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TRAIL USE TRENDS: LEVERAGING DATA TO MAKE THE CASE FOR TRAILS

AUGUST 11, 2020 WEBINAR

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Quick Survey

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Today's Presenters

Torsha Bhattacharya, Ph.D.
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Rails-to-Trails Conservancy

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Professor of City Planning
San Diego State University

Wade Johnston, AICP
Tri-State Trails Director,
Green Umbrella

Eric Oberg
Midwest Regional Director
Rails-to-Trails Conservancy
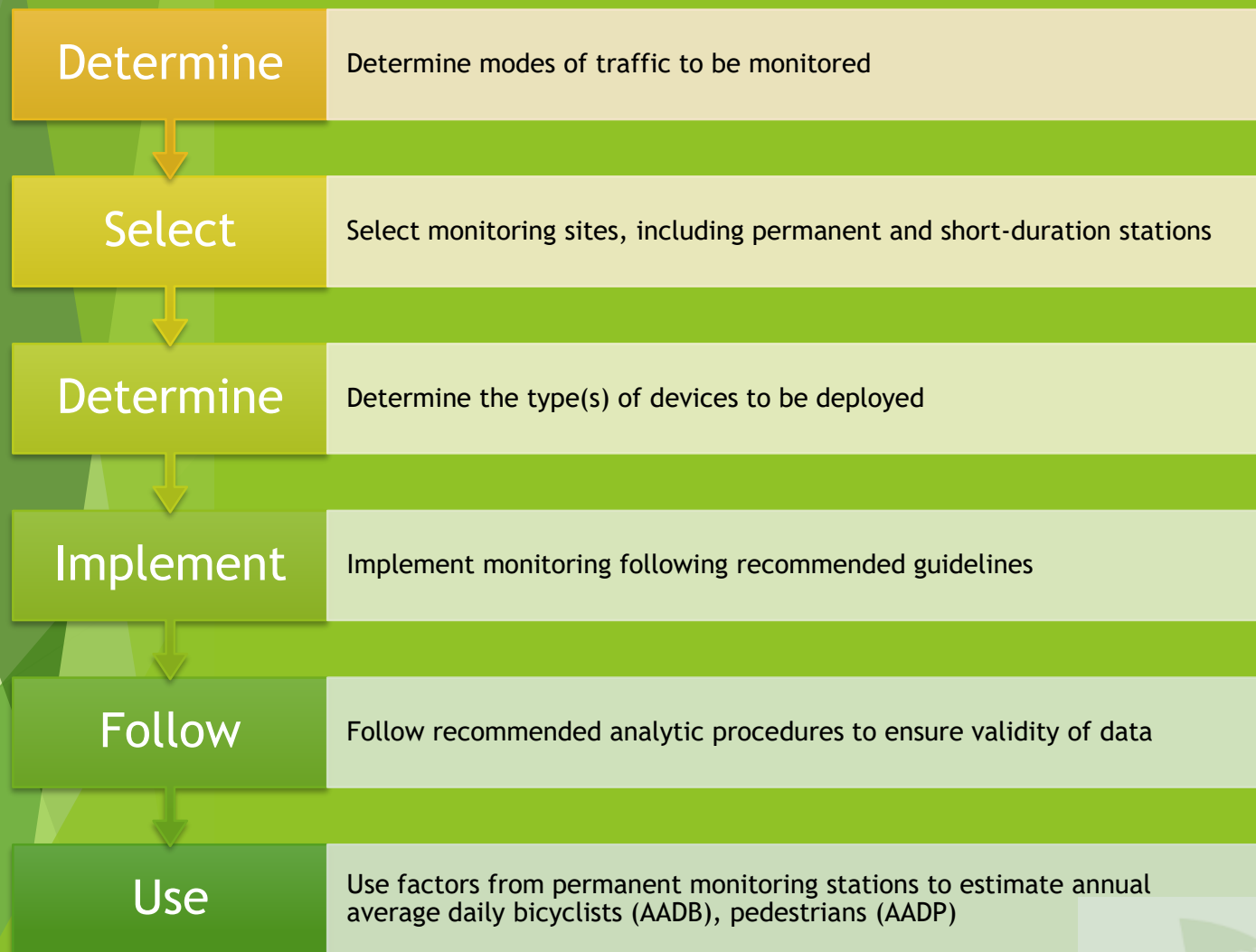
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Why count?

- Without data, you just have opinions

- Support funding applications

- Demonstrating growth and value of trails

- Planning/prioritizing projects

- Evaluation

- Safety analysis

- Travel demand models

If <u>YOU</u> don't count, then <u>TRAILS</u> won't count!

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Process

Determine	Determine modes of traffic to be monitored
Select	Select monitoring sites, including permanent and short-duration stations
Determine	Determine the type(s) of devices to be deployed
Implement	Implement monitoring following recommended guidelines
Follow	Follow recommended analytic procedures to ensure validity of data
Use	Use factors from permanent monitoring stations to estimate annual average daily bicyclists (AADB), pedestrians (AADP)

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Site Selection

Stratified systematic

Purposeful selection

Local partners/practical significance

Technology

- Inductive loops-permanent counts
- Pneumatic tubes- temporary/short-duration
- Infrared sensors-both bike and ped

In-field validation

- Visual inspection of data
- Use of pre-specified criteria to identify potential outliers
- Assessment of zero counts
- Use of professional judgment to censor counts believed to be invalid

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Study: IHTC trail count program

- ▶ RTC established three objectives for the program:

- ▶ Document use on existing trails using procedures consistent with *TMG* principles

- ▶ Inform comprehensive regional monitoring efforts

- ▶ Develop tools to support trail planning, including factors for extrapolating short-duration counts and estimates of network use

- ▶ Stratified random sampling for factors – Urban, Suburban, Rural, Parks, Forest

Different pattern

Different volumes

Generalize results

6 within each class – a total of 30 sites
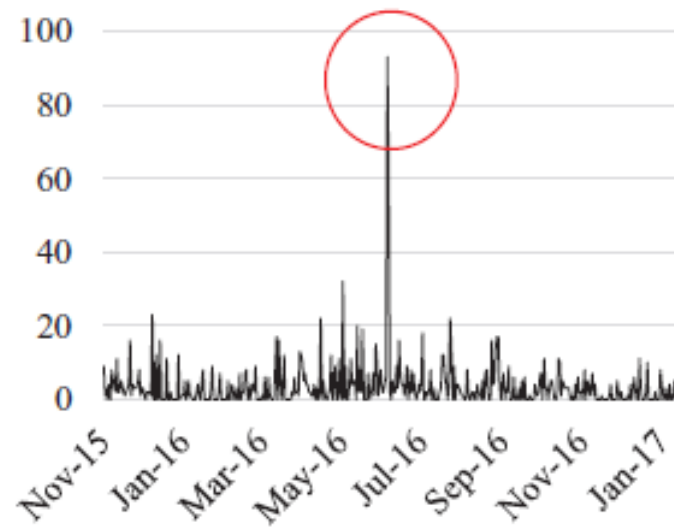
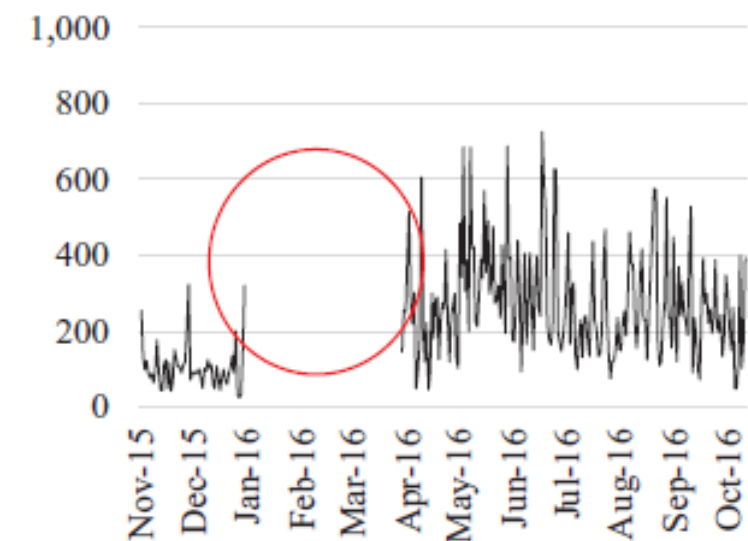Feasibility of access and installation

A. Normal Pattern
Suburban #12
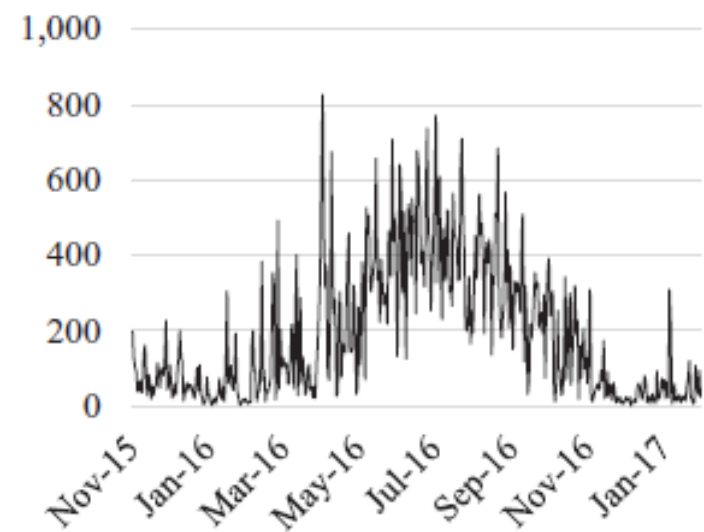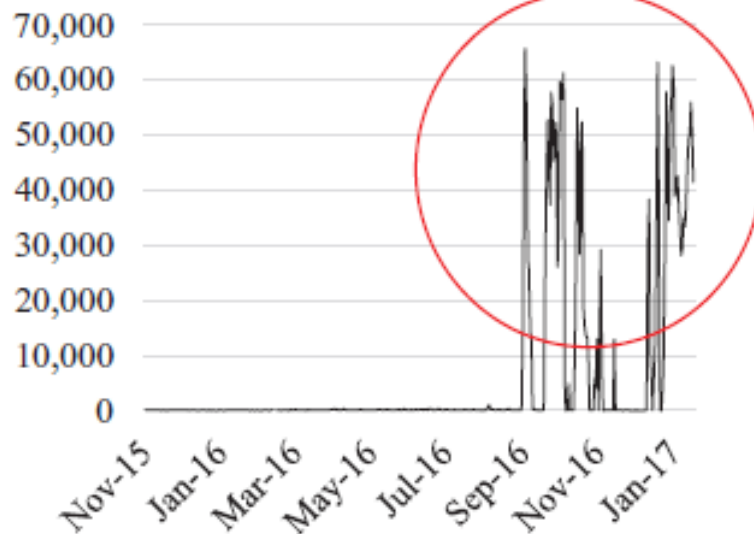
B. Normal Pattern with Greater Variation
Parks #4
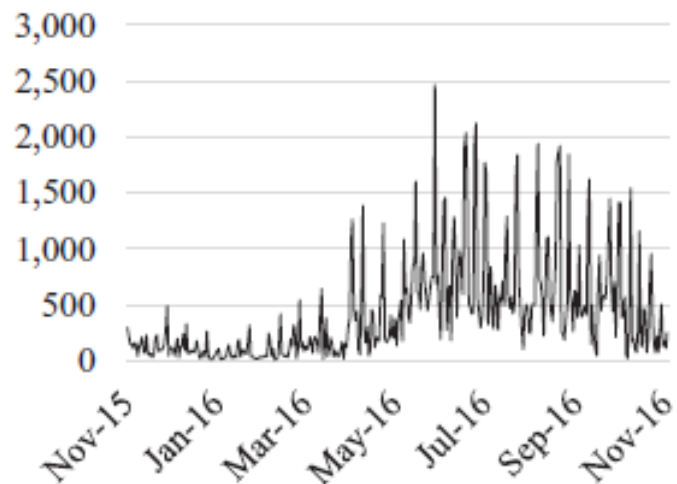
**C. Outliers**
Forest #28

**D. Missing Days**
Urban #1

E. Counter with Errors
Suburban #9

A. **Normal Pattern** – ADTT is 189.

B. **Normal Pattern with Greater Variation** – Maximum daily count is 2988 while minimum daily count is 10. ADTT is 422.

C. **Outliers** – Maximum daily count is 93 while ADTT is 4.

D. **Missing Days** – 89 days mis[sing] from January to April. ADT[T]

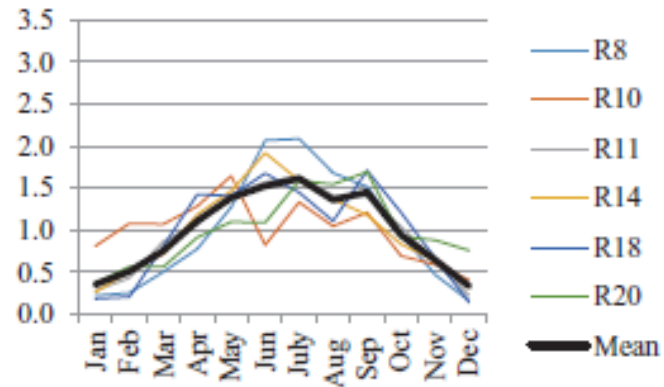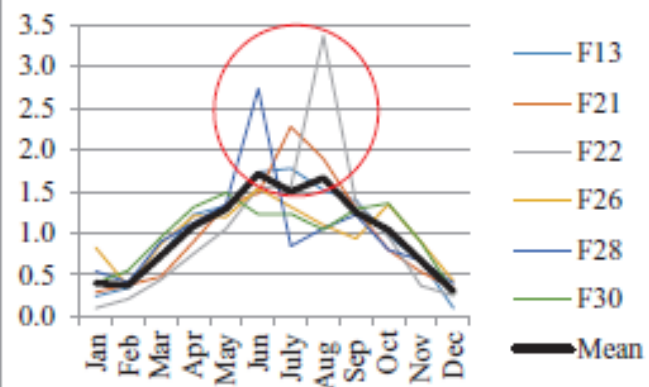E. **Counter with Errors** – 21 d[ays] counts over 50,000. ADTT i[s]

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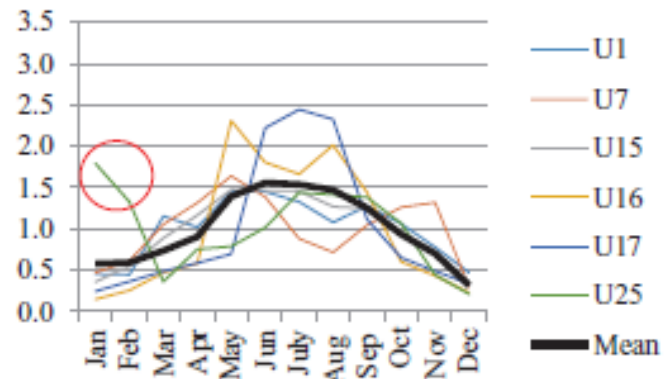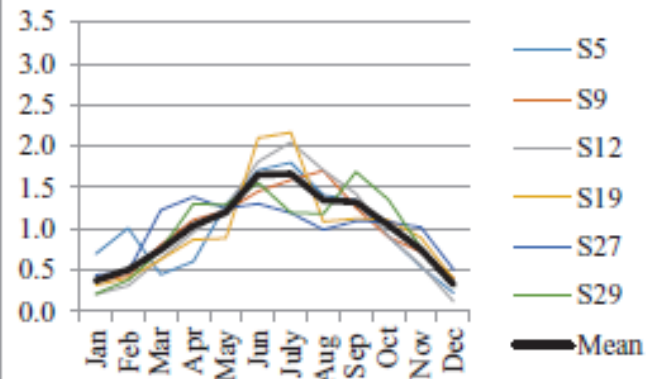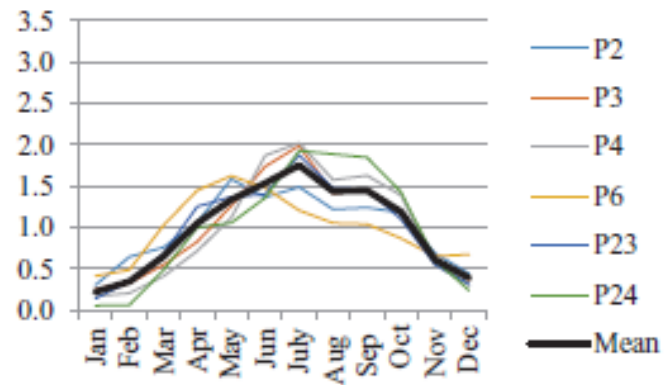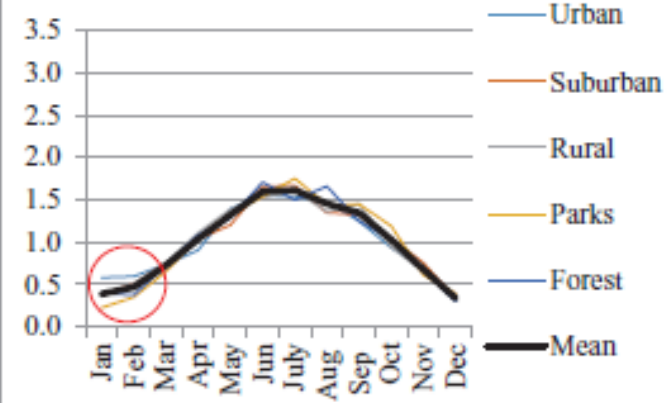
Strategies

▶ Land use

▶ Factor

▶ Volume

▶ Location

▶ Vary segment length by land use

▶ 5 miles for forest, 2 miles for suburban and rural, 1 mile for urban and park

▶ May-October monitoring period

▶ 14 permanent and 16 short-term counters, 10 days and 7-day short duration counts

    ▶ Missing data

    ▶ Erroneous counts

    ▶ Only 19 valid counters out of 30

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Distinguishing Utilitarian, Recreational and Mixed-Use trail use

- ▶ Weekday/ weekend ratio
- ▶ AM /Noon ratio

Eco Counters

▶ http://data.eco-counter.com/ParcPublic/?id=4275#
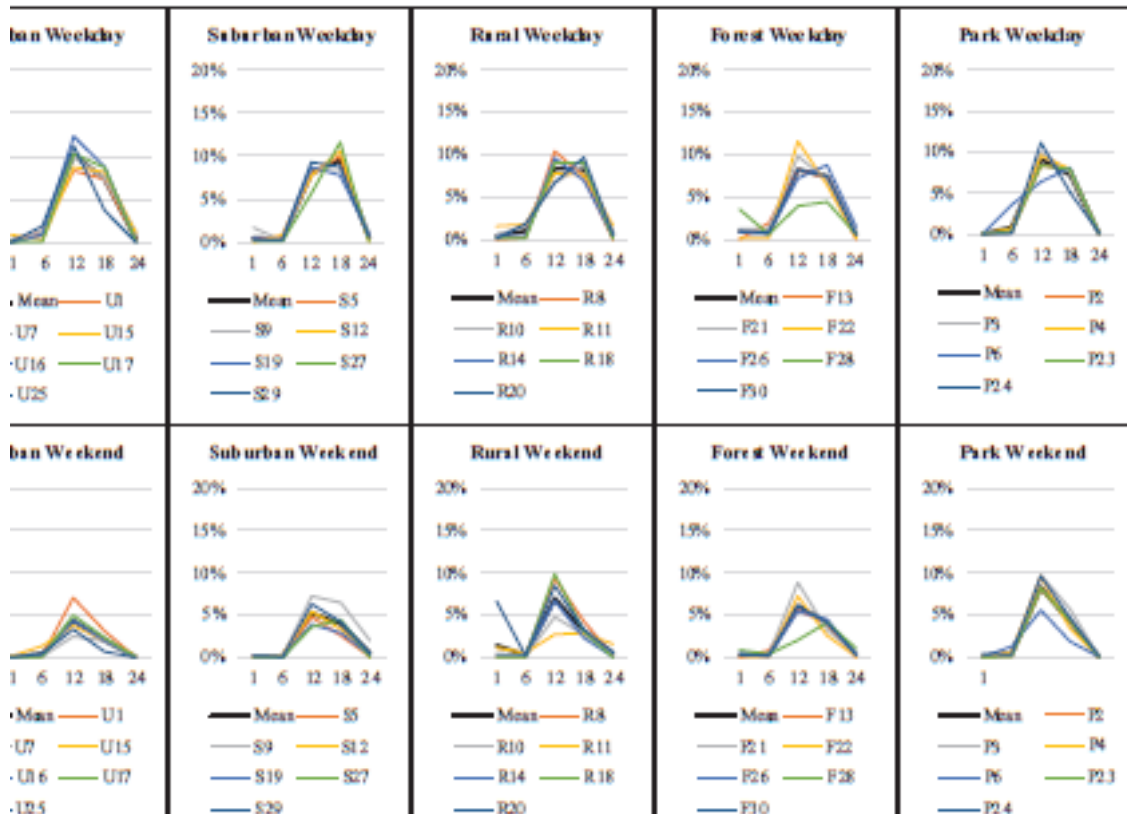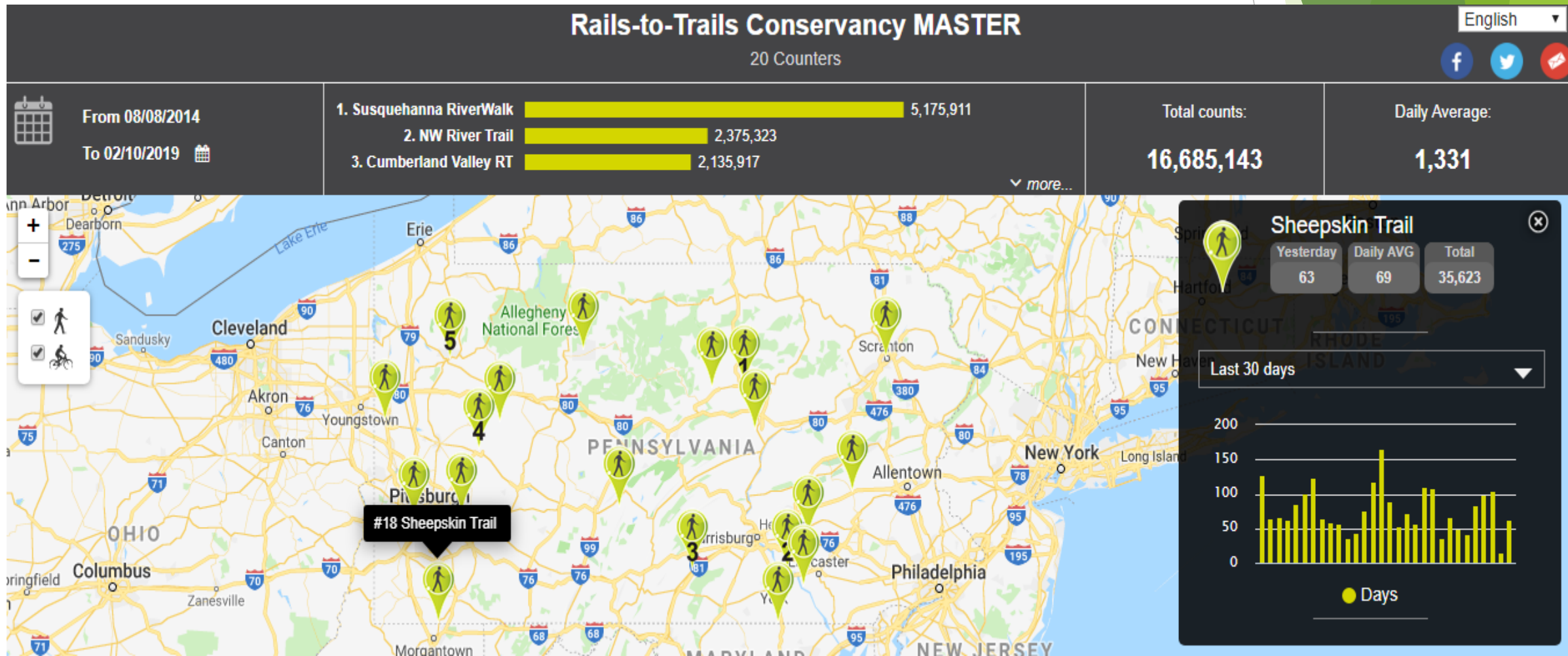
RTC National Counters

