Doing more with bike data

Annual fall webinar:
Wednesday October 28, 2020

Today's speakers

Braden Cervetti

Assistant Planner,
Community Planning
Association of Southwest
Idaho (COMPASS)

Katy Lang

Director of Active
Transportation,
BikeArlington &
WalkArlington

David Beitel

Data Services
Specialist,
Eco-Counter

Matt Starkey

Transportation Engineer,
Presidio Trust

Amelia Neptune

Director - Bicycle
Friendly America
Program, League of
American Bicyclists

eco counter

About Eco-Counter

Design & manufacture bike and pedestrian counters

Work with organizations to develop count programs

Enable a data-driven approach to bike and pedestrian planning

COMPASS Bicycle & Pedestrian Counter Program

October 28, 2020

Braden Cervetti
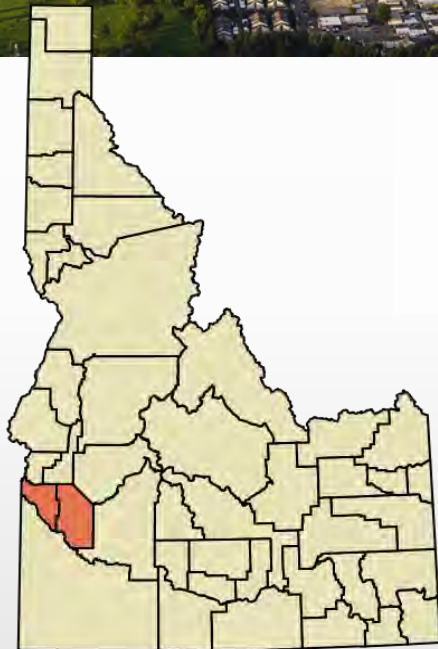
COMPASS Bicycle/Pedestrian Planner

Agenda

- **Intro (here, caveat that you're learning too!)**
  - -What does compass do?
  - -Introduce our Counter Program
- **How do *we* use bicycle/ped data?**

- **Braden's "Top three Tips"**

Photo of Boise, ID

Photo: https://www.buildidaho.com/home/boise_idaho/

COMPASS
COMMUNITY PLANNING ASSOCIATION
of Southwest Idaho

1. COMPASS Counter Program

COMPASS Counter Program

Counter Program

Permanent Counters

Portable Counters

COMPASS
COMMUNITY PLANNING ASSOCIATION
of Southwest Idaho

COMPASS Counter Program | **Permanent Counters**

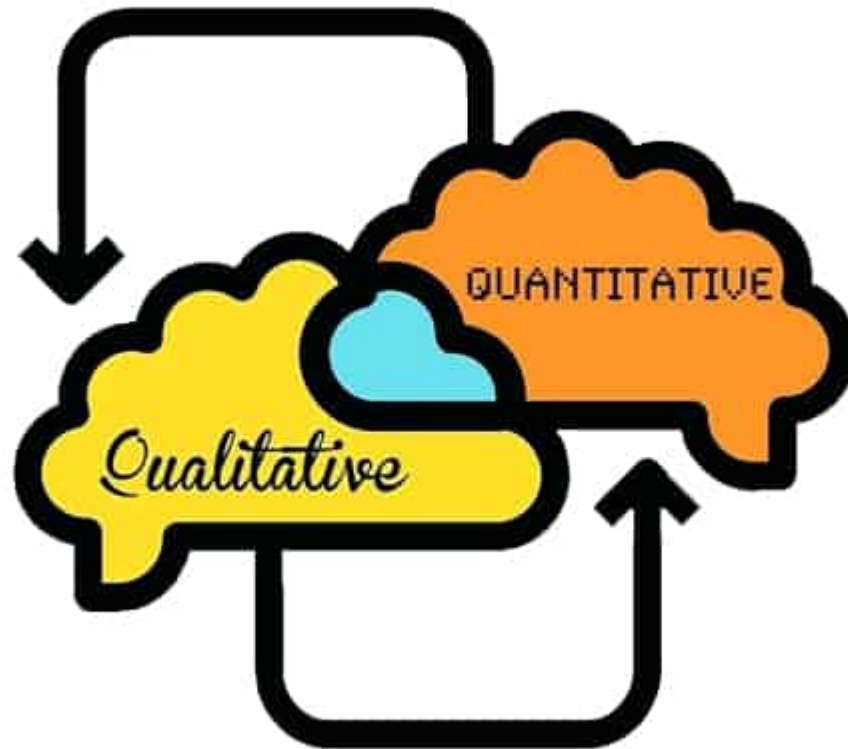# COMPASS Counter Program | **Portable Counters**

