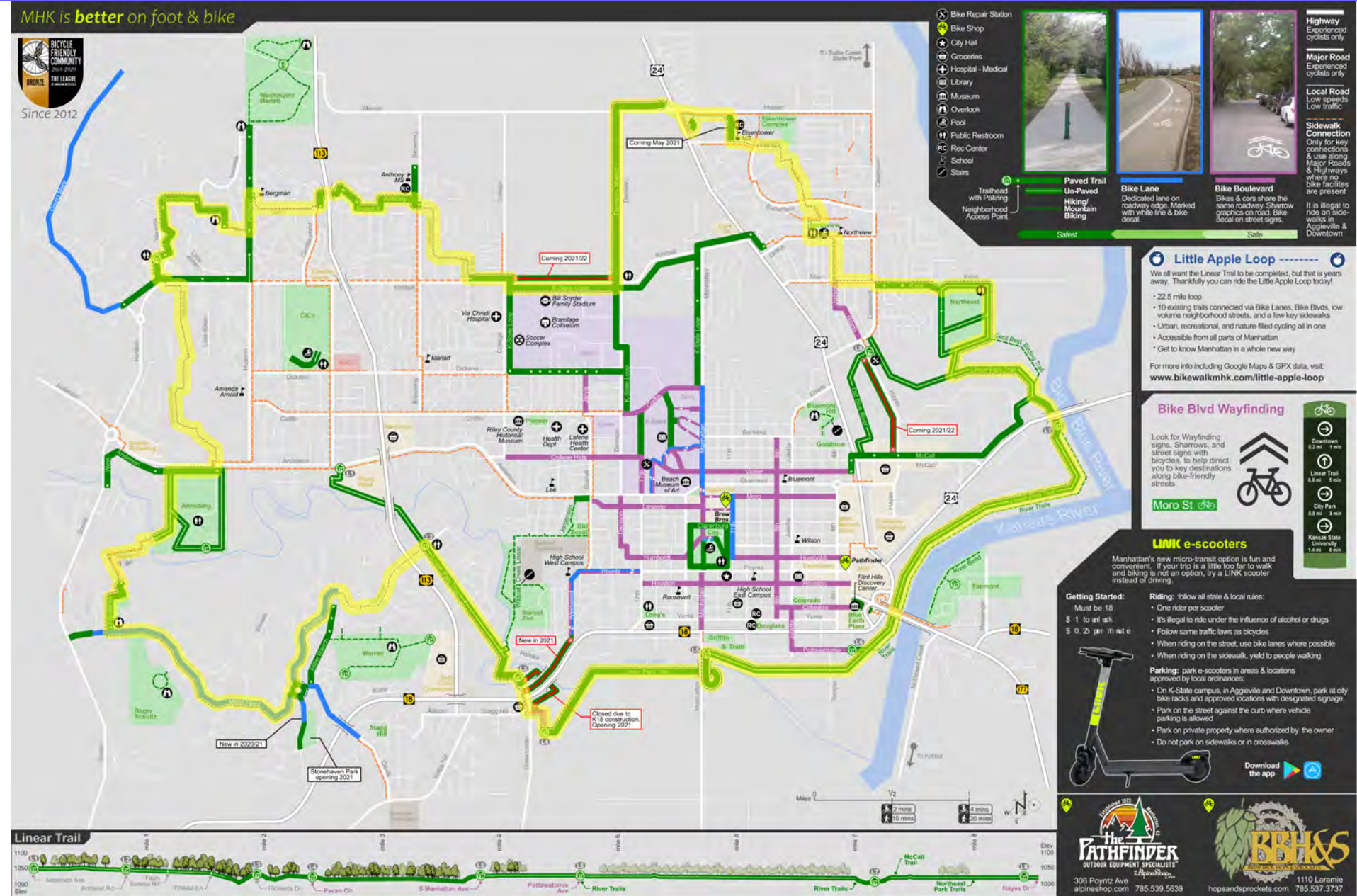
Little Apple Loop



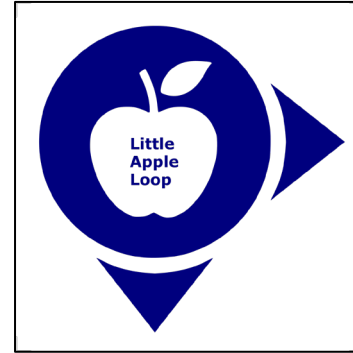
22.5 mile Loop

- 11 Trail segments
- Bike Lanes
- Bike Blvds
- Key Sidewalks
- All MHK neighborhoods