COVID-19 and trails

▶ https://www.railstotrails.org/COVID19/#trailcount

Weekly Trail Counts 2019-2020
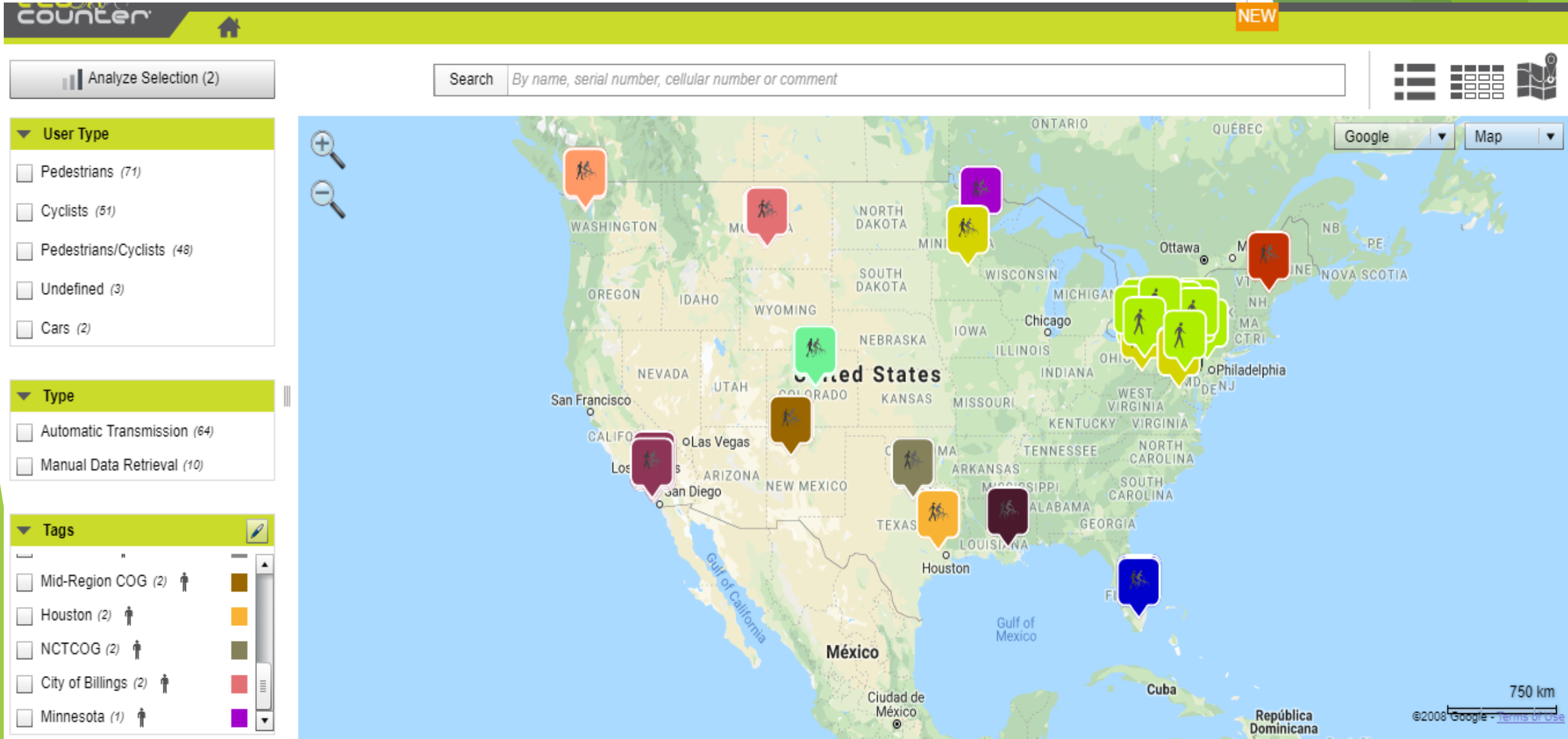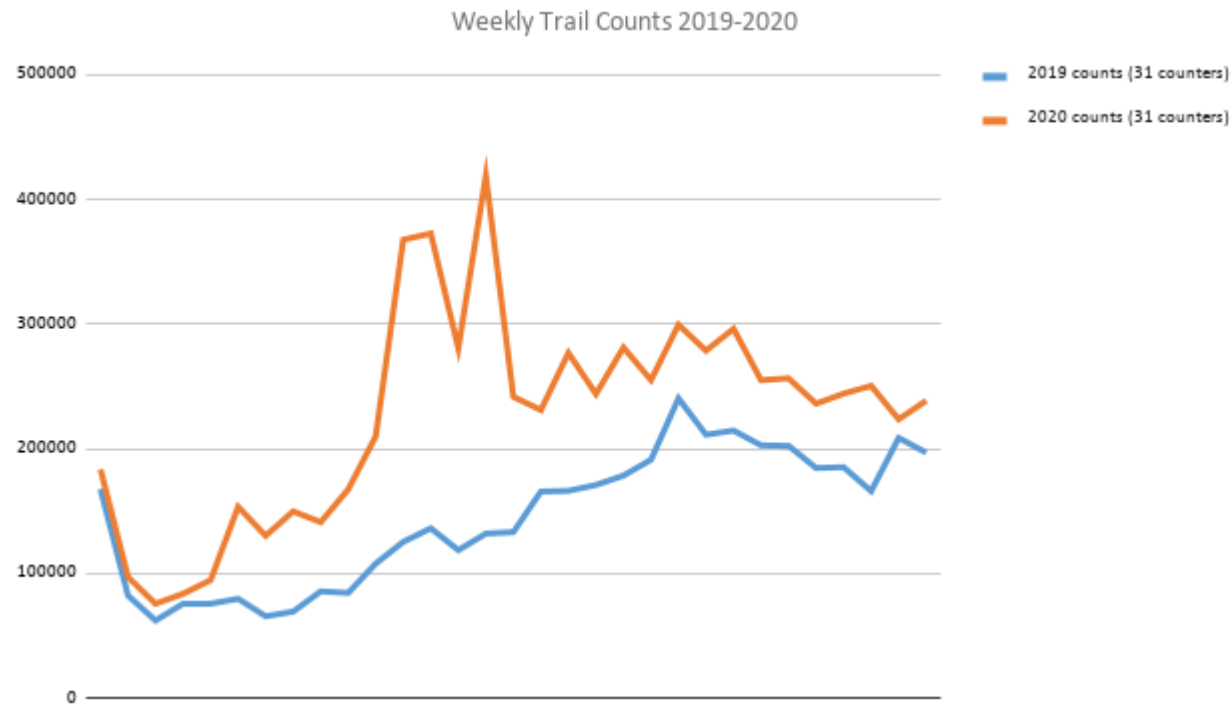
Strava Metro Data
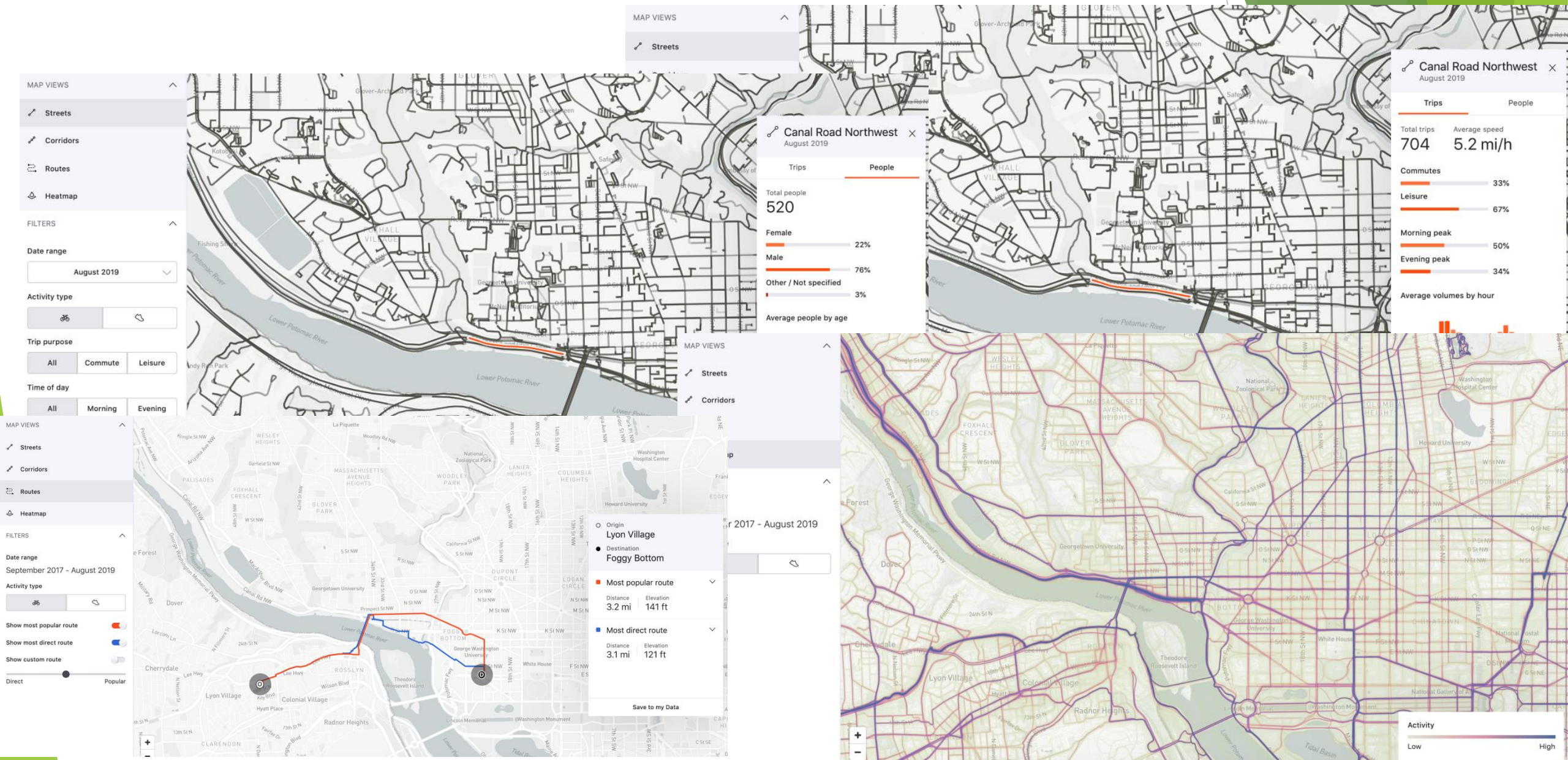
Regional Data Collection/Sharing

Data collected by regional and local agencies

Allow for multiple types of data collection
- Permanent automated counters
- Mobile automated counters
- Manual counts

Use for projections where other data not available

Historic mode share trends

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Regional Trail Count Program Recommendations

▶ Web-based data sharing: available to public

▶ Counter equipment loaner program, including training

▶ Consistent guidelines for data collection

▶ Include count equipment in project costs

▶ Explore use of crowdsourced /Strava data

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Resources

Guidebook on Pedestrian and Bicycle Volume Data Collection, NCHRP Report 797, 2014

Methods and Technologies for Pedestrian and Bicycle Volume Data Collection, NCHRP Web-Only Document 205, 2014

National Bicycle and Pedestrian Documentation Project, www.bikepeddocumentation.org

Pedestrian and Bicycle Information Center, www.pedbikeinfo.org

Traffic Monitoring Guide, FHWA, 2016, https://www.fhwa.dot.gov/policyinformation/tmguide/

Coding Nonmotorized Station Location Information in the 2016 Traffic Monitoring Guide Format, https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/tmg_coding/

Challenges in Monitoring Regional Trail Traffic.
 Greg Lindsey et al. 2018. Transportation Research Record
https://journals.sagepub.com/doi/abs/10.1177/0361198118787996

Questions?

Torsha Bhattacharya

Director of Research

Rails-to-Trails Conservancy

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Let's
make
moves.

Trail Use Trends - August 11, 2020

TRI STATE
TRAILS

Photo credit: Great Parks of Hamilton County

What We Do

EXPAND
advocate for connecting and expanding the regional trail and bikeway network

LEARN
collect and maintain data on trails locally

ASSIST
provide technical assistance to local governments and community groups

CONNECT
convene trail planners, managers, advocates, and users to share best practices

PROMOTE
promote and celebrate existing trails in the tri-state

Trail Monitoring Program

- Established in 2017 to collect reliable data source for trail usage
- Funded by the generous support of Interact for Health
- Comprehensive, regional approach
- Permanent counting sites and 7-day short duration counts generate 2 key metrics:
    1. Average Annual Daily Trail Traffic
    2. Trail Miles Traveled

Goals

- Document use of regional trails to understand the impact of the trail network over time
- Establish a standardized regional trail measurement methodology
- Generate useful data and information about the trail network for trail managers and advocates to justify investment

Partnering Organizations

TRI STATE TRAILS
connecting what moves us.

2017 Trail Network

— Existing Trail
— Existing Bike Lanes

Miles
0 2.5 5 10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.
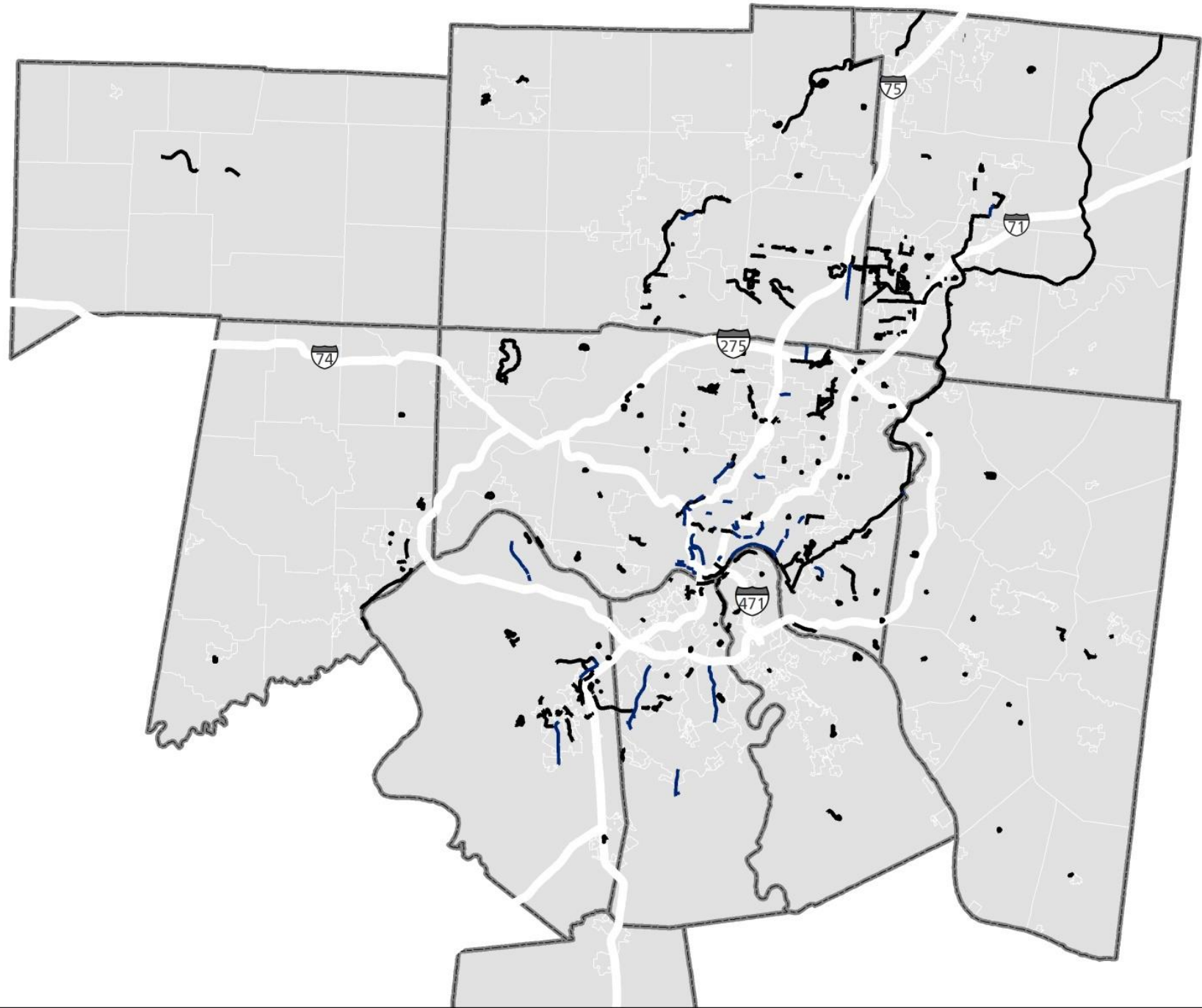
Tri-State Trails
connecting what moves us.