2. How is our data used?

Before Vs. After Counts

Cyclical counts

1990 - - - - - - - 2000 - - - - - - - 2010 - - - - - - - 2020
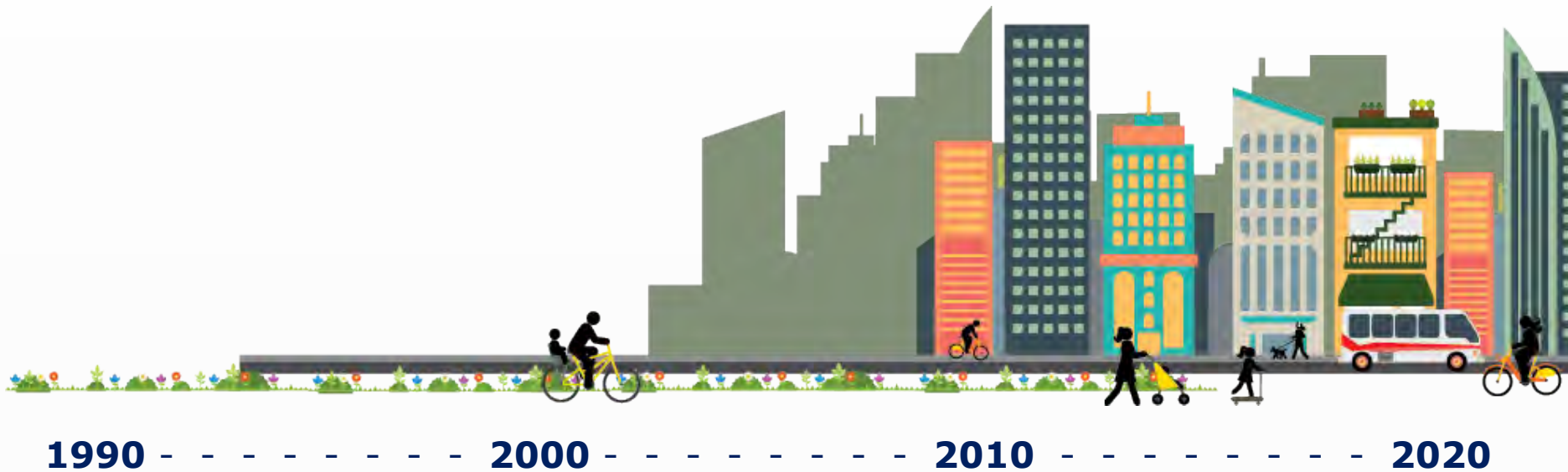
"Local Decision Makers"

3: Braden's "Top Three" Tips

1. Know your equipment

2. Know your site

2. Know your site

2. Know your site

2. Know your site

3. Prepare, Prepare, Prepare

HAVE A SYSTEM!

Contact

Braden Cervetti
Active Transportation Planner
BCervetti@compassidaho.org

Find us online!

www.compassidaho.org

www.instagram.com/compassidaho

www.facebook.com/compassidaho

www.youtube.com/compassidaho

www.twitter.com/compassidaho

COMPASS
COMMUNITY PLANNING ASSOCIATION
of Southwest Idaho

How BikeArlington & WalkArlington use Counter Data

October 28, 2020

# Arlington's TDM Programs for Active Transportation

TDM = Transportation Demand Management

TDM removes **40,000 car trips** from Arlington roads each day

We provide education, encouragement, and information to **get more people biking and walking, more of the time**, in Arlington