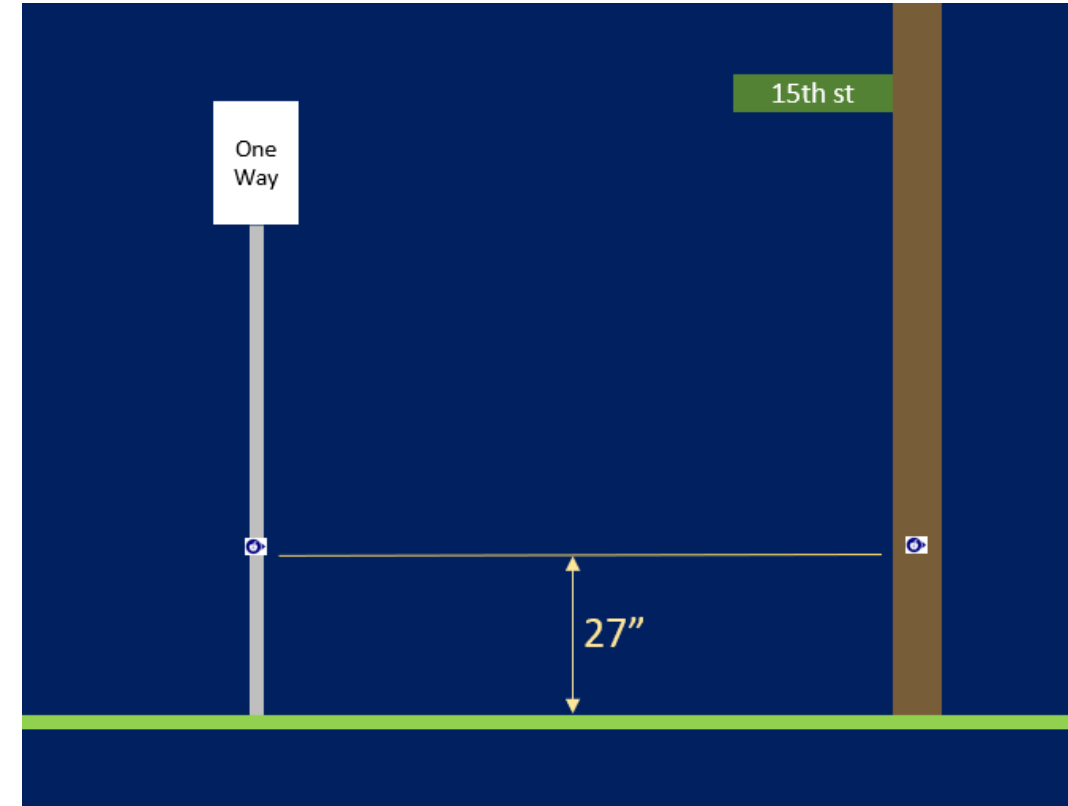
Sewn together with Signs



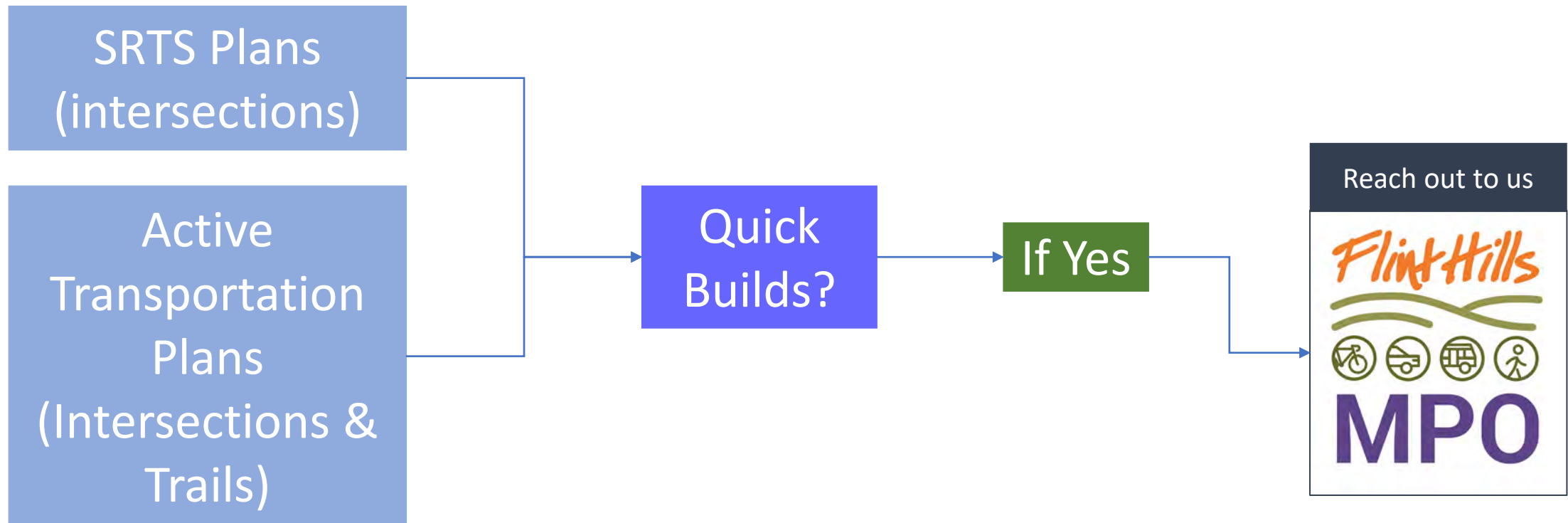
Sidewalk Graphics



Signs



- Go back over your plans and see if there are opportunities:



Thank you



Jared Tremblay

tremblay@flinthillsmpto.org

636.219.4139