2017 Partner Counter Locations
- FLMSP
- GPHC

2017 Trail Network
— Existing Trail
— Existing Bike Lanes
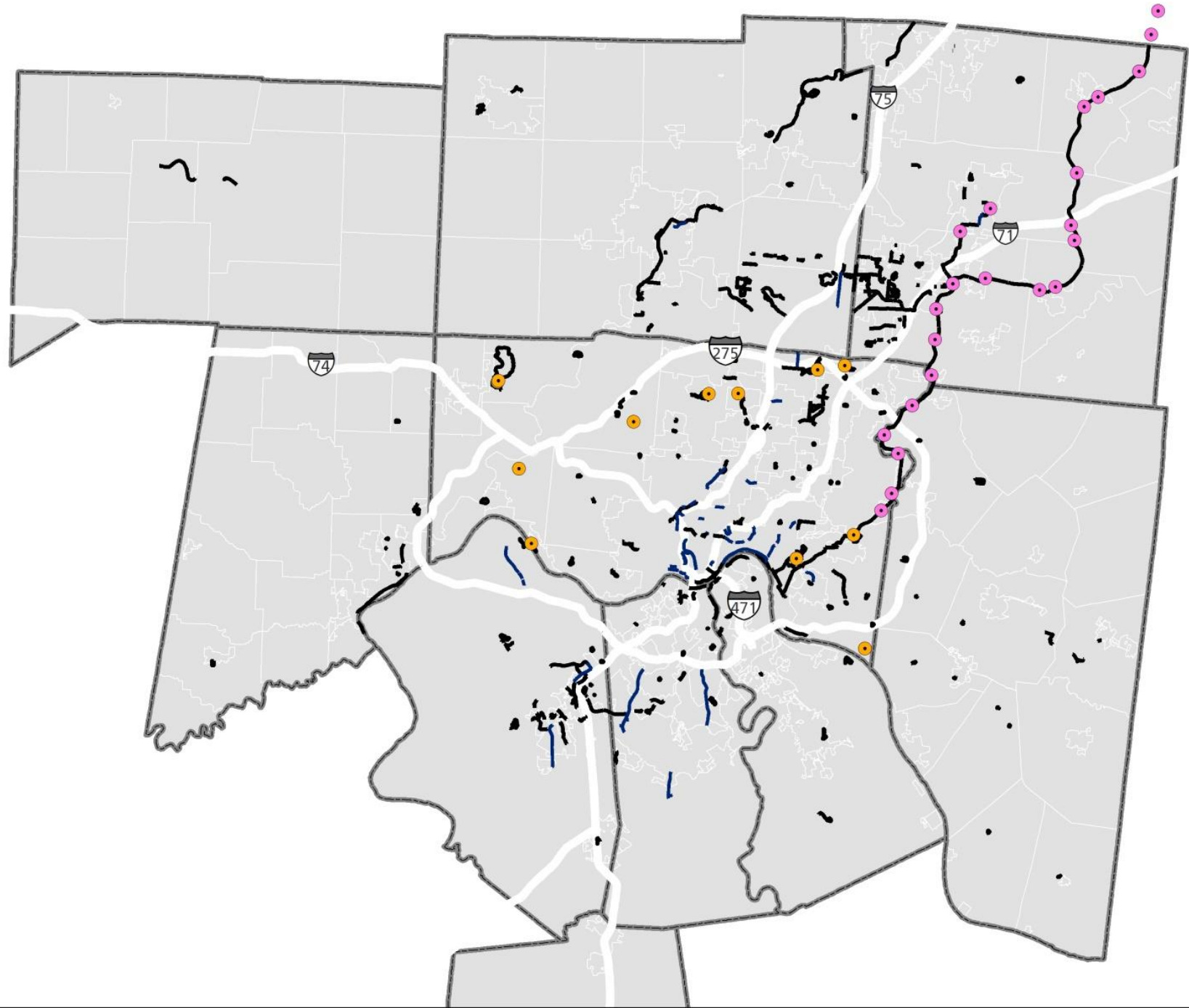
Miles
0 2.5 5 10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

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2017 Trail Monitoring Program

——— Existing Trails ~2 miles

- - - - Anticipated in ~5 years

Miles
0 2.5 5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.
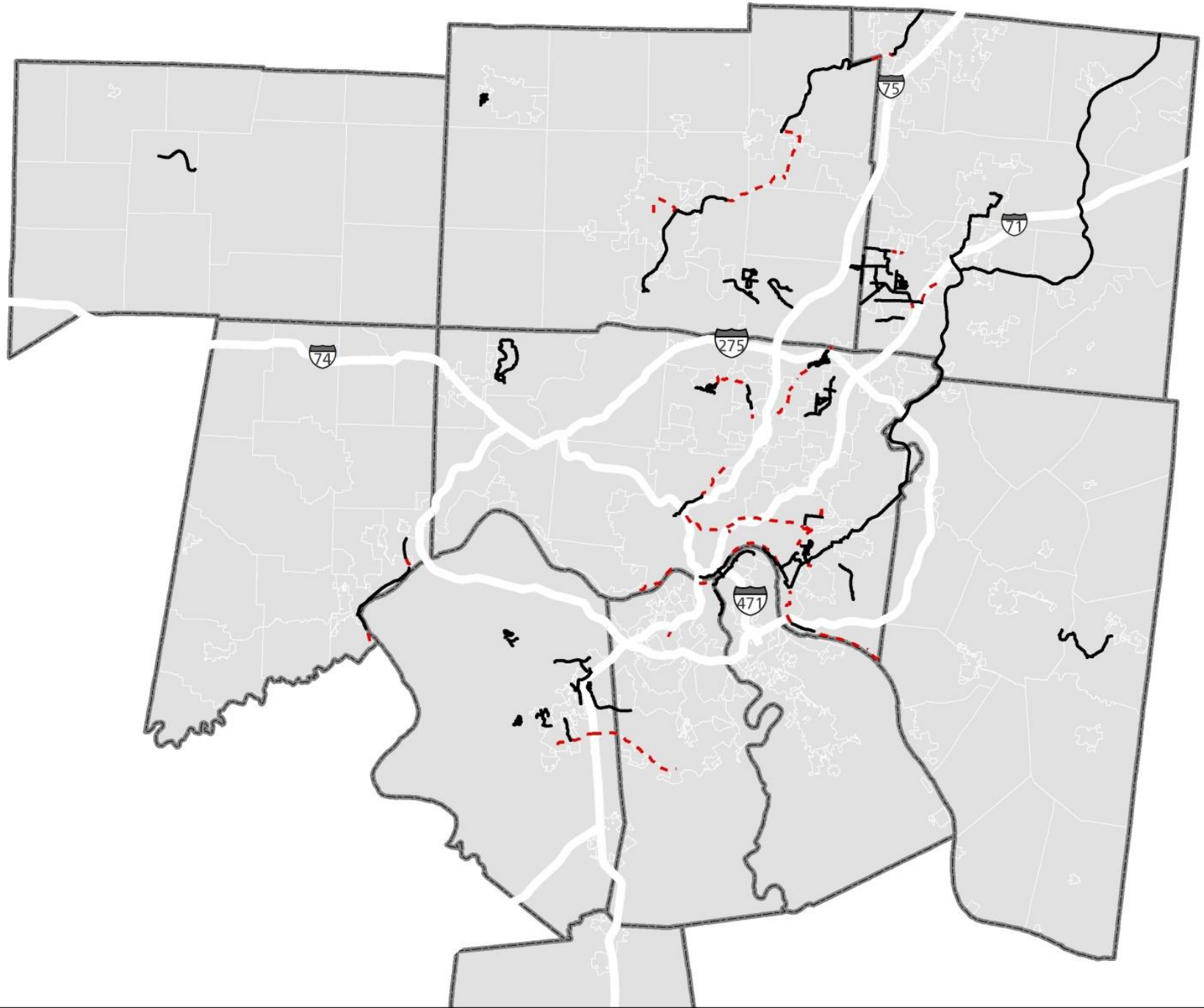
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2017 Trail Counting Plan

- ★ (blue) Long Term
- ⊕ (green) Short Term, high priority
- ⊕ (yellow) Short Term, low priority
- ⊕ (red) Short Term, redundant
- ● (purple) Short Term, exploratory
- —— Existing Trails ~2 miles
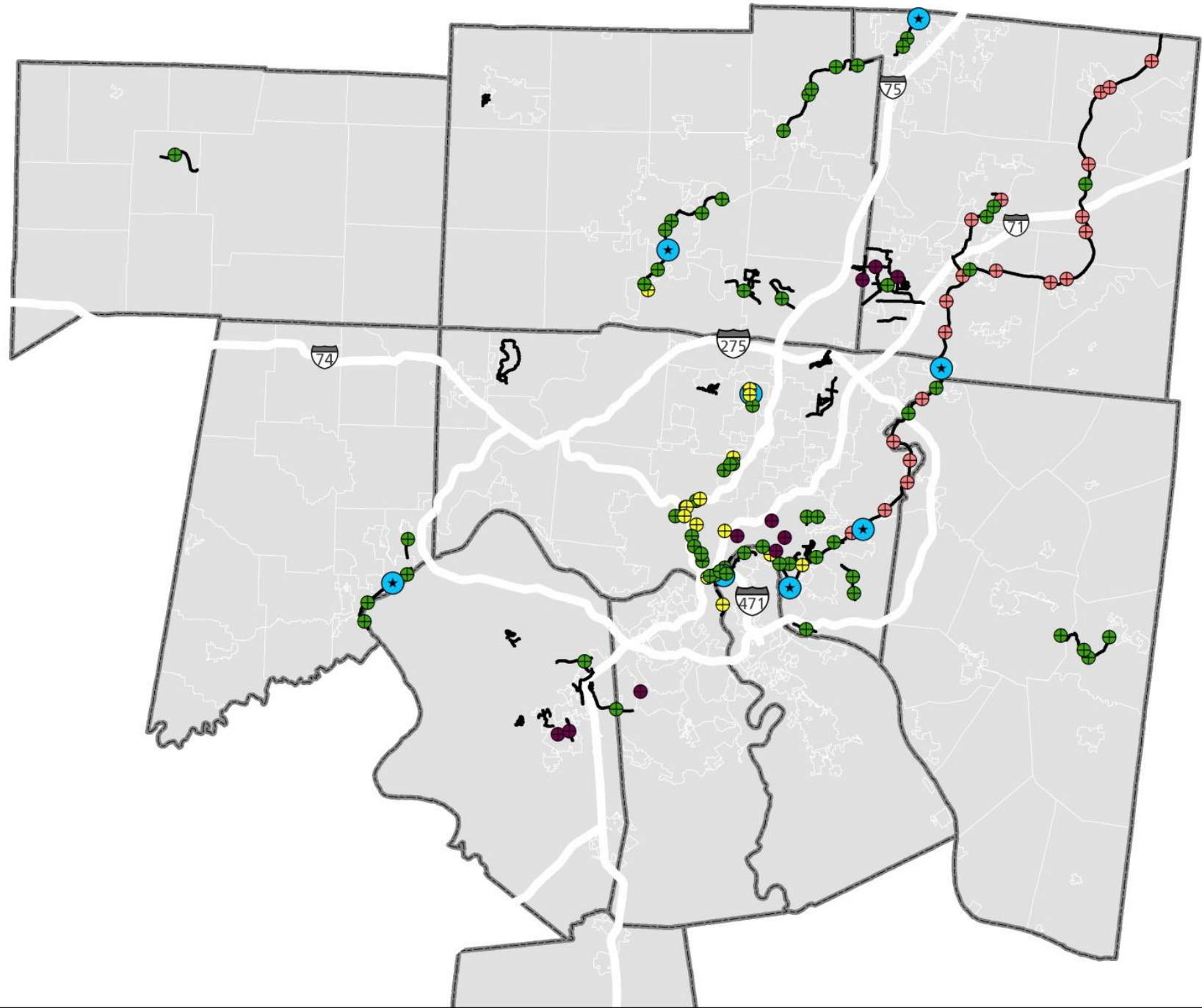
Miles
0 2.5 5 10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

Tri-State Trails
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2017 Trail Counter Locations
- Long Term Count
- Short Term Count
- Trail Segments

Miles
0 2.5 5 10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.
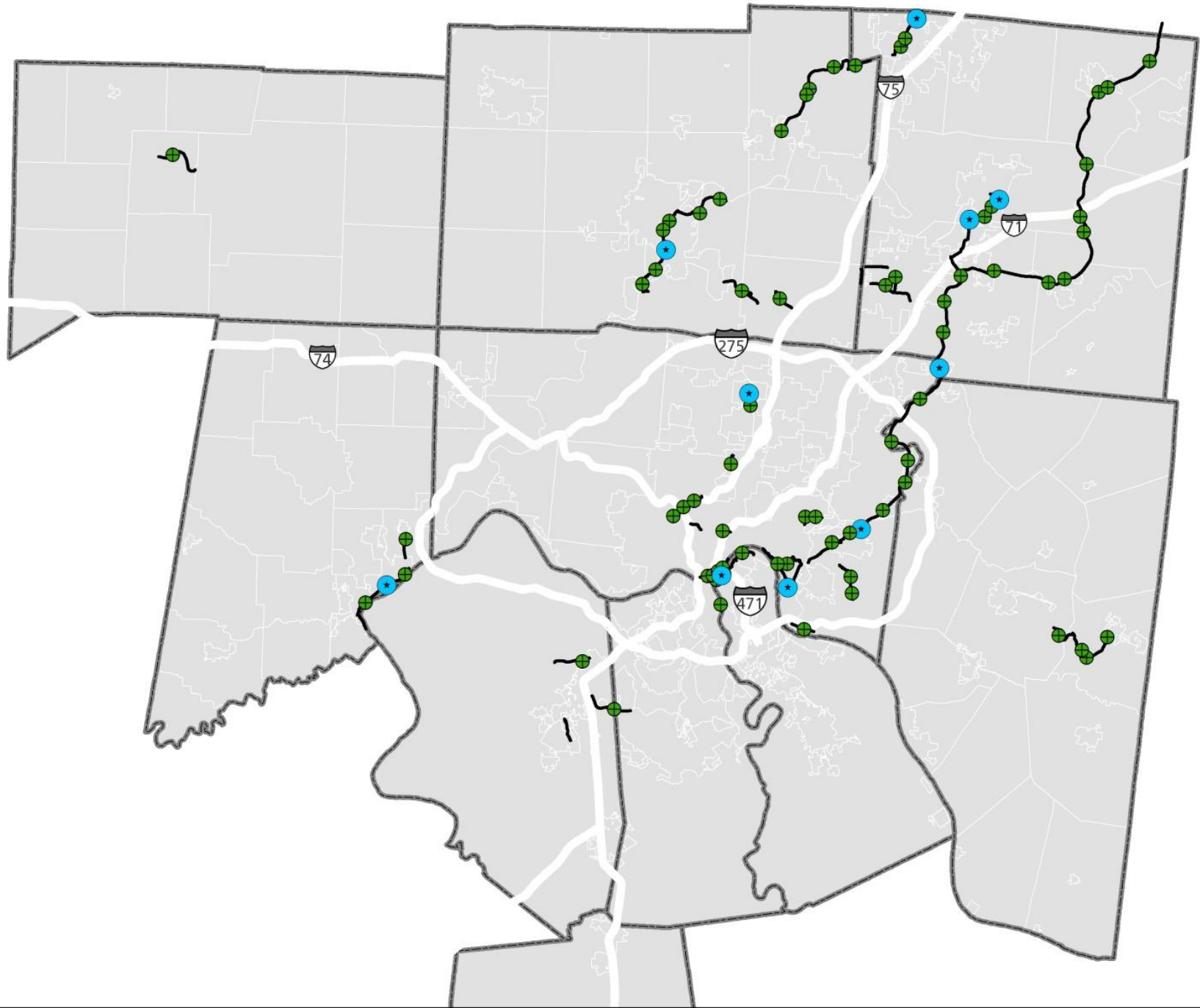
TRi STATE TRAILS
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2017 Trail Monitoring Analysis

AADTT

— 8 - 100
— 101 - 250
— 251 - 500
— 501 - 1,000
— 1,001 - 1896
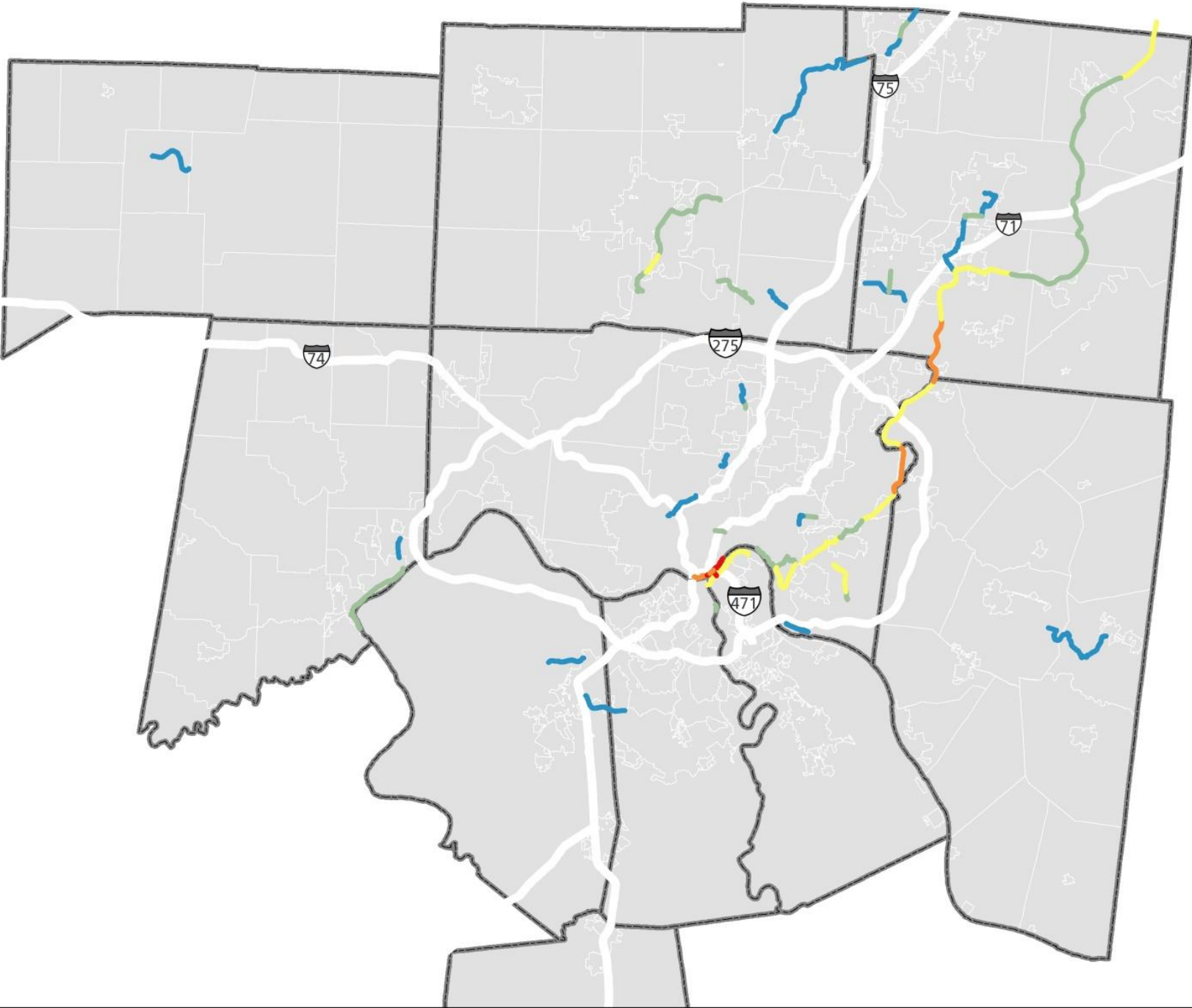
Miles
0   2.5   5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

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TRAILS
connecting what moves us.

2018 Trail Counter Locations

⬤ Long Term Count

⬤ Short Term Count

— Trail Segments

Miles
0   2.5   5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

TRi STATE
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2018 Trail Monitoring Analysis

AADTT

— 9 – 100
— 101 – 250
— 251 – 500
— 501 – 1,000
— 1,001 – 2,034
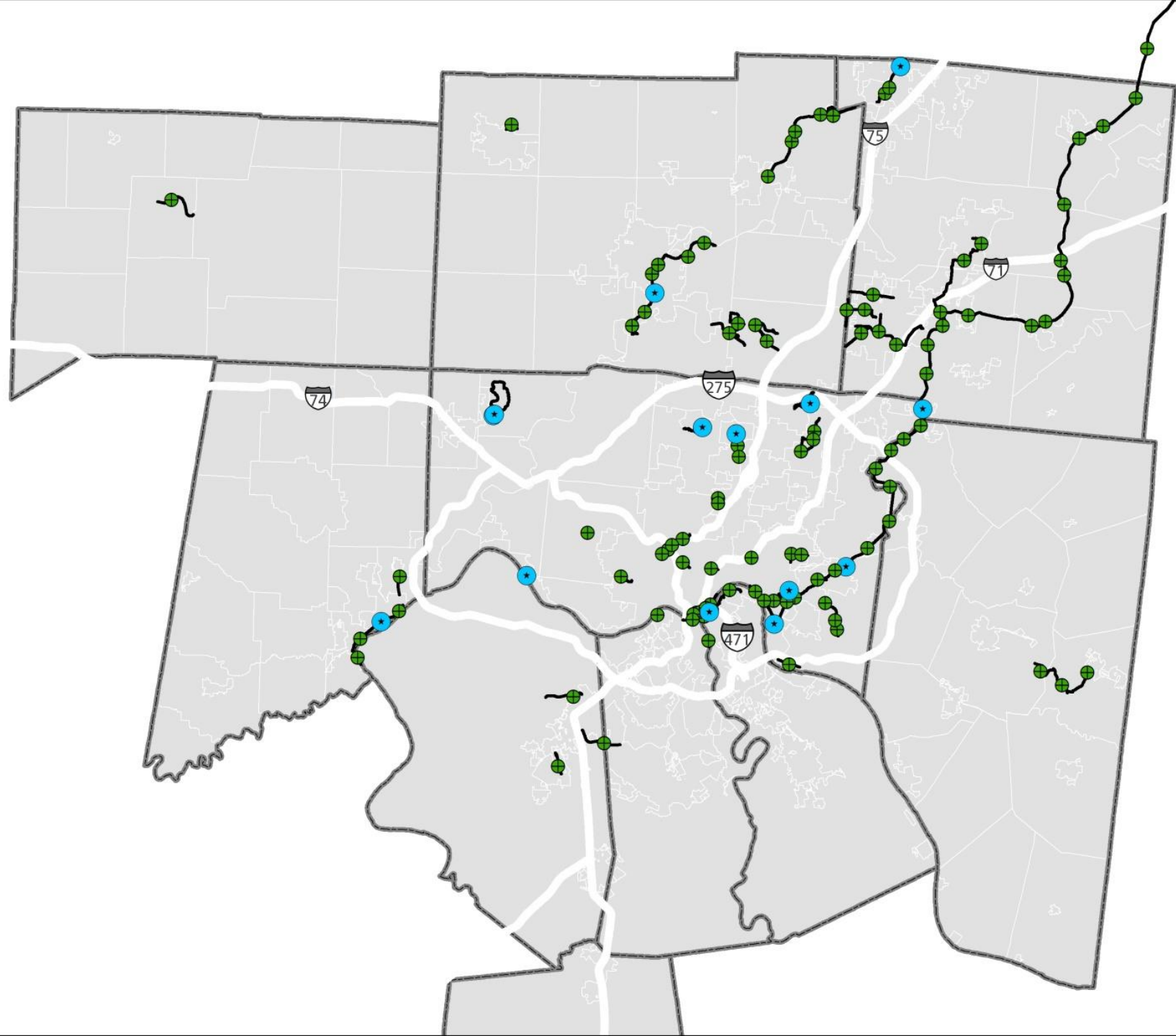
Miles
0   2.5   5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