Bike Arlington Walk Arlington ARLINGTON VIRGINIA

Arlington's Counter Program

37 Permanent Counters, 6 Portable Counters
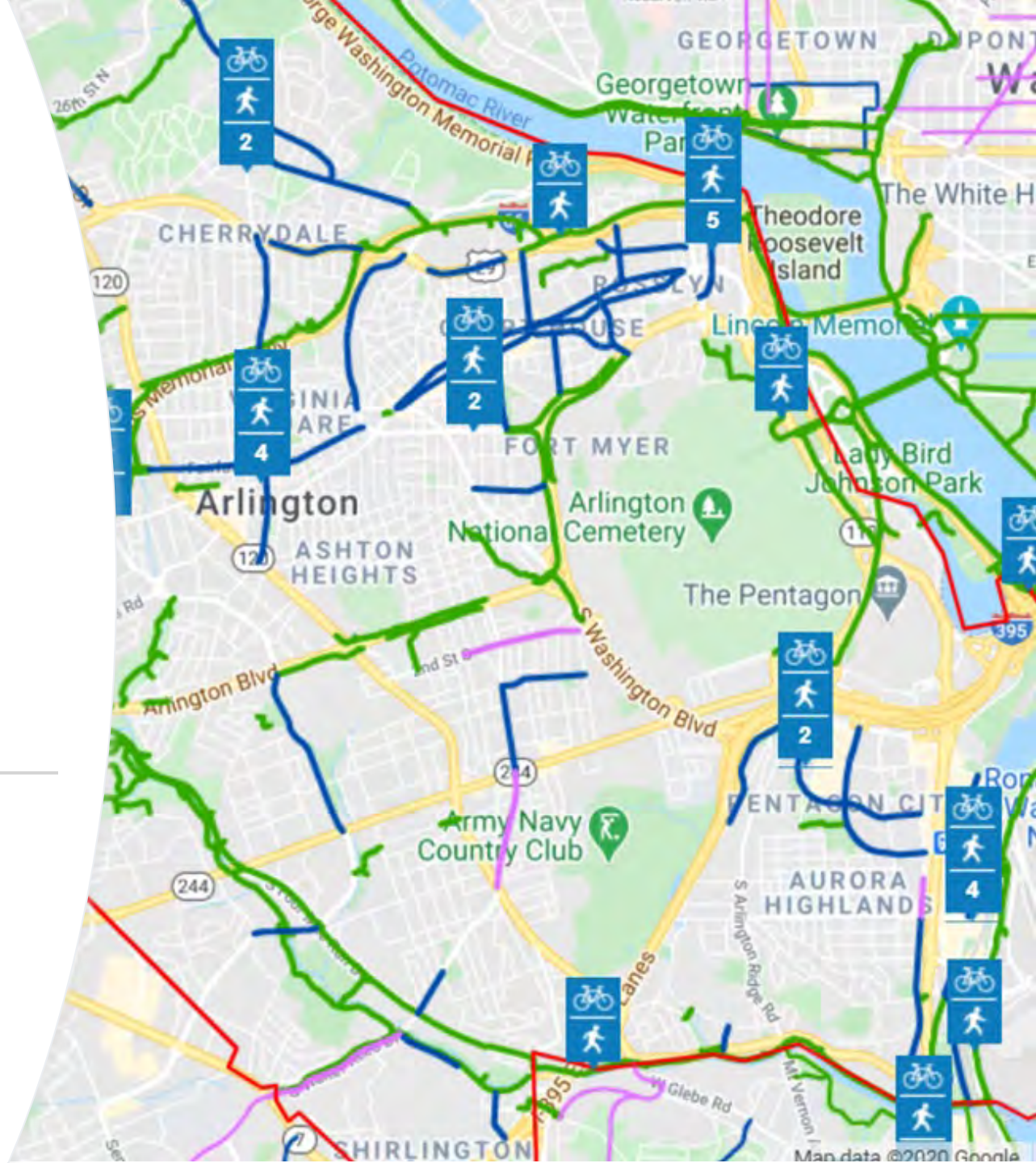
Bikeometer

Cumulative daily, monthly, year-to-date totals

Counter Takeaways

500,000 bicycle trips per year on major trails

1,000+ pedestrians per hour near Metro stations

Blend of trail activities including commuting and recreation

Seasonal profiles allow planners to **expand short-term counts into annual estimates**

6 to 7-month high season of greatest bicycle activity; Pedestrian activity varies much less

Bike Arlington Walk Arlington ARLINGTON VIRGINIA

AM/PM Weekday Peaks of Bike Commuting (7yrs)
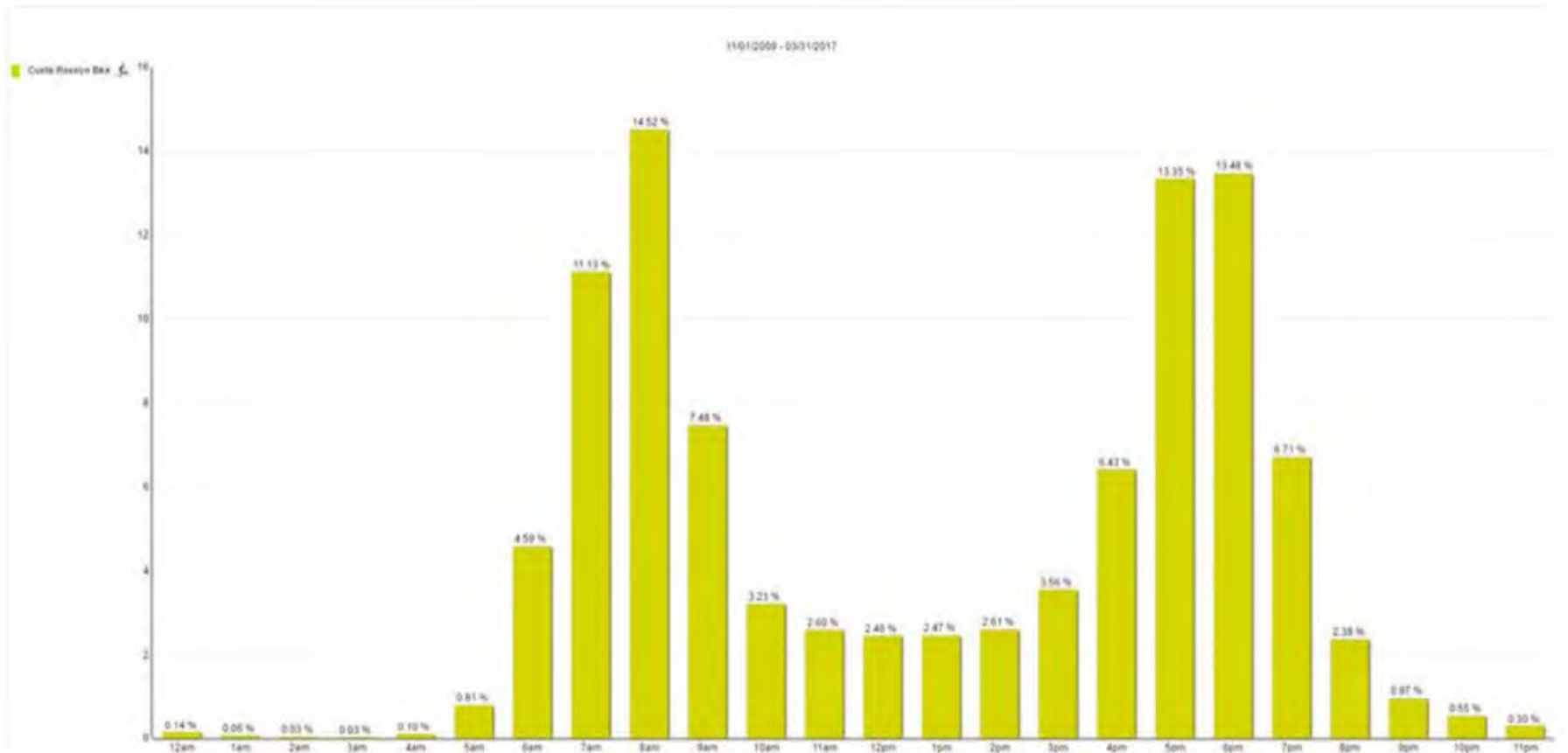
SafeTrack (2016)

COVID-19 (2020)

Two Case Studies

Safe Track

2016

The Story from the Counter Data: People Biked During SafeTrack

Bike Counter Percentage Increase Over 2015 Work Day Average

Bike traffic up to **86% higher** than previous year during SafeTrack "Surges"

How We Adjusted Based on Counter Data

During SafeTrack, we found that people are willing and able to switch modes to respond to constraints in the transportation system

→ **Start bike trains** at the Metro Stations to make getting started easier & support behavior change

→ Feature **stories of real Arlingtonians** who changed up their commute

→ **Share the data**!