TRi-STATE TRAILS
connecting what moves us.
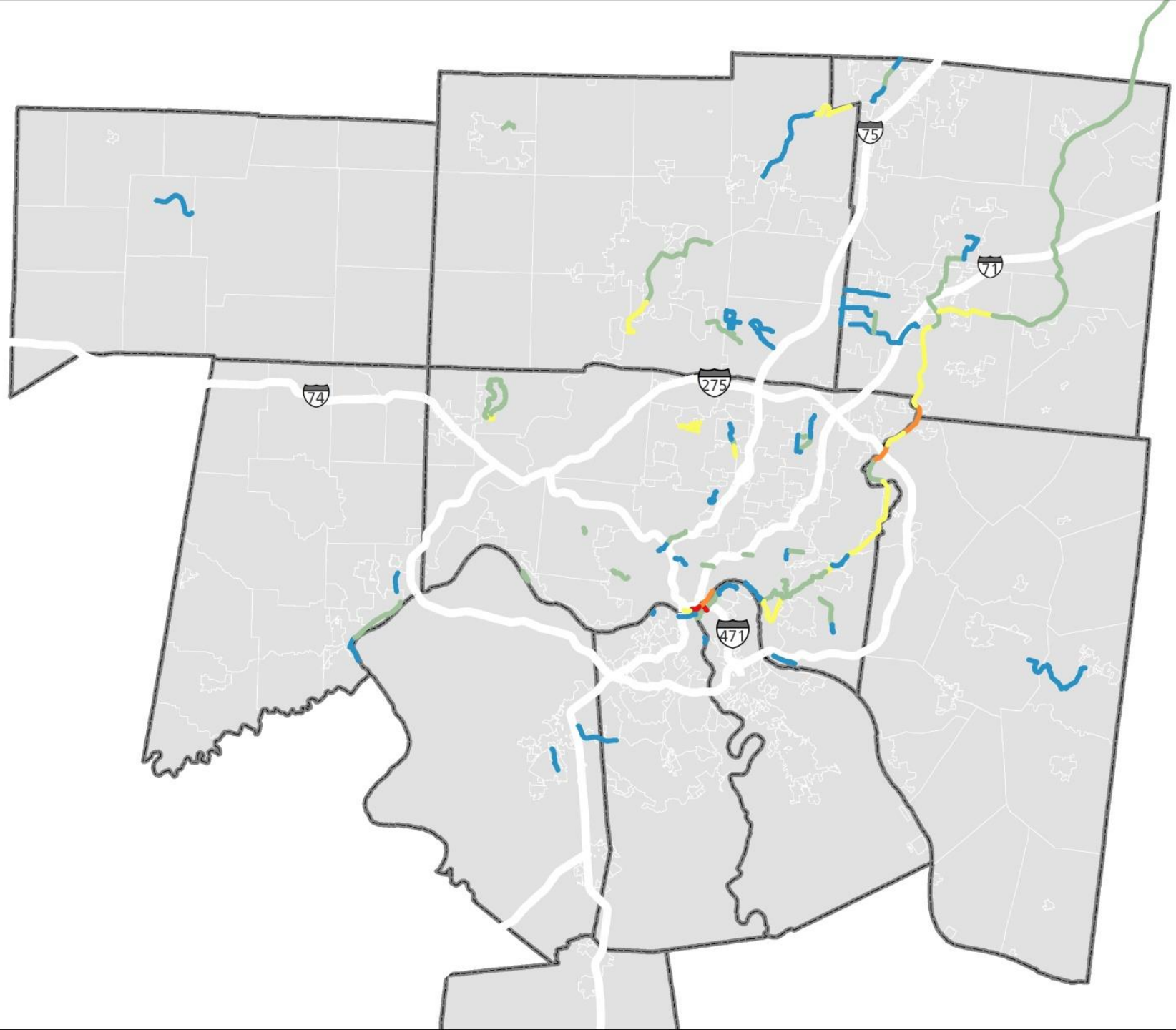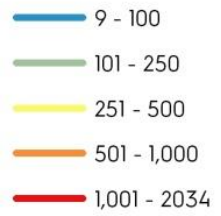
2019 Trail Counter Locations
- ⬤ Long Term Count
- ⬤ Short Term Count
- ▬ Trail Segments
- ▬ Planned Trails
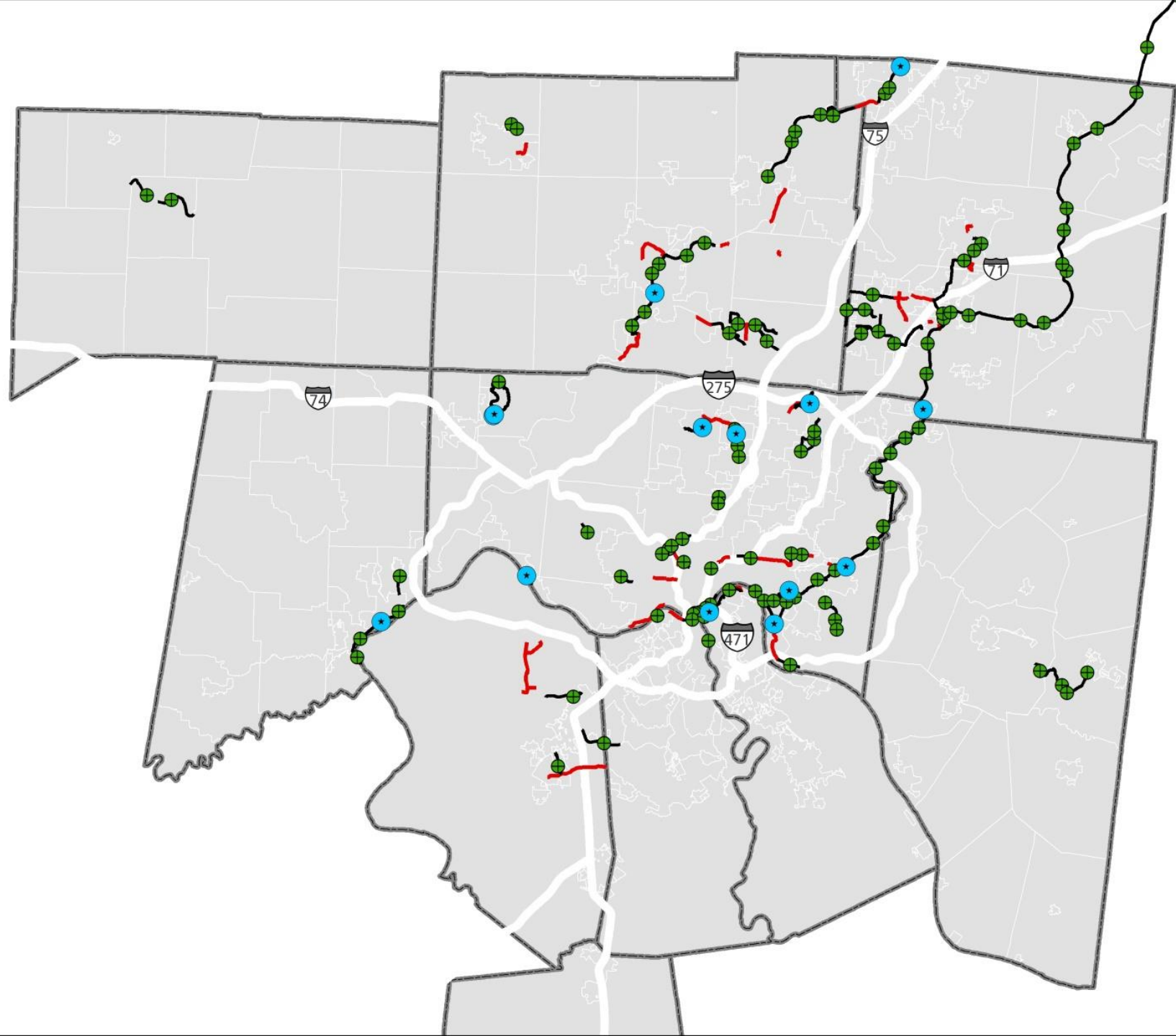
Miles
0   2.5   5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.

Annual Metrics Dashboard

	2017	2018	2019
Long Term Counters	10	14	14
Short Term Counts	51	99	109
Trail Miles Monitored	136	187	197
Average Annual Daily Trail Traffic	252	216	TBD
Trail Miles Traveled	11,121,318	12,738,756	TBD

2017 Trail User Intercept Survey

Survey by the numbers…

- 20 survey locations
  - 1 weekday, 1 weekend
- Staggered 3-hour time periods from 7 AM to 7 PM
- 111 survey hours
  - 3 periods cancelled for weather
- 738 survey responses

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2017 Trail User Intercept Survey

▲   2017 Survey Locations

•   Trail User Locations

—   Trail Segments

Miles
0   2.5   5   10

Date: August 7, 2020
Source: Tri-State Trails, TIGER.
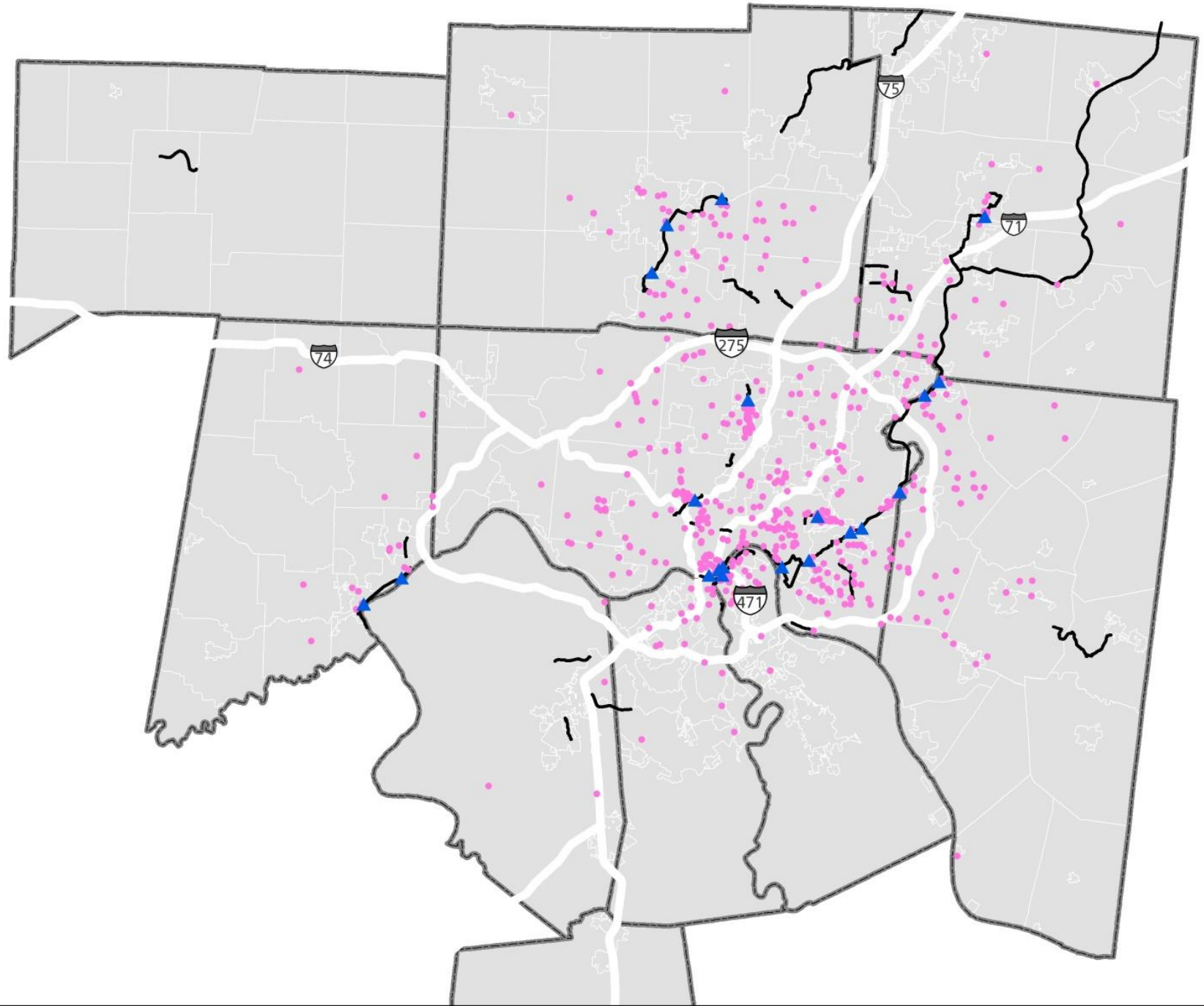
REASON FOR TRAIL USE

88% Recreation & Exercise

5% Commuting

3% Travel or Shopping

5% Other

PRIMARY ACTIVITIES ON THE TRAILS
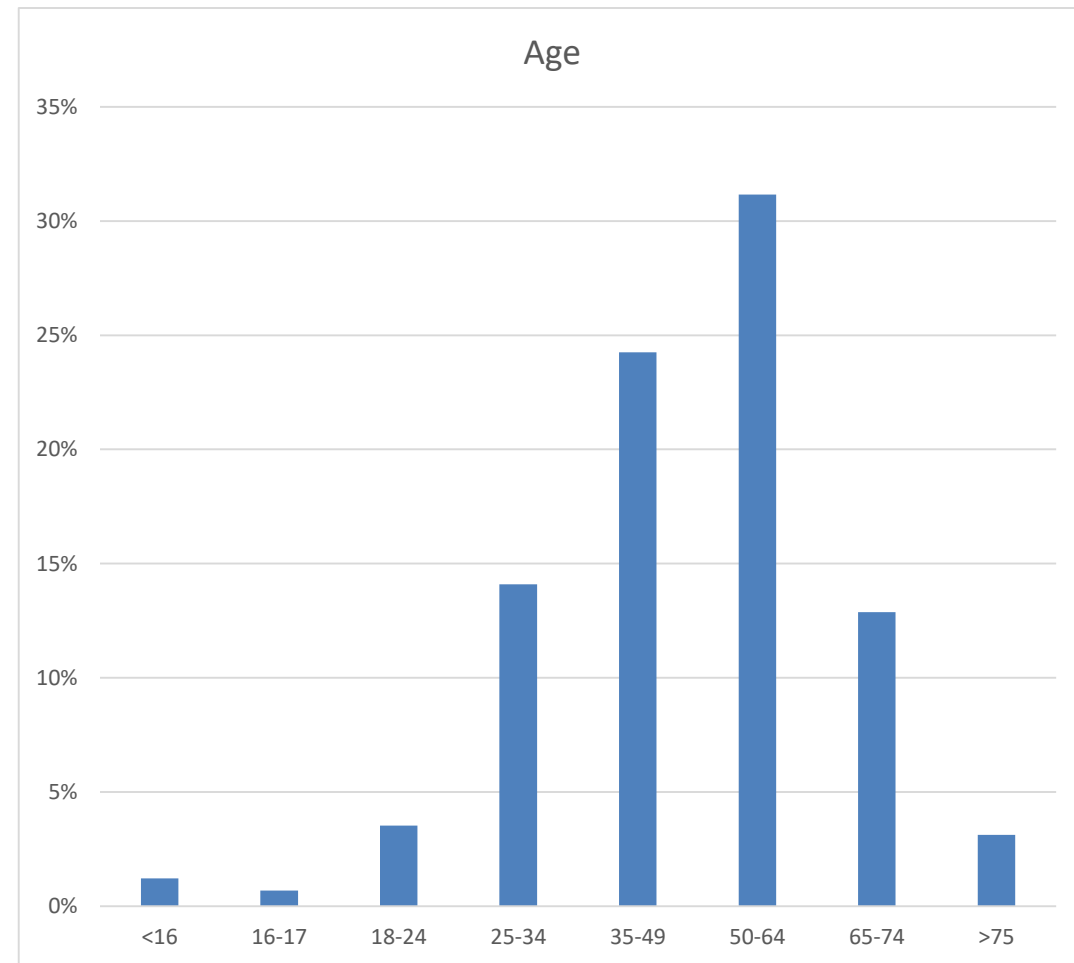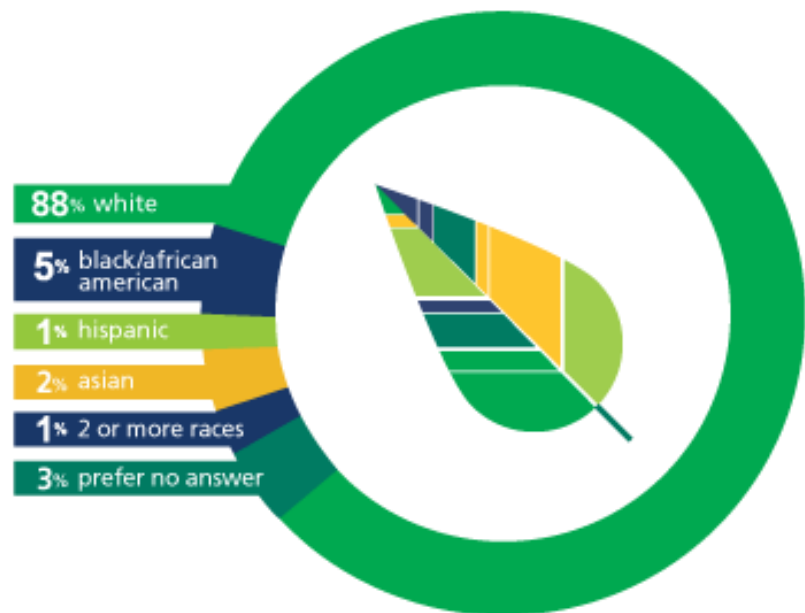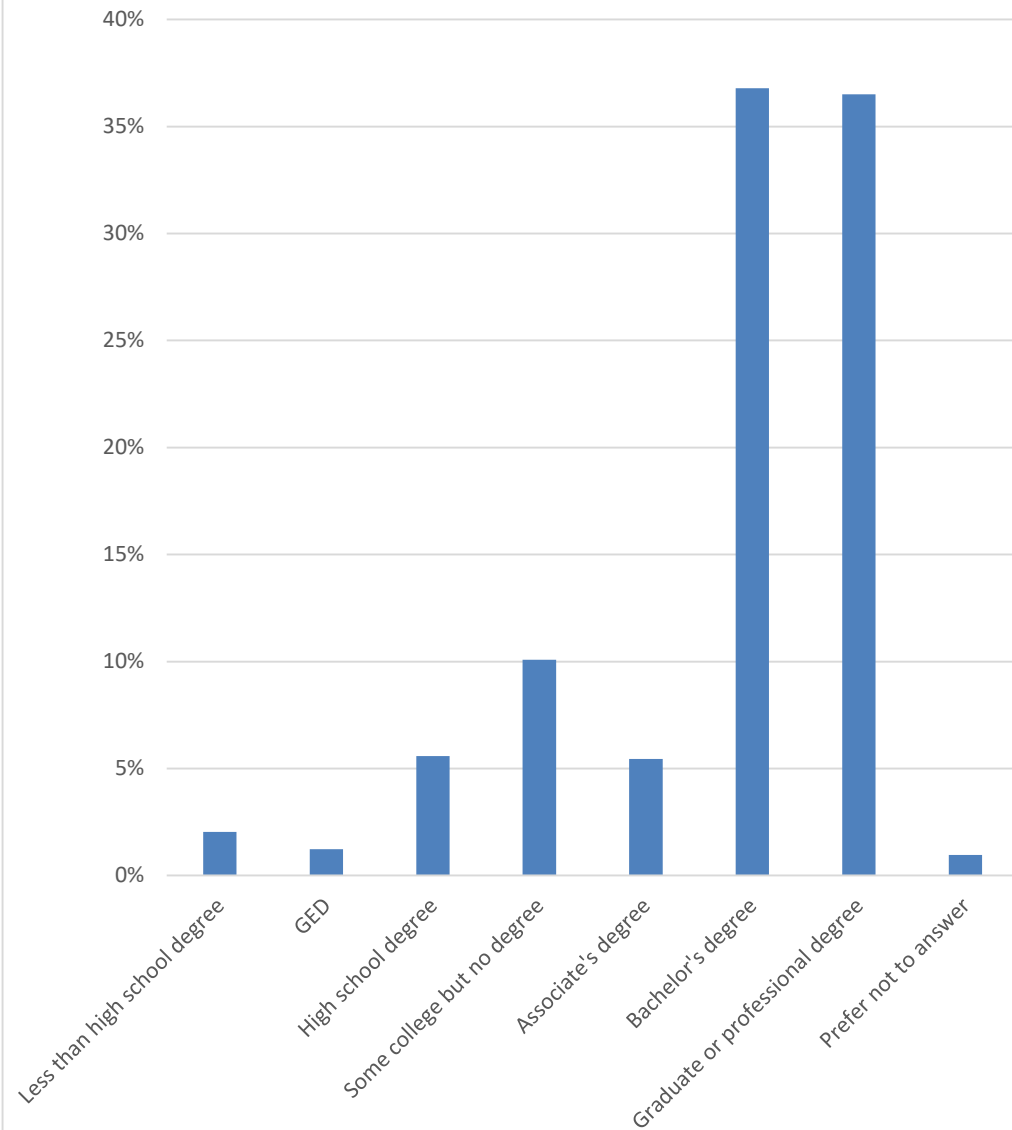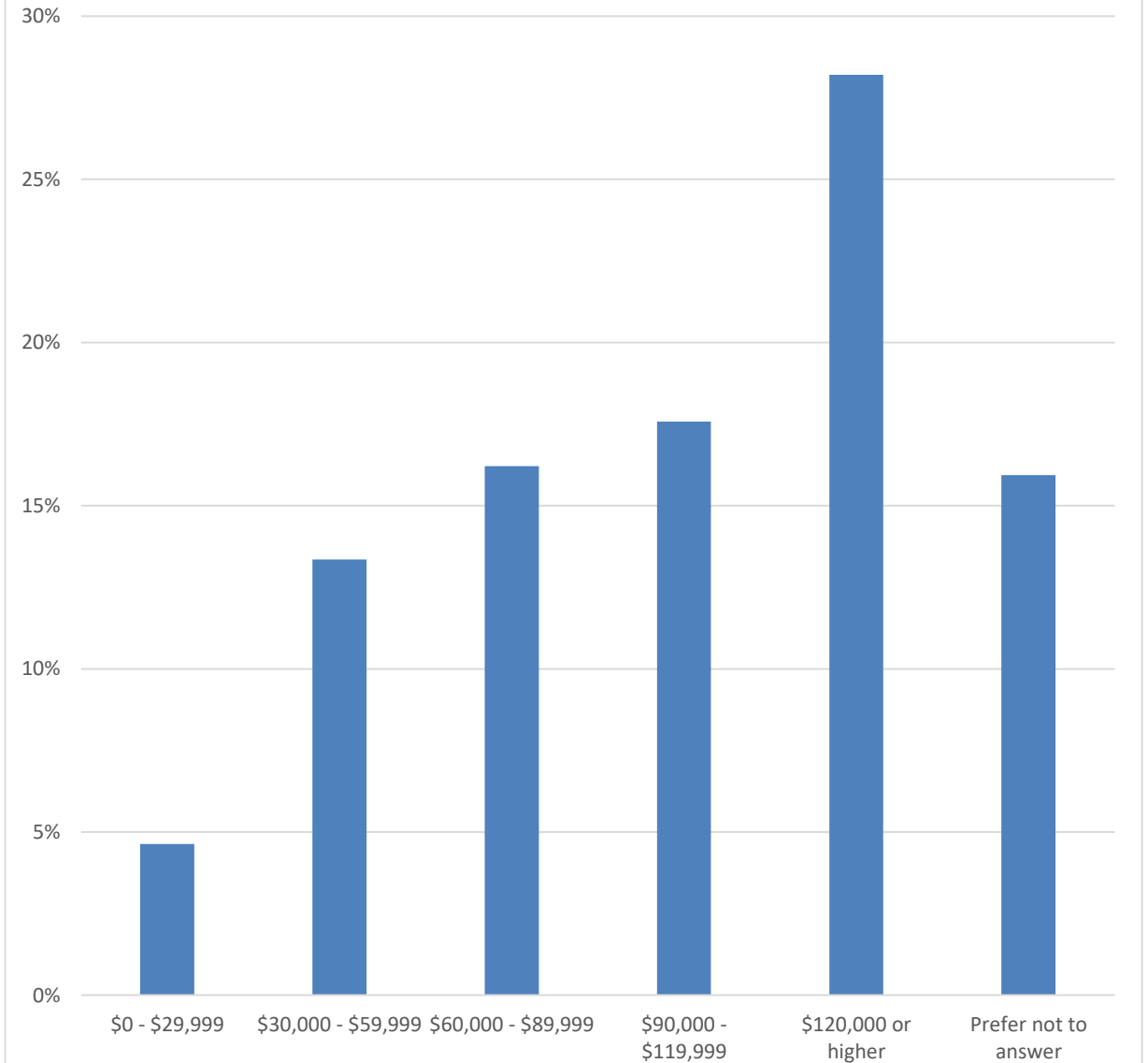
41% Walking & Hiking