Switching to Biking

Erin Potter | 🐦 @BikeArlington | December 12, 2016 | 💬 0 Comments

Erin Potter is the former Program Manager for BikeArlington.

SHARE

BIKE TAKEAWAY: What happens when your normal commute is disrupted? Well, in this area, you choose another option. For attorney Mark Flinn, that option was biking. Read his story below.
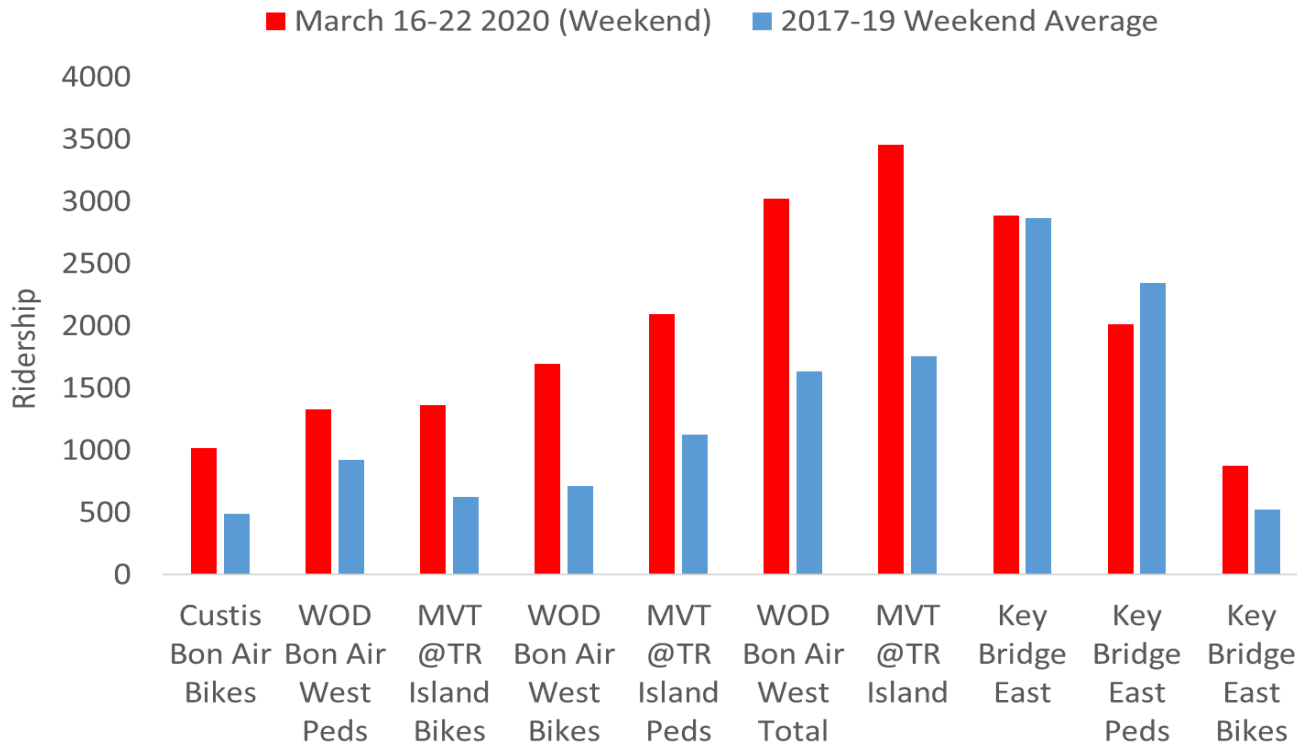
When Metro's SafeTrack initiative hit Arlington last June, there was a huge uptick in bike traffic around the county. We had even heard that some Metro riders switch to biking and never went back.
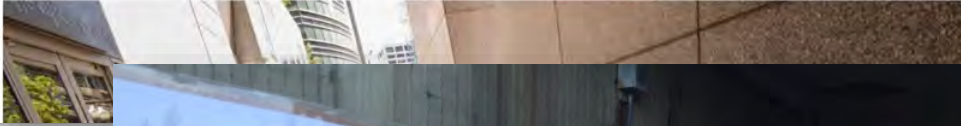
COVID-19