40% Bicycling

17% Running & Jogging

2% Other

DEMOGRAPHICS

50% male

50% female

88% white
5% black/african american
1% hispanic
2% asian
1% 2 or more races
3% prefer no answer

Age

| | <16 | 16-17 | 18-24 | 25-34 | 35-49 | 50-64 | 65-74 | >75 |

Education

Category	
Less than high school degree	
GED	
High school degree	
Some college but no degree	
Associate's degree	
Bachelor's degree	
Graduate or professional degree	
Prefer not to answer	

Income

Category	
$0 - $29,999	
$30,000 - $59,999	
$60,000 - $89,999	
$90,000 - $119,999	
$120,000 or higher	
Prefer not to answer	

Dearborn Trail
Lawrenceburg, Indiana
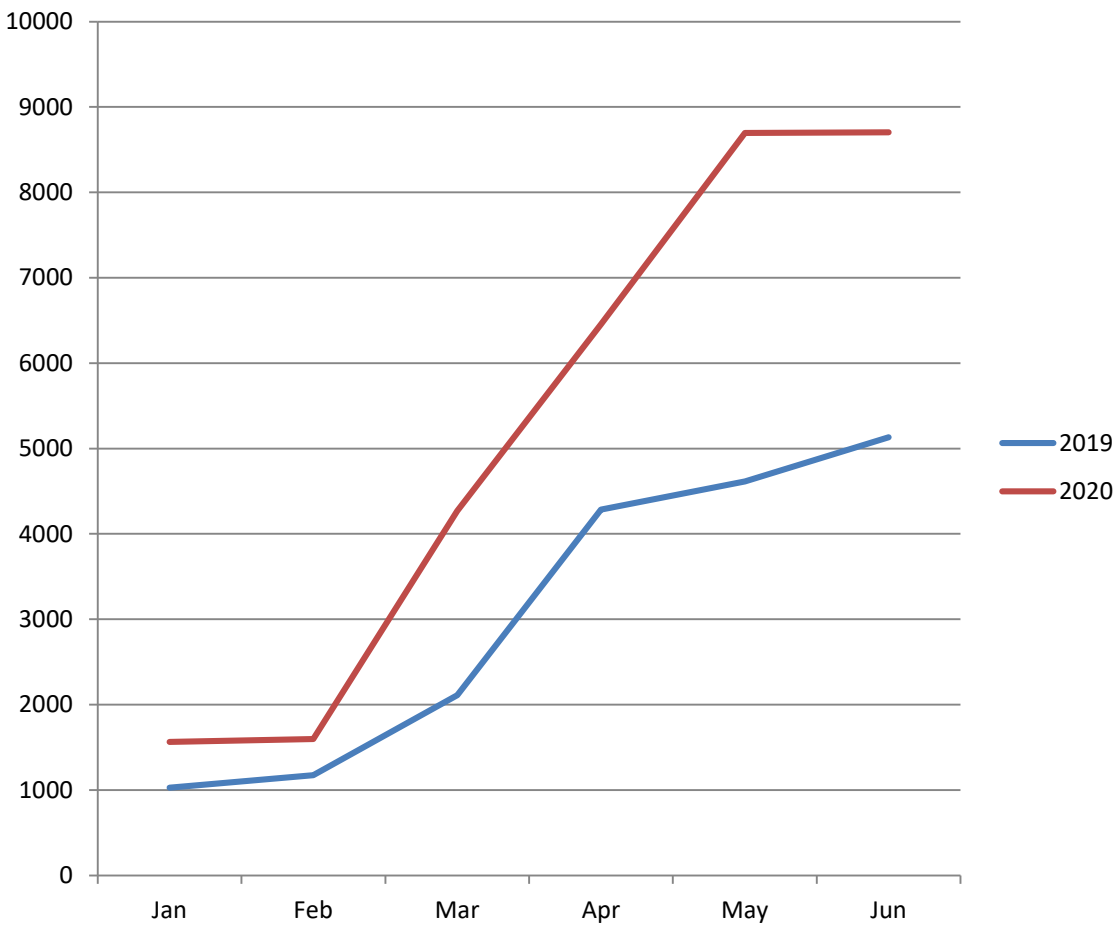
	2019	**2020**	**% CHANGE**
Jan	1029	1562	52%
Feb	1175	1598	36%
Mar	2111	4268	102%
Apr	4283	6454	51%
May	4613	8696	89%
Jun	5131	8703	70%
TOTAL	**18342**	**31281**	**71%**

Great Miami River Trail
Hamilton, Ohio
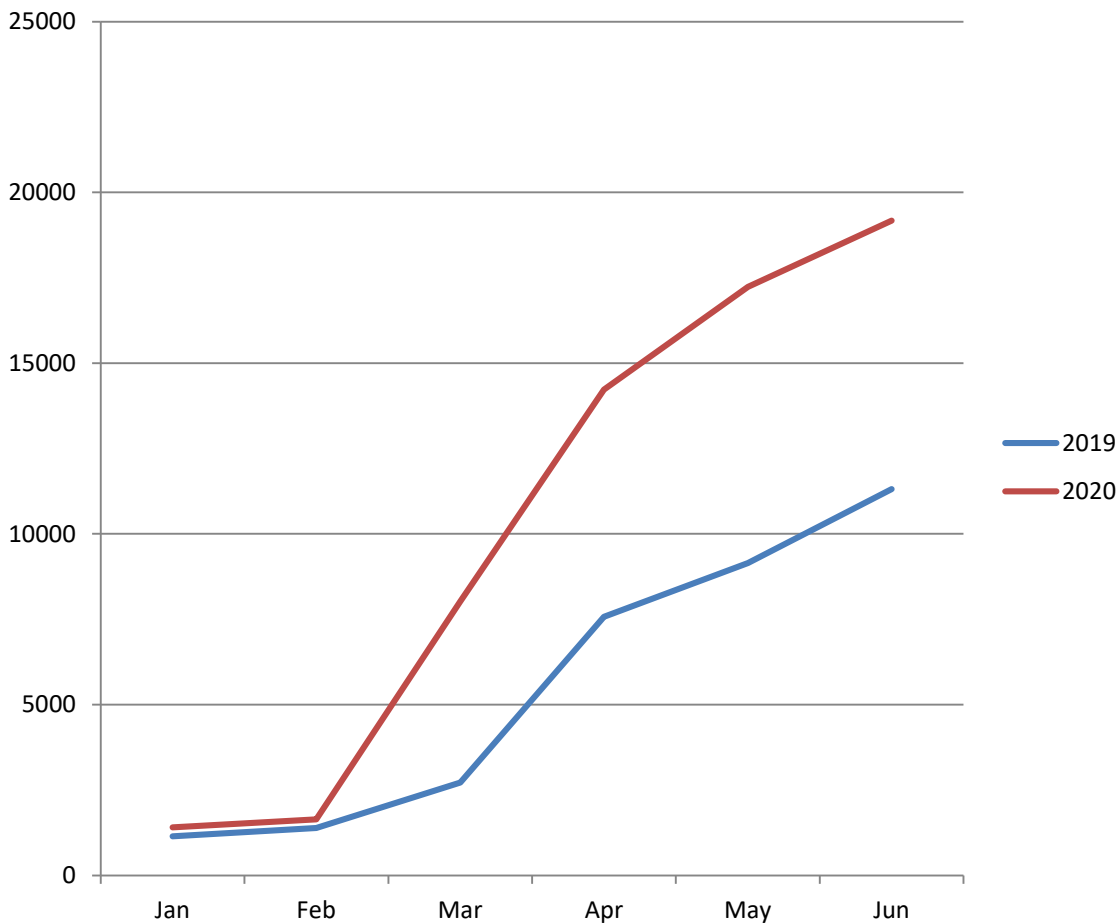
	2019	2020	% CHANGE
Jan	1141	1407	23%
Feb	1386	1637	18%
Mar	2723	8023	195%
Apr	7568	14224	88%
May	9146	17231	88%
Jun	11315	19171	69%
TOTAL	33279	61693	85%

Little Miami Scenic Trail
Loveland, Ohio
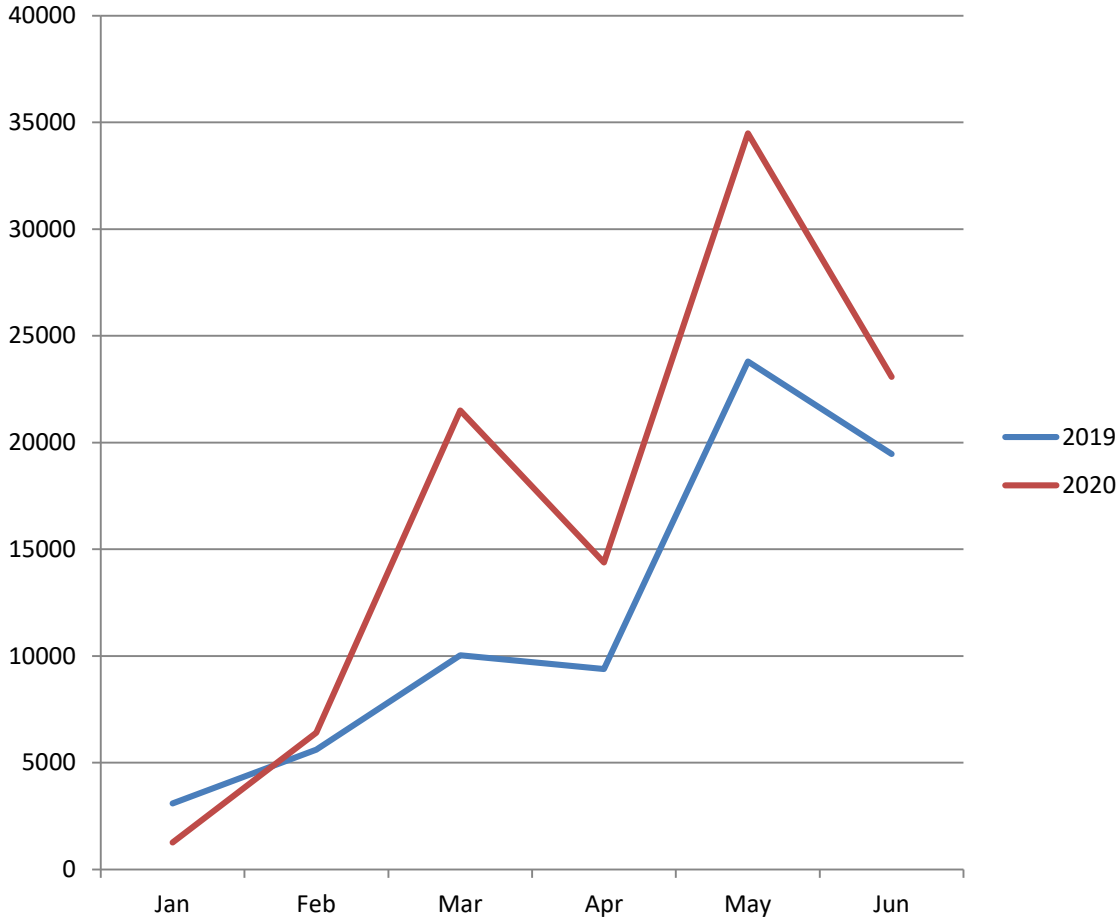
	2019 actual	**2019 adjusted**	**2020 raw***	**% CHANGE**
Jan	6270	3096	1256	-59%
Feb	5615	5615	6401	14%
Mar	10026	10026	21496	114%
Apr	19395	9391	14383	53%
May	24154	23798	34479	45%
Jun	35123	19465	23082	19%
TOTAL	**100583**	**71391**	**101097**	**42%**

*Counter malfunctioned, only 73% complete days of data

Ohio River Trail at Lunken Airport
Cincinnati, Ohio
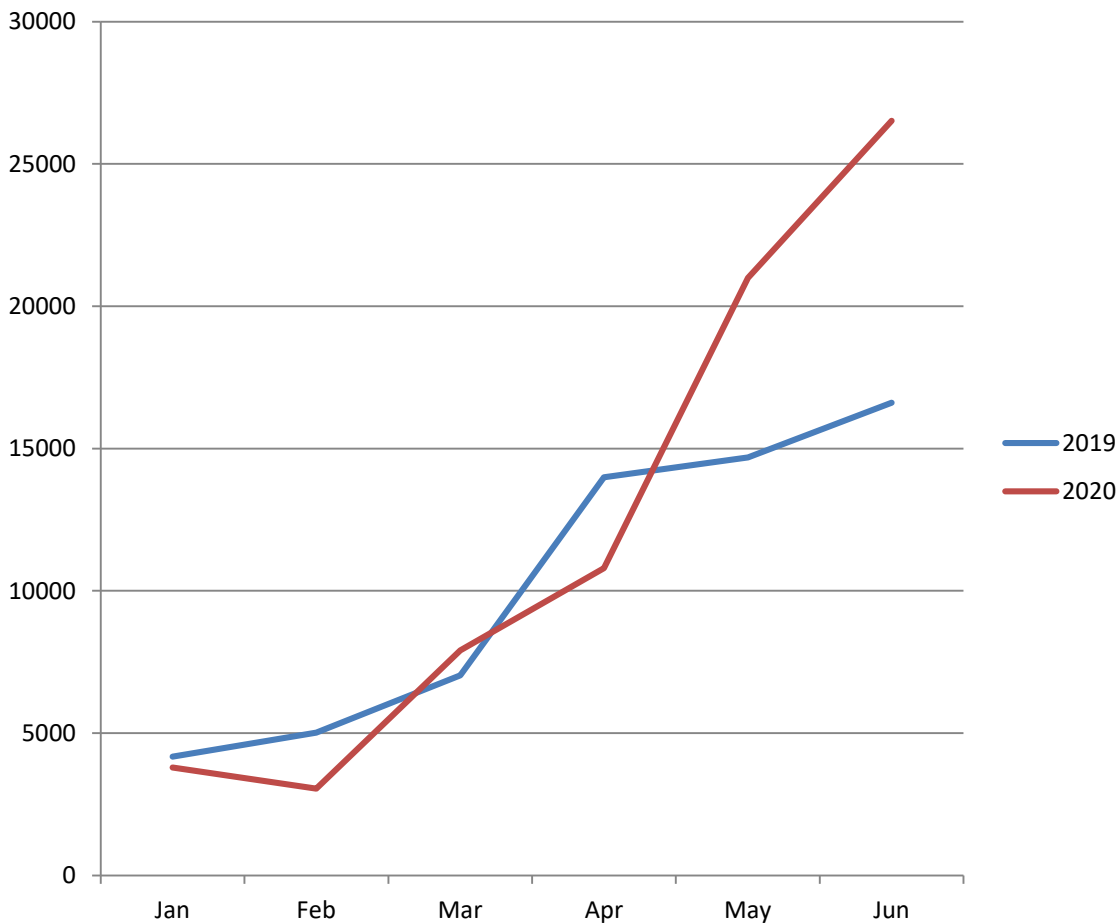
	2019	2020	% CHANGE
Jan	4179	3790	-9%
Feb	5021	3053	-39%
Mar	7031	7907	12%
Apr	13992	10793	-23%
May	14689	20989	43%
Jun	16604	26512	60%
TOTAL	**61516**	**73044**	**19%**

Purple People Bridge
Newport, Kentucky
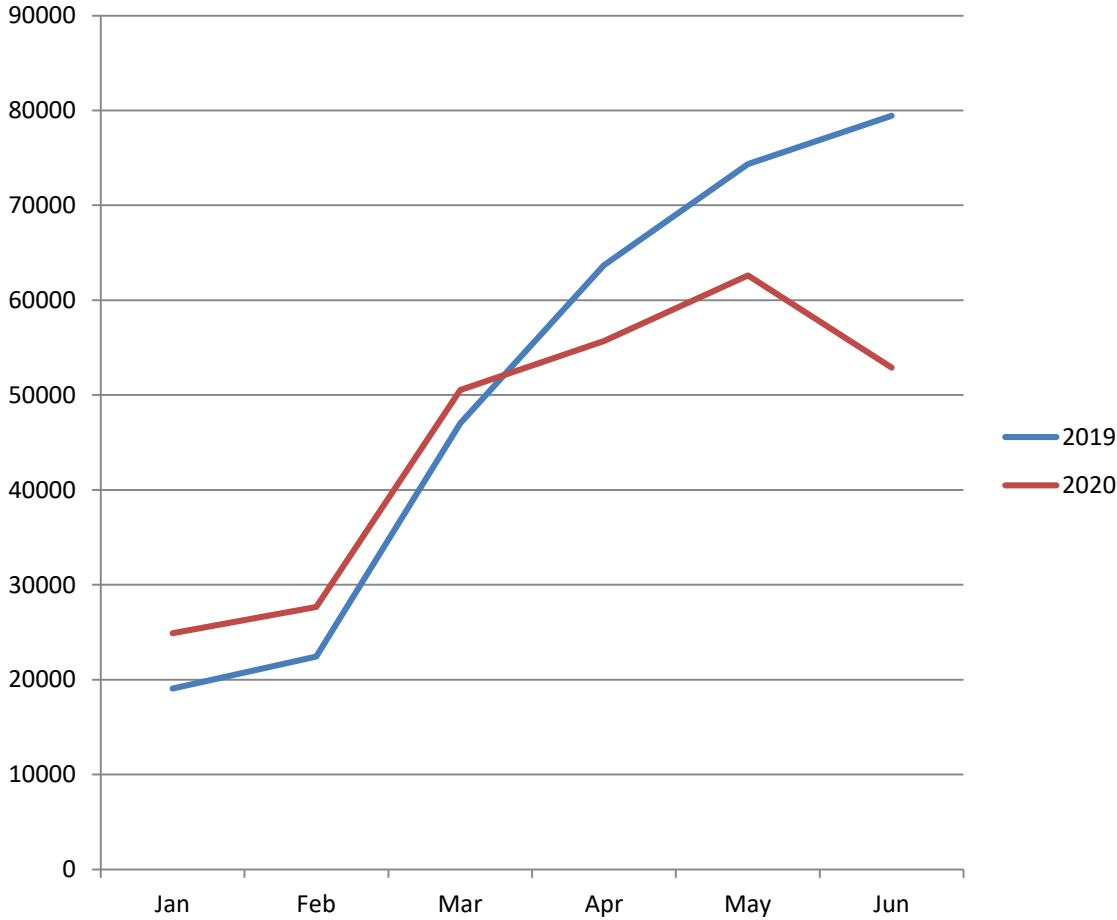
	2019	2020	% CHANGE
Jan	19076	24907	31%
Feb	22440	27658	23%
Mar	47041	50519	7%
Apr	63683	55708	-13%
May	74358	62602	-16%
Jun	79442	52910	-33%
TOTAL	306040	274304	-10%

All Permanent Counters
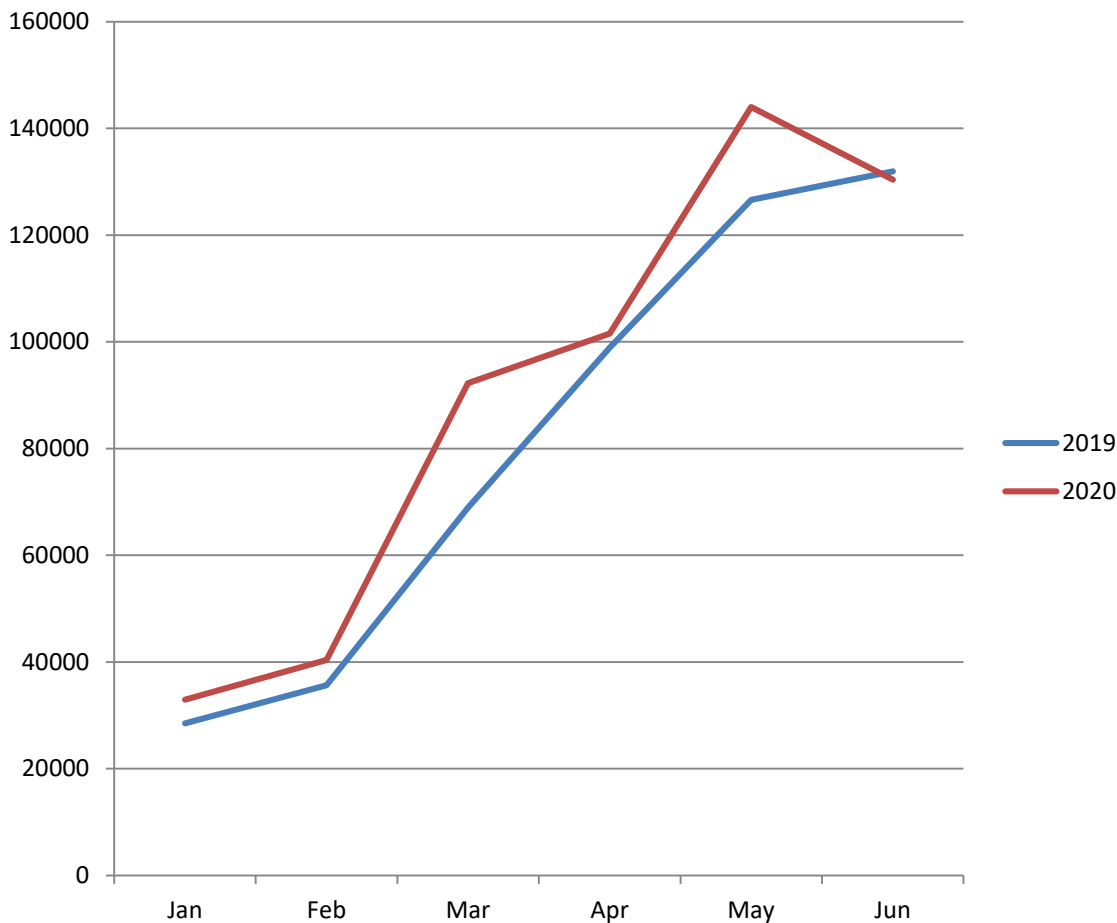
	2019	**2020**	**% CHANGE**
Jan	28521	32922	15%
Feb	35637	40347	13%
Mar	68932	92213	34%
Apr	98917	101562	3%
May	126604	143997	14%
Jun	131957	130378	-1%
TOTAL	**490568**	**541419**	**10%**

What we've learned…

- Building a systematic, comprehensive trail counting system takes time
- Data for trail use is critical to telling the story of trails and leveraging future investment
- Stakeholder buy-in and proactive collaboration is essential

Thank you!

For more information, visit tristatetrails.org/trailscount

Wade Johnston, AICP
Director, Tri-State Trails
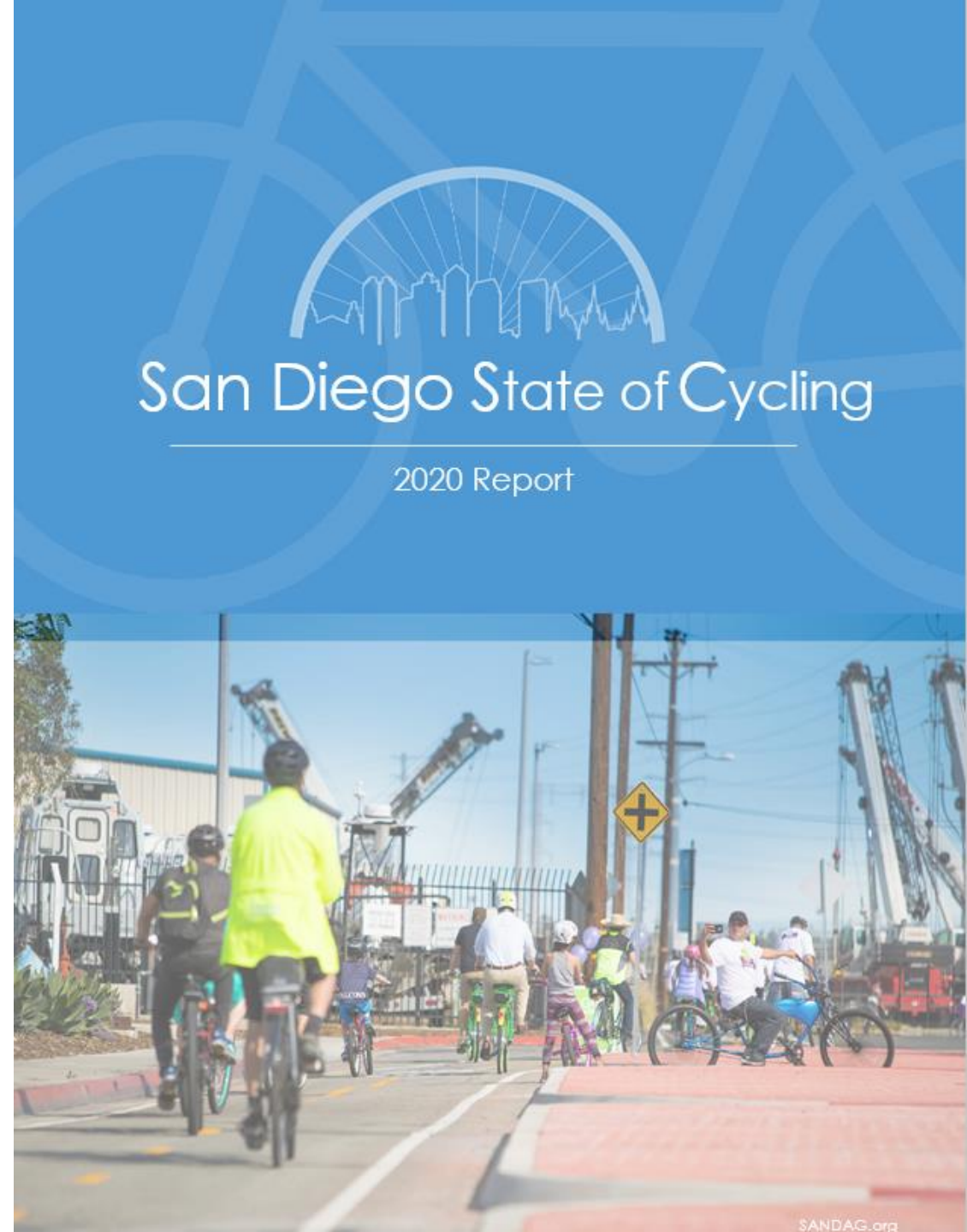Green Umbrella
wade@greenumbrella.org

TRI STATE TRAILS

San Diego
State of Cycling

Sherry Ryan, PhD, Ana Garate and Diane Foote

School of Public Affairs – Master in City Planning Program

San Diego State University

8-11-2020

The San Diego Regional Bicycle and Pedestrian Counting Program

- Started in 2011 with funds from the County of San Diego Health and Human Services Agency (CDC funds – Communities Putting Prevention to Work)

- SDSU identified technology, siting strategy and oversaw installation of the automated bicycle and pedestrian counting network

- Funds for launching, not for maintenance

System Characteristics – ECO-Counter Technologies

Zelt Logger & Inductive Loops

Pyro

Eco-Multi

Zelt Logger and Inductive Loop

Eco-Multi installed on San Diego River Path

Count Sites by City and Facility Type

- 32 counts sites across 12 cities on a variety of facility types

- All but 1 are located along San Diego's Regional Bike Network

#	City	Location	Facility Type		ON/OFF Network*
1	Chula Vista	Bayshore Bikeway	🟡 Class I	Multi-Use Path	ON
2	Coronado	Bayshore Bikeway	🟡 Class I	Multi-Use Path	ON
3	Del Mar	Camino Del Mar	🔵 Class II	Bike Lane	ON
4	El Cajon	East Washington Ave	🔵 Class II	Bike Lane	OFF
5	Escondido	Inland Rail Trail	🟡 Class I	Multi-Use Path	ON
6	Imperial Beach	Bayshore Bikeway	🟡 Class I	Multi-Use Path	ON
7	Imperial Beach	Palm Ave	🟢 Class III	Bike Route	ON
8	La Mesa	University Ave	🔵 Class II	Bike Lane	ON
9	National City	Sweetwater Bike Path	🟡 Class I	Multi-Use Path	ON
10	Oceanside	Coastal Rail Trail	🟡 Class I	Multi-Use Path	ON
11	Oceanside	Oceanside Blvd	🔵 Class II	Bike Lane	ON
12	Oceanside	Pacific St	🟢 Class III	Bike Route	ON
13	Oceanside	San Luis Rey River Trail @College Blvd	🟡 Class I	Multi-Use Path	ON
14	Oceanside	San Luis Rey River Trail @Pacific St	🟡 Class I	Multi-Use Path	ON
15	San Diego	30th St	🟢 Class III	Bike Route	ON
16	San Diego	4th and 5th Ave	🔵 Class II	Bike Lane	ON
17	San Diego	Del Mar Heights Rd	🔵 Class II	Bike Lane	OFF
18	San Diego	Gilman Dr	🔵 Class II	Bike Lane	ON
19	San Diego	Harbor Drive Multi-Use Path	🟡 Class I	Multi-Use Path	ON
20	San Diego	Kearny Villa Rd	🔵 Class II	Bike Lane	ON
21	San Diego	La Jolla Blvd	🔵 Class II	Bike Lane	ON
22	San Diego	Landis St	🟢 Class III	Bike Route	ON
23	San Diego	North Torrey Pines Rd @UCSD	🔵 Class II	Bike Lane	ON
24	San Diego	Pacific Hwy	🔵 Class II	Bike Lane	ON
25	San Diego	Rose Canyon Bike Path	🟡 Class I	Multi-Use Path	ON
26	San Diego	San Diego River Bike Path	🟡 Class I	Multi-Use Path	ON
27	San Diego	Sorrento Valley Rd	🟡 Class I	Multi-Use Path	ON
28	San Diego	SR56 Bike Path	🟡 Class I	Multi-Use Path	ON
29	San Diego	Torrey Pines Rd	🔵 Class II	Bike Lane	ON
30	San Diego	University Ave	🟢 Class III	Bike Route	ON
31	San Marcos	Inland Rail Trail	🟡 Class I	Multi-Use Path	ON
32	Vista	Vista Village Dr	🔵 Class II	Bike Lane	ON

Count Sites Along the Regional Bike Network

- Units at 9 sites were gifted by SDSU to SANDAG

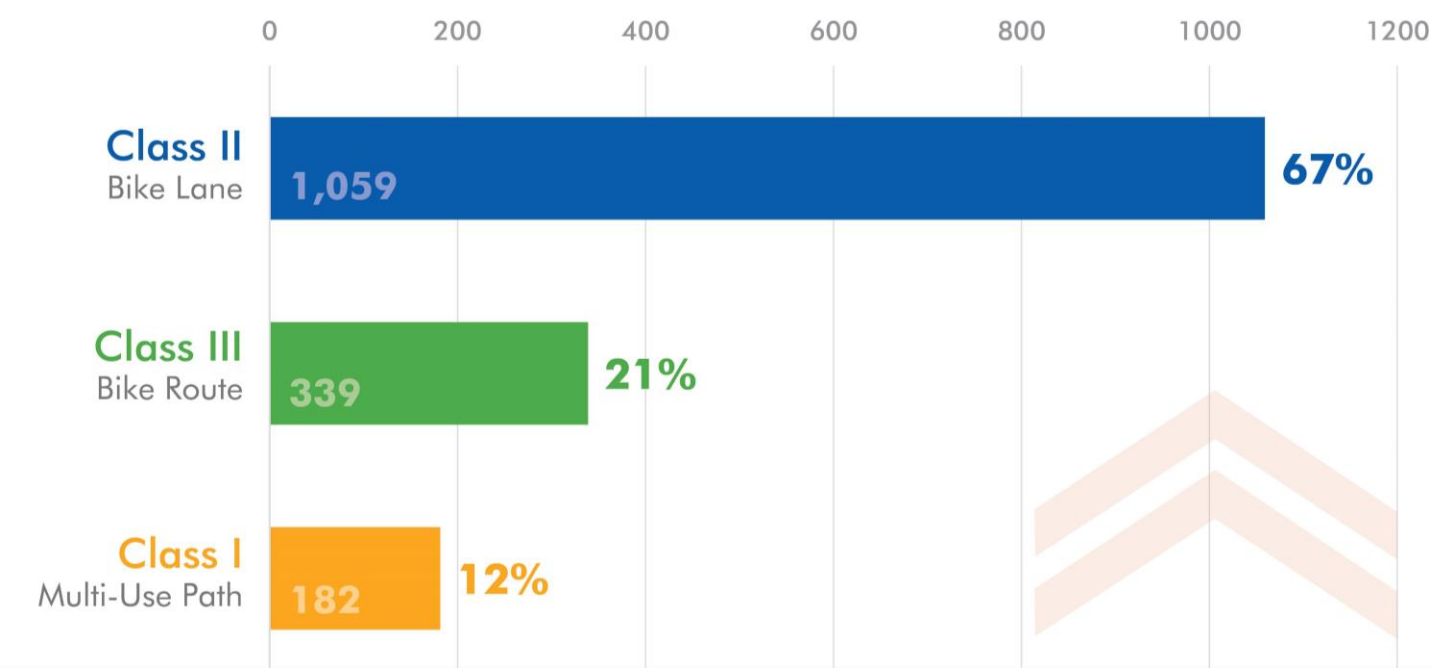- City of Oceanside has purchased additional counting units

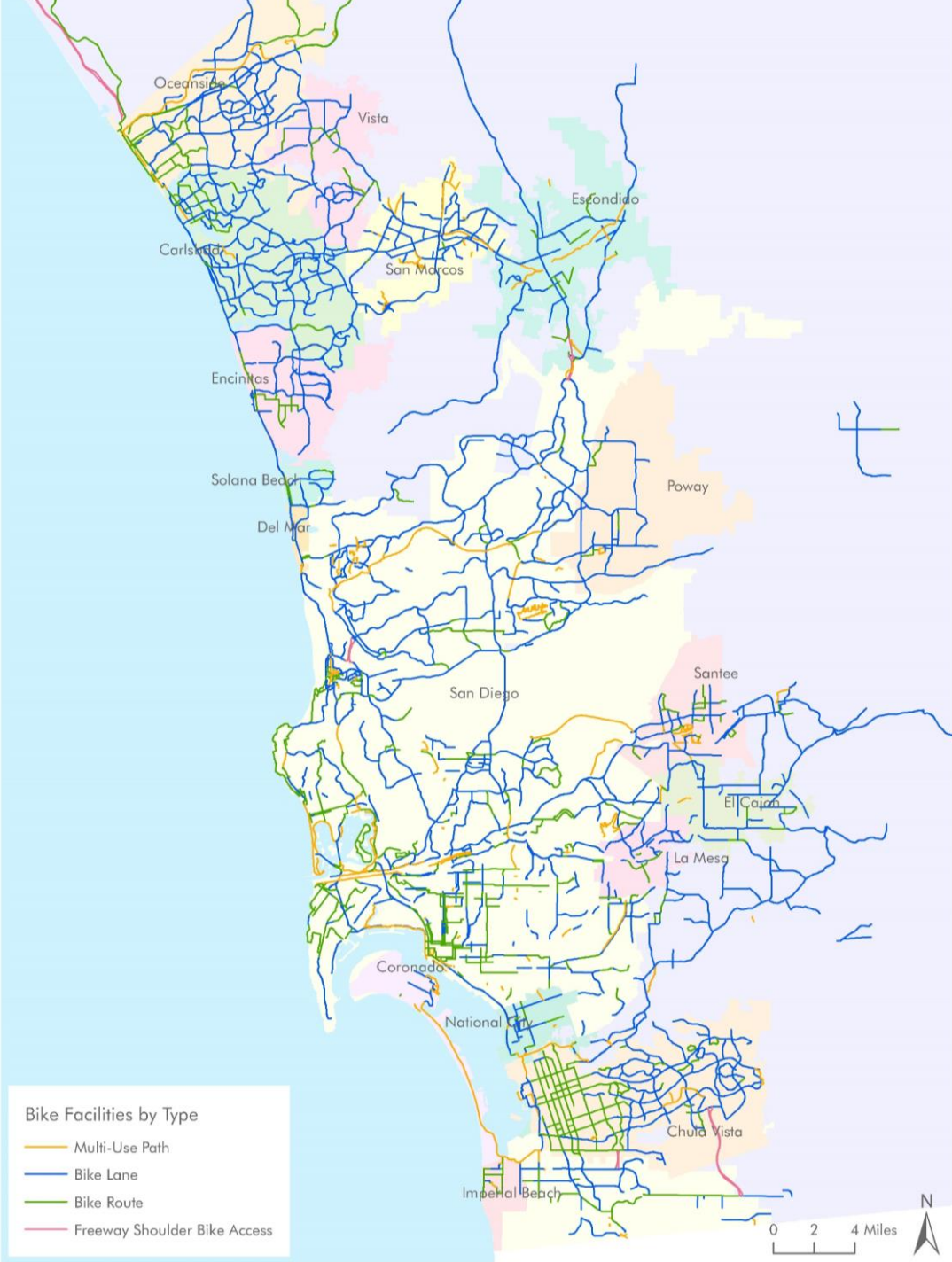# First Major Reporting of SDSU's Bicycle Count Data

- Bicycle Infrastructure and Changes (2015-2018)

- Bicycle Demands and Changes (2013-2017)

- Bicycle Collisions and Changes (2013-2016)