2020

The Story from the Counter Data: Trail Use is Way, Way Up

Traffic on three local trails was **up 50% to 243%**

Afternoons are busiest

How We Adjusted Based on Counter Data

Crowding was a clear concern (major trails showed 600+ pedestrians and bicycles per hour on weekends)

→ **Adjusted our messaging** to encourage people to ride, run, or walk on the trails earlier in the day

→ Developed a **new non-trails resource featuring low-volume neighborhood street routes**

→ Highlighted neighborhood walks in our #ArlingtonWalks video series

→ Created safe walking tips infographic

Bike Arlington Walk Arlington ARLINGTON VIRGINIA

BikeArlington
@BikeArlington

Trail counts are up 50% above average, on the weekends. Try an alternative route. Protect yourself and others by avoiding crowded trails. Here is a list of recommended alternatives routes:

bikearlington.com/takin-it-to-th...

> **Henry T. Dunbar** @HenryTDunbar · May 2
> Public Service Announcement: Avoid the bike trails today. They will be packed.

10:08 AM · May 2, 2020 · Twitter for iPhone

View Tweet activity

14 Retweets **3** Quote Tweets **22** Likes

WalkArlington
@WalkArlington

Meet Arlington residents Peter and Jenny O'Shanick, who enjoy leisurely walks in their neighborhood of Shirlington. Let us know where you're walking in the comments below. 👇 #ArlingtonWalks

Where are You Walking While the Stay-At-Home Order is in Effect?

0:46 227 views

Walk

Bike Arlington

MAPS & ROUTES   BIKE ACTIVITIES ˅   TOOLS & DATA ˅   CAPITAL BIKESHARE   EXPLORE   BLOG

HOME >> TAKIN' IT TO THE STREETS: LOW-STRESS ROUTES

TAKIN' IT TO THE STREETS: LOW-STRESS ROUTES

Arlington has a great low-stress street grid to give you other places to move if the trails are too crowded.

Explore these routes on non-trail, low-stress, and low-volume corridors for your essential travel and exercise. Bonus: This knowledge of the on-street network will help you bike around Arlington anytime!

Safe Walking Tips
For Physical Distancing

- Wear a cloth face covering
- Exercise alone and avoid groups
- Use trails during non-peak times
- Maintain 6 feet of personal space
- Wash your hands often or use hand sanitizer if unavailable
- Walk on neighborhood streets to avoid crowded trails
- Stay home if you're feeling sick

Walk Arlington ARLINGTON

bit.ly/LowStressBikeRoutes

Bike Arlington   Walk Arlington   ARLINGTON VIRGINIA

Also...
Open Data

Easy-to-use **dashboard**

Publicly available for analysis across the region and in academia

Feeds national Bike Ped Portal Dashboard out of Portland State/TREC
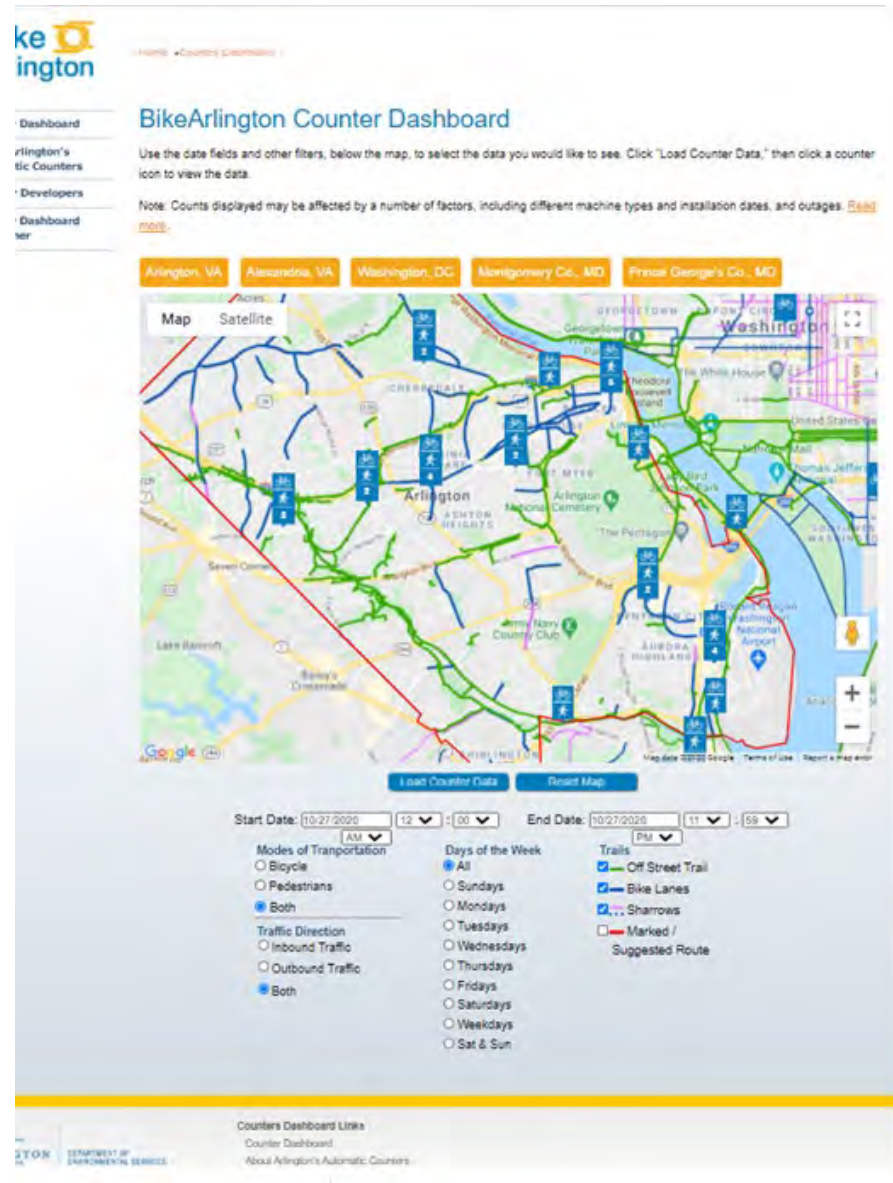
Katy Lang
Program Director, Active Transportation

Katy.Lang@WalkArlington.com
703-869-2982

Visit us at

WalkArlington.com
BikeArlington.com

@WalkArlington
@BikeArlington

Doing More with Bike Data
USA Bike Trends in 2020

League of American Bicyclists
Webinar

10/28/20

Cycling Trends Dashboard

Why?

Where do the data come from?

How representative are the counting locations?

Cycling snapshot September 2020
Key takeaways from the previous month

In almost all countries in our dataset, bike counts in September 2020 were higher than during the same period last year.

Most countries are seeing a 5-25% growth in full week bike counts compared to the same period last year.

Italy is currently leading the bike boom in our dataset. Bike counts were up 27.5% during September.

Overall, weekend bike counts are up across North America, continuing a trend we have tracked for the past 6 months. The US region of the Southwest is driving the North American growth, as it has since the start of the pandemic.

Eastern Canada is an interesting region, and we've received quite a few questions about their data. While weekday counts have been down since the start of the pandemic (strict COVID-19 restrictions, impact on commuting etc.) weekend cycling has boomed. During the last weekend of September, bike counts in this region were up a staggering 97%.

Percent change in bike counts by country
September 2020 vs. September 2019

-0.048   0.275

eco counter

Global Bike Trends

Bike count trends by country for September 2020 (compared to September 2019)

Full week percent change in bike counts
September 2020 vs. September 2019

Weekday and weekend percent change in bike counts
September 2020 vs. September 2019

Global Bike Trends

Bike count trends by country for September 2020 (compared to September 2019)

Full week percent change in bike counts
September 2020 vs. September 2019

Weekday and weekend percent change in bike counts
September 2020 vs. September 2019

+3% Weekdays
+31% Weekends