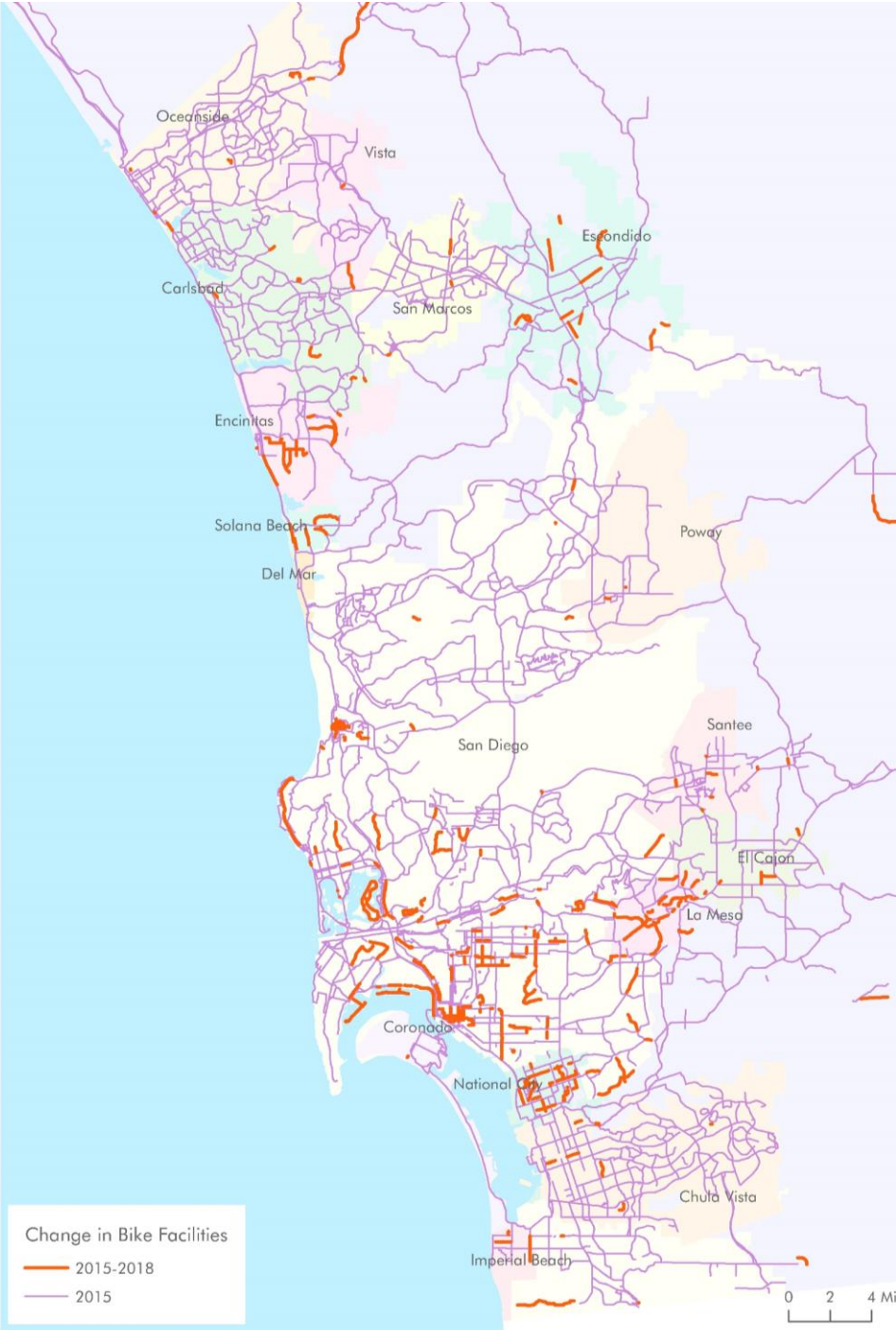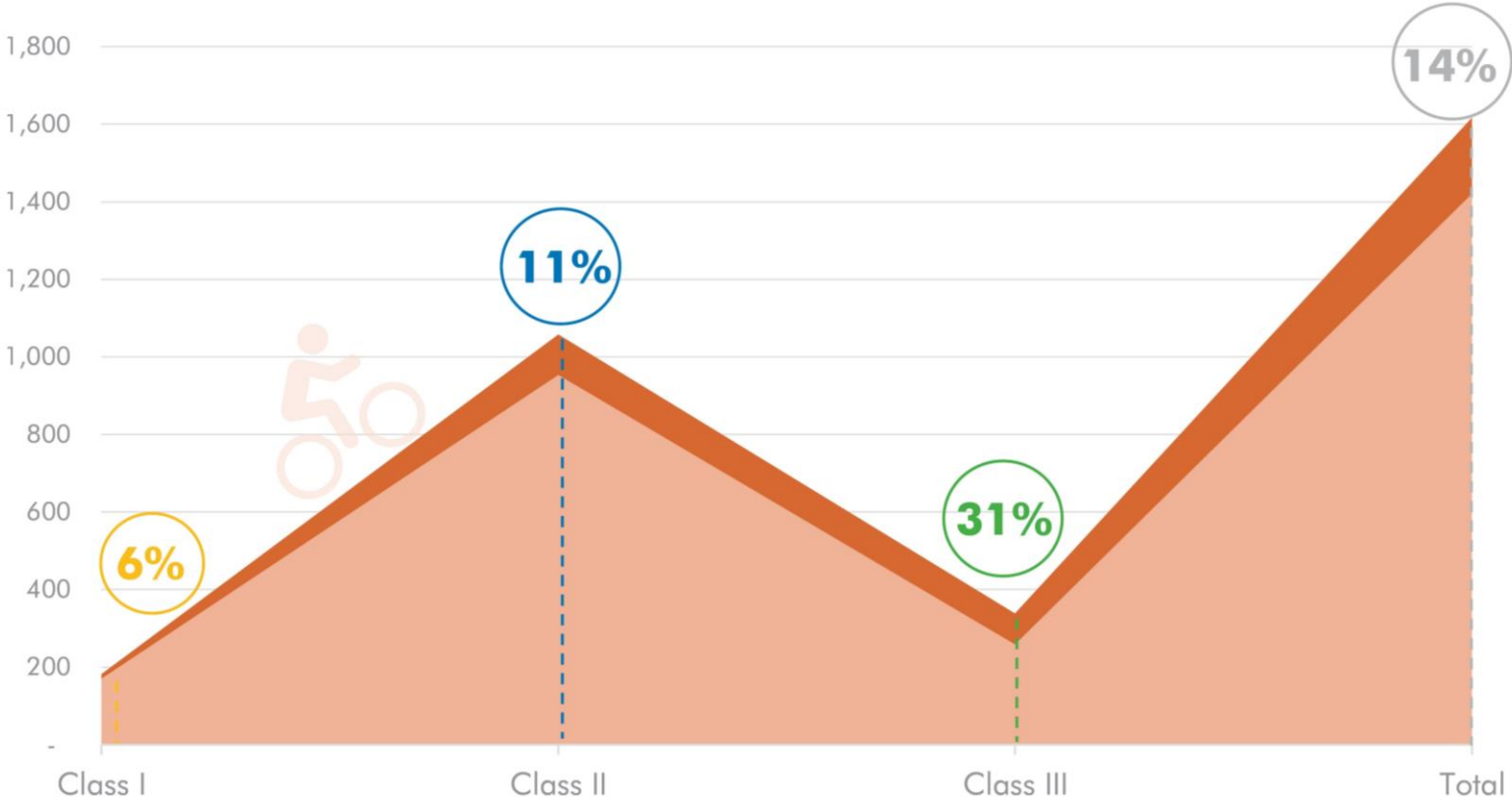# Inventory of Existing Bicycle Facility

Class II Bike Lane	1,059 — 67%
Class III Bike Route	339 — 21%
Class I Multi-Use Path	182 — 12%

Source: SANDAG, 2018

Bike Facilities by Type
- Multi-Use Path
- Bike Lane
- Bike Route
- Freeway Shoulder Bike Access

3-Year Change in Miles of Bicycle Facility Construction
2015 to 2018
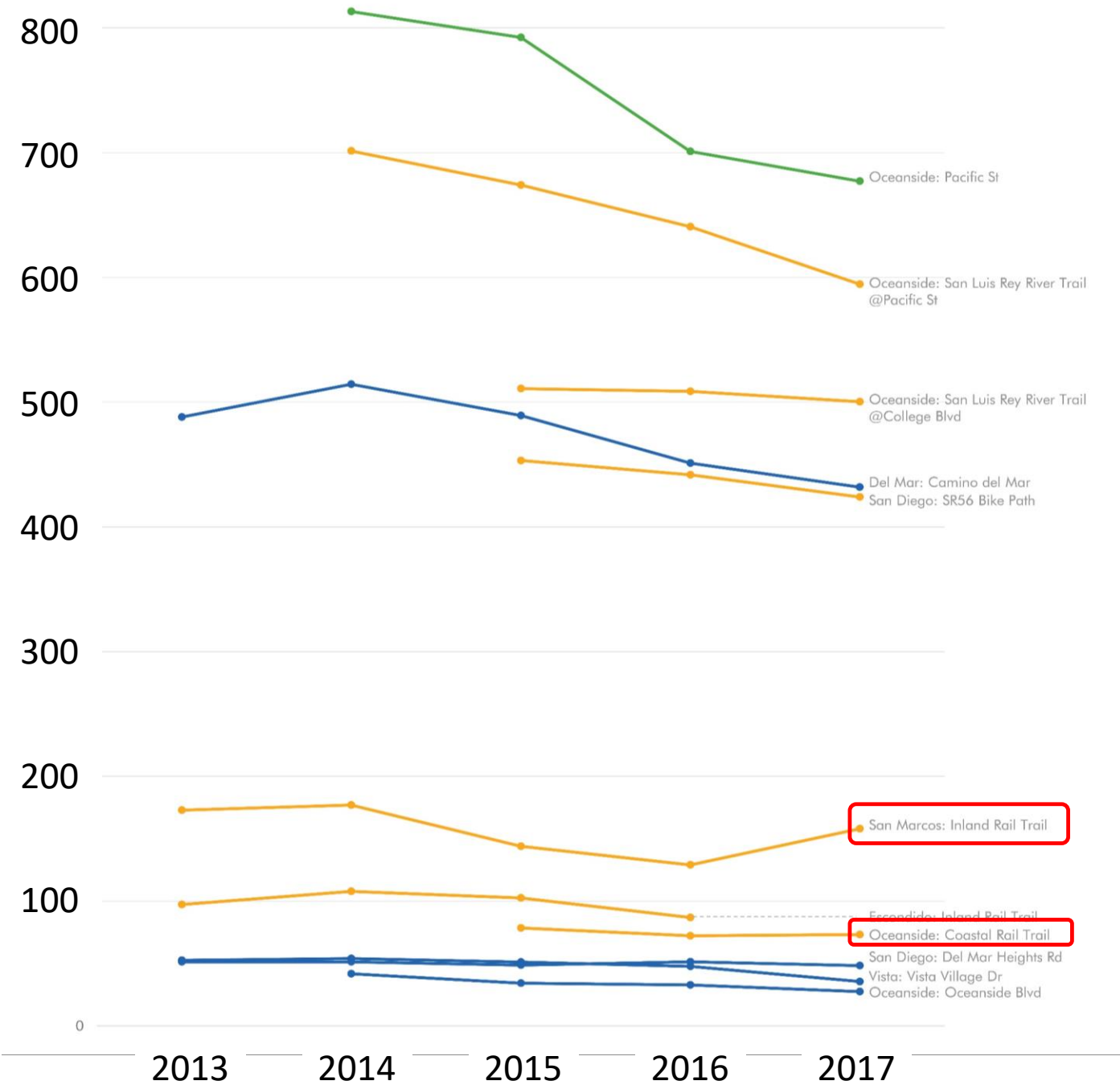
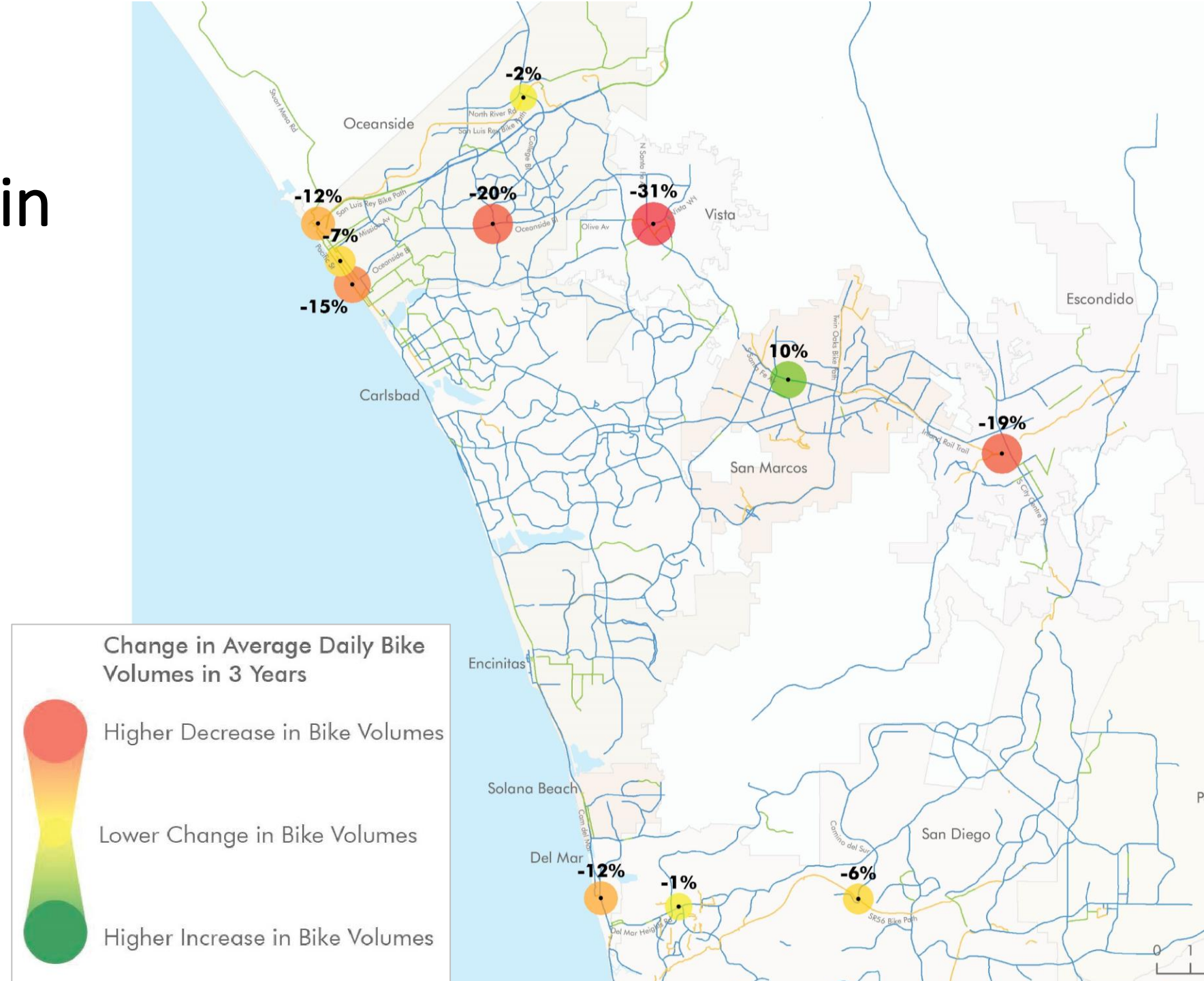Changes in Cycling Demand
(Average Daily Bicycle Volume 2013 to 2017)
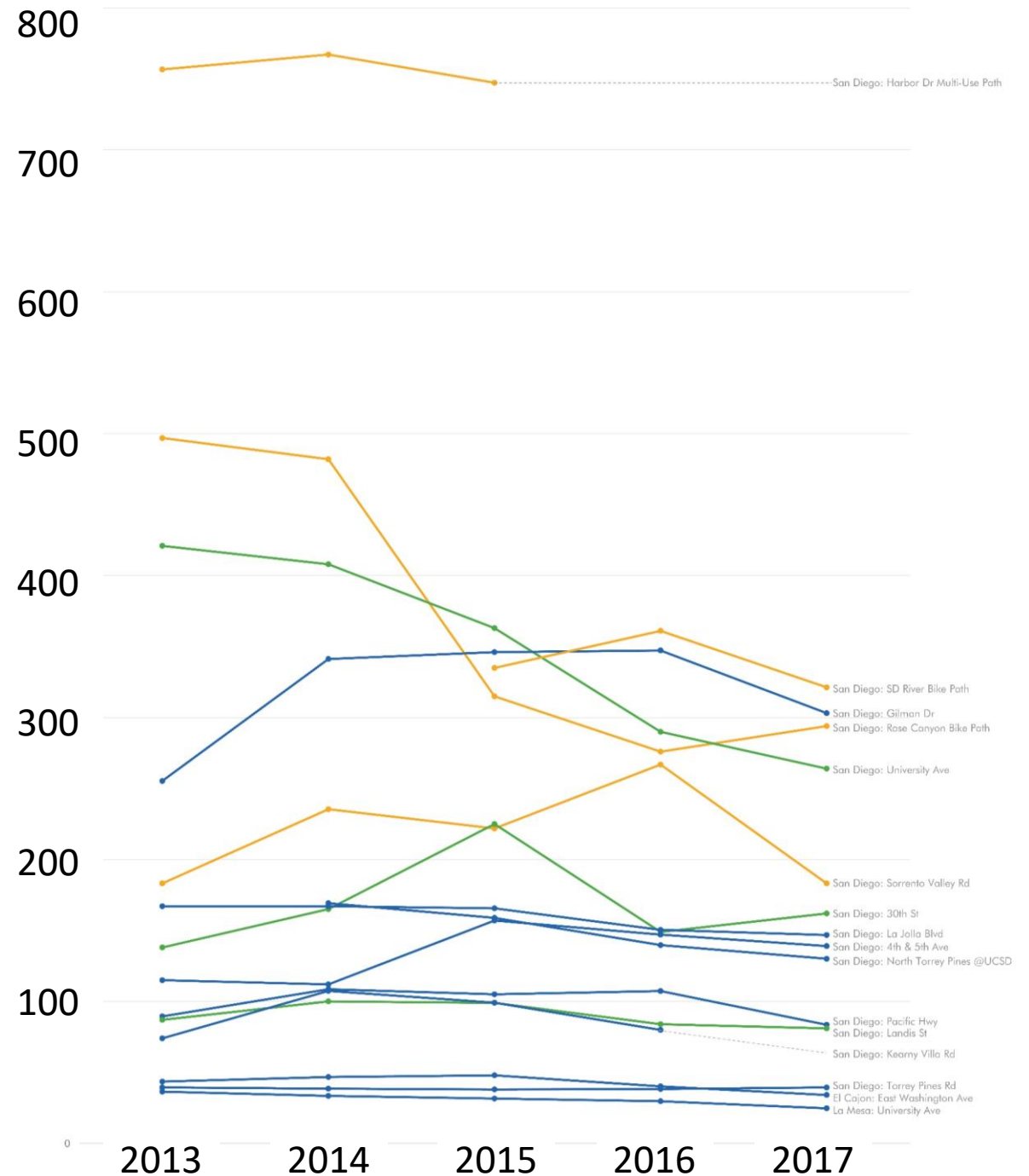
North Region

Rail Trails in San Diego County

Oceanside: Pacific St
Oceanside: San Luis Rey River Trail @Pacific St
Oceanside: San Luis Rey River Trail @College Blvd
Del Mar: Camino del Mar
San Diego: SR56 Bike Path
San Marcos: Inland Rail Trail
Escondido: Inland Rail Trail
Oceanside: Coastal Rail Trail
San Diego: Del Mar Heights Rd
Vista: Vista Village Dr
Oceanside: Oceanside Blvd

Percent Change in Cycling Demand
2015 to 2017

North Region

Change in Average Daily Bike Volumes in 3 Years

Higher Decrease in Bike Volumes

Lower Change in Bike Volumes

Higher Increase in Bike Volumes
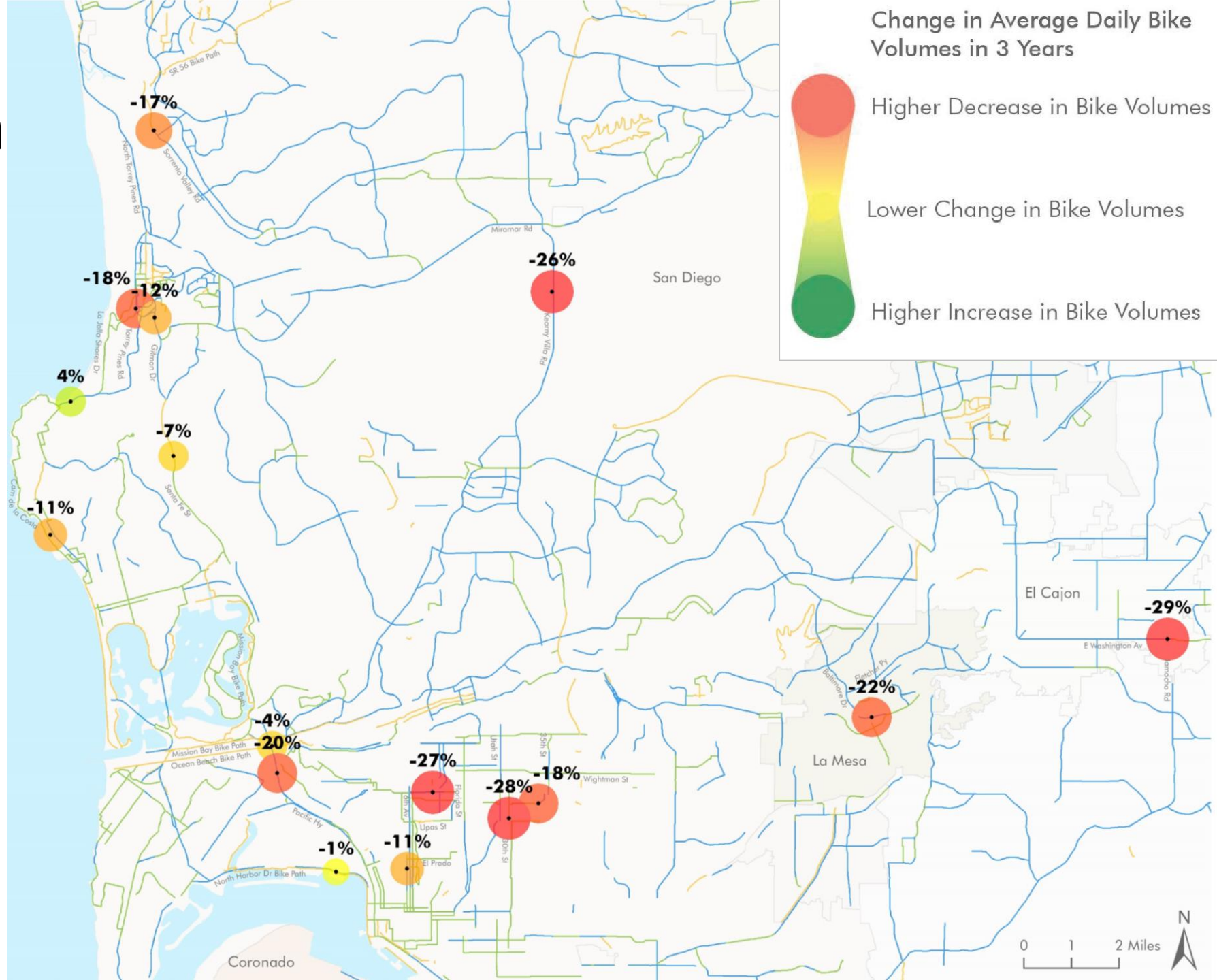
-2%
-12%
-20%
-31%
-7%
-15%
10%
-19%
-12%
-1%
-6%

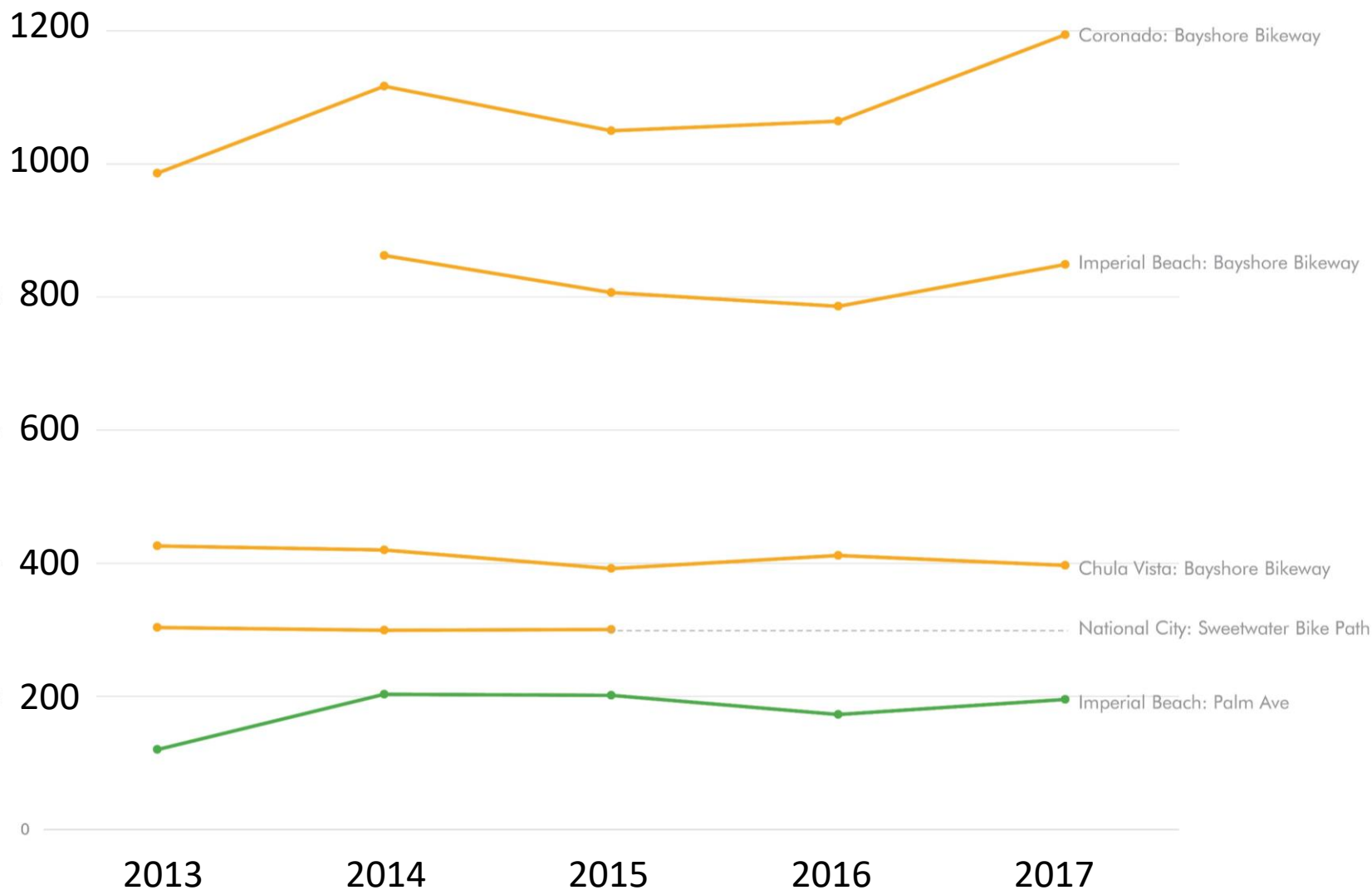Changes in
Cycling Demand
*(Average Daily Bicycle
Volume 2013 to 2017)*

Central Region

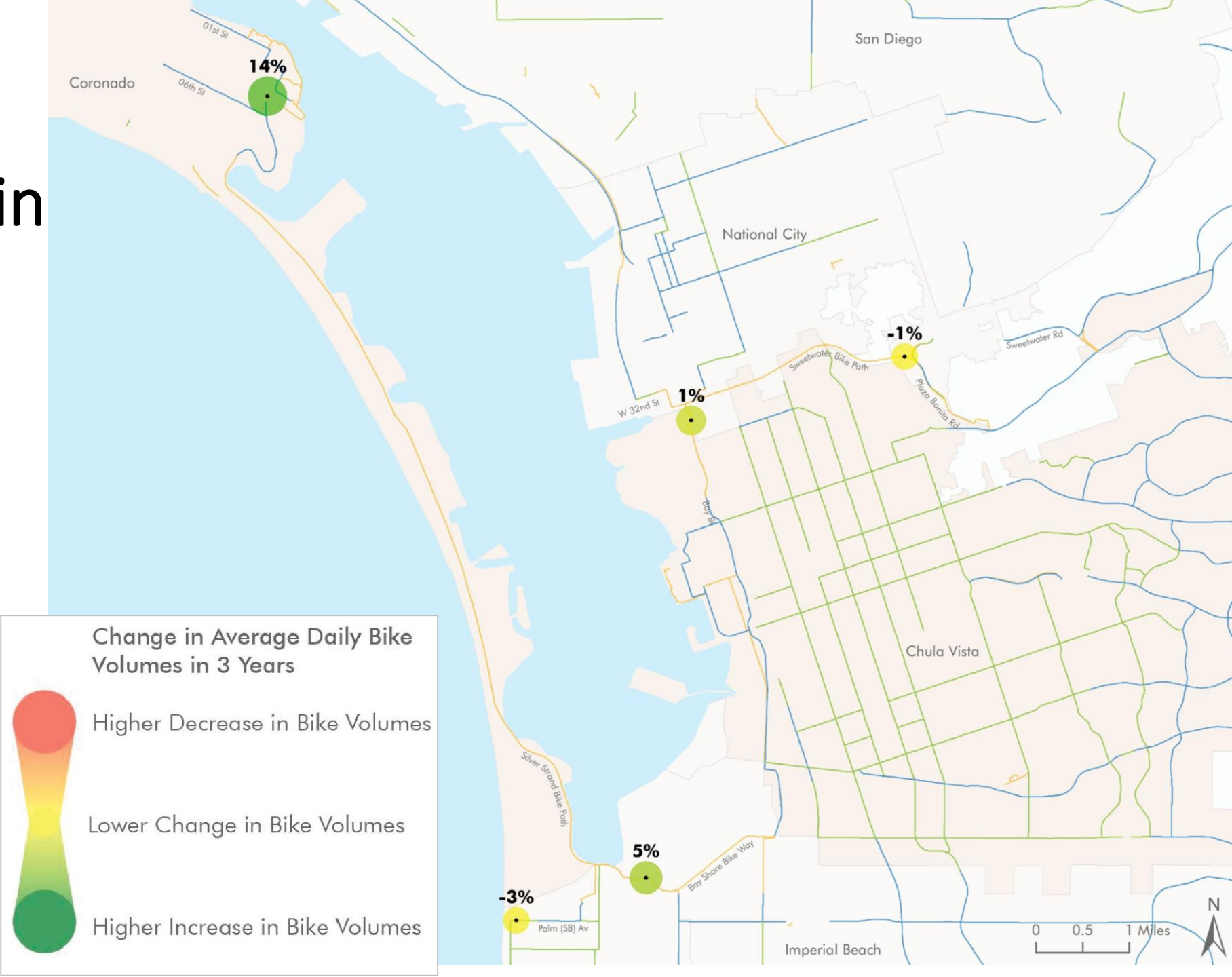Percent Change in Cycling Demand
2015 to 2017

Central Region

Changes in Cycling Demand
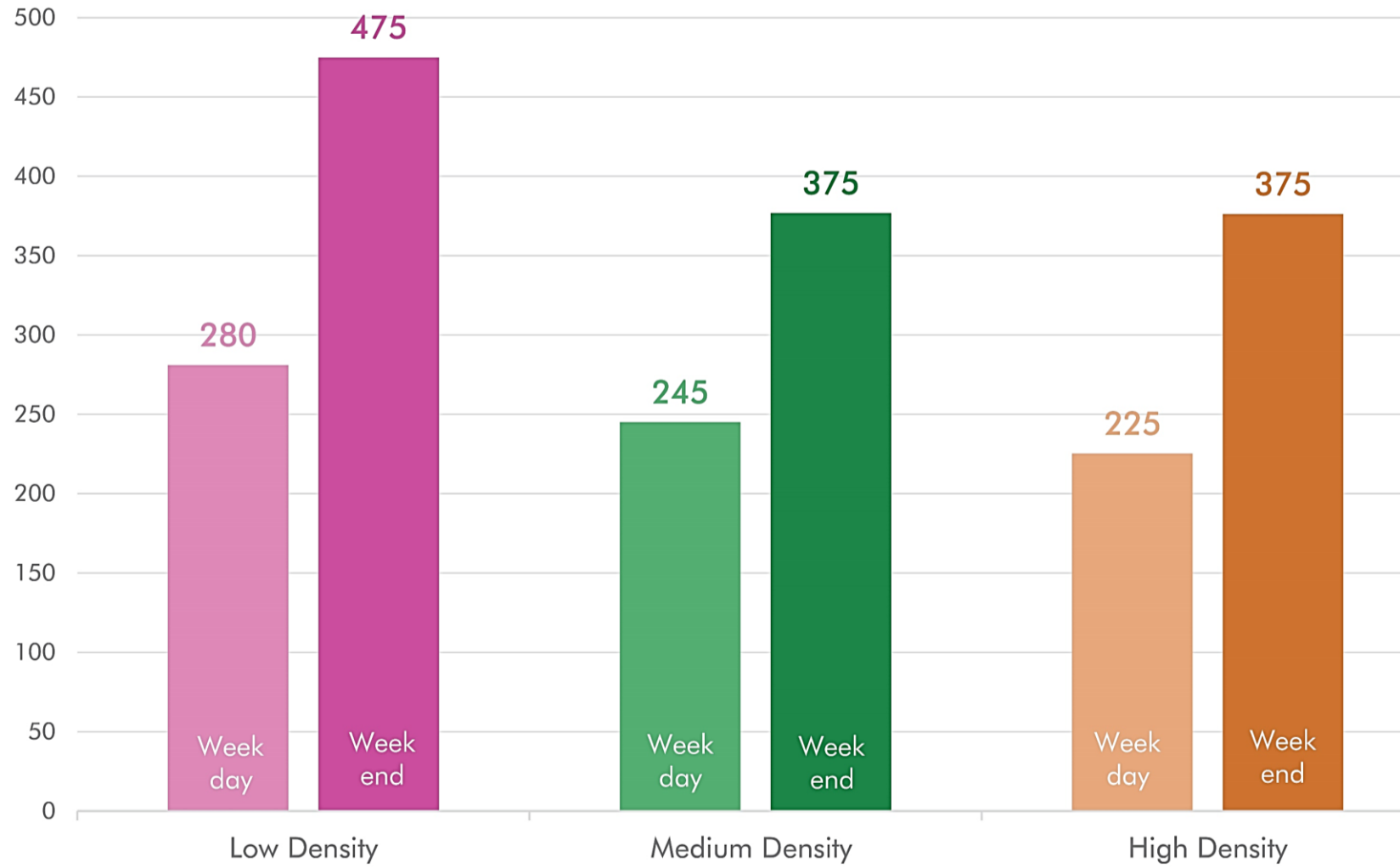*(Average Daily Bicycle Volume 2013 to 2017)*

South Region

Percent Change in Cycling Demand
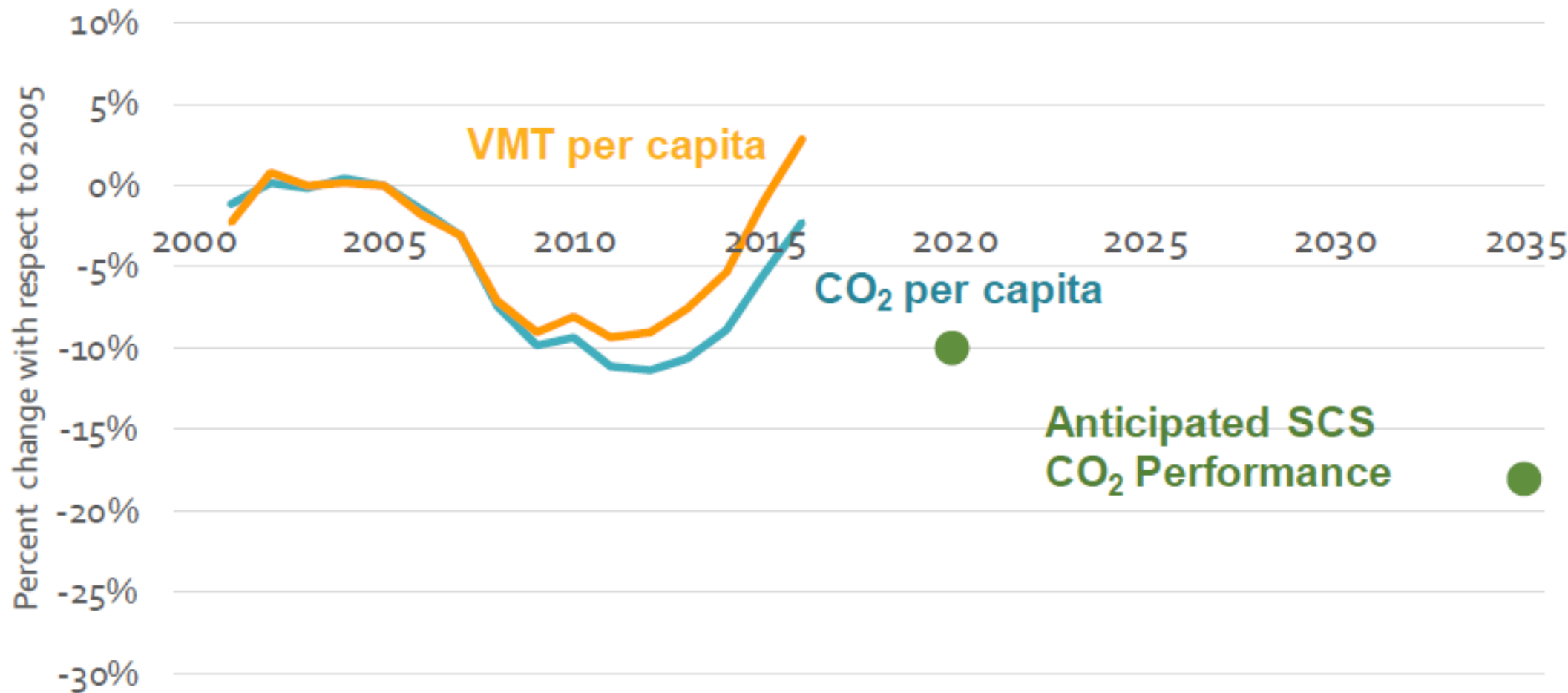2015 to 2017

South Region

Concluding Remarks

- Cycling levels between 2013 and 2017 are going in wrong direction

- Bike lanes and bike routes won't incentivize people to ride bikes

- A dense network of separated bike facilities or multi-use paths is required to change travel mode
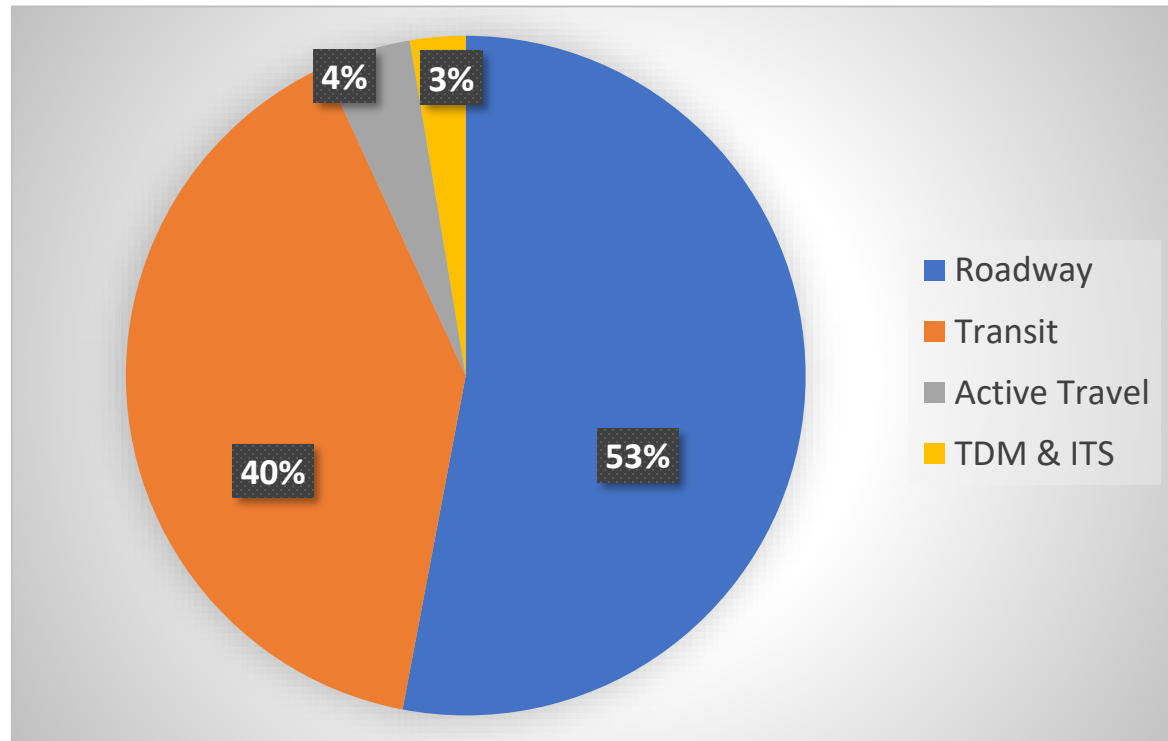
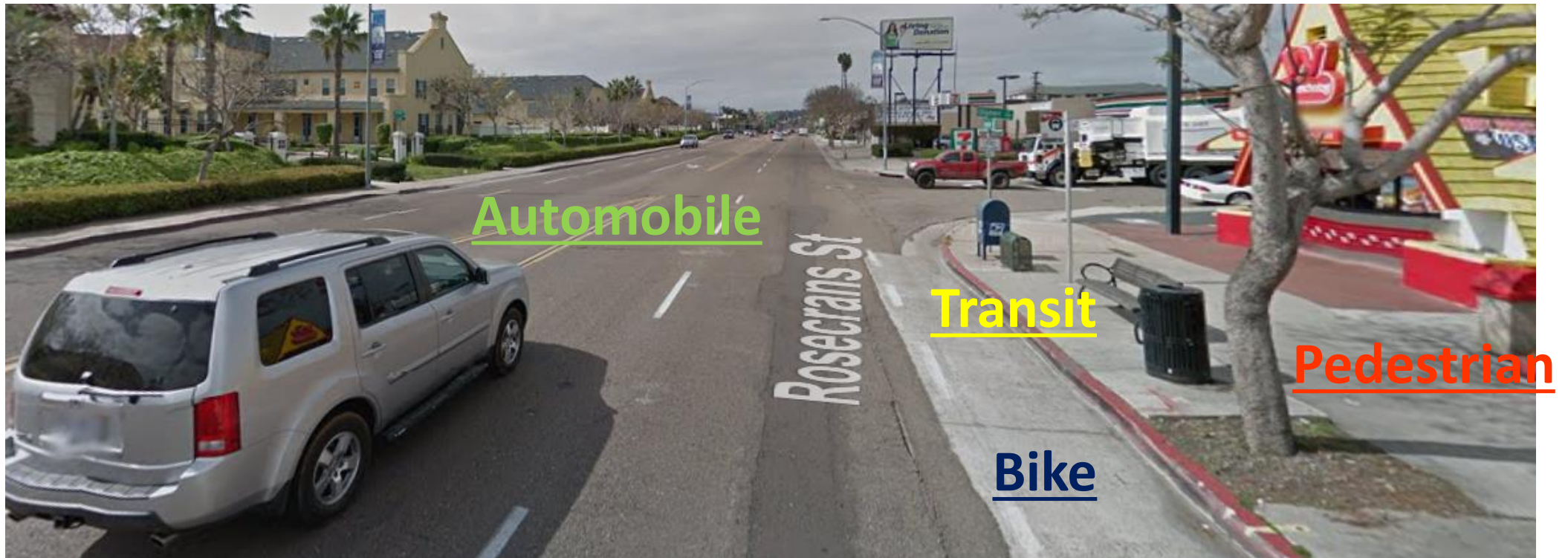# Statewide GHG and VMT since 2000

Three Major Action Items

1. Equal Funding by Mode

2. Equal Quality & Capacity by Mode

3. Suppress Capacity for Auto Travel

SANDAG 2018 RTIP Funds by Mode

Unequal Quality & Capacity
Pedestrian, Bike, Transit and Auto Travel

Resources   railstotrails.org/COVID19

COVID-19 RESOURCES

Home > COVID19

As American life is altered significantly in response to COVID-19, Rails-to-Trails Conservancy (RTC) is providing resources and advocacy tools to connect people with outdoor space where they can be active and well during this time. We are sharing content and data that provides insights on safely accessing trails and the outdoors now, as well as information and tools to support trail managers in keeping communities safe, and perspectives on the long-term impacts of the illness on the trails movement and the communities we all serve. We are leading national efforts to call on local officials to repurpose streets to create more space for people to be active at a safe social distance, and we are organizing the trails and active transportation movement in response to federal stimulus opportunities. While we are working hard to maintain up-to-date content, the CDC's website, coronavirus.gov, as well as local and state public health agencies are the best resources for current public health guidance and local orders and regulations.

ADVOCACY   ARTICLES   TRAIL STATUS   WEBINARS   TRAIL DATA   MATERIALS   PSA   REI   SUPPORT RTC

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rails·to·trails
conservancy

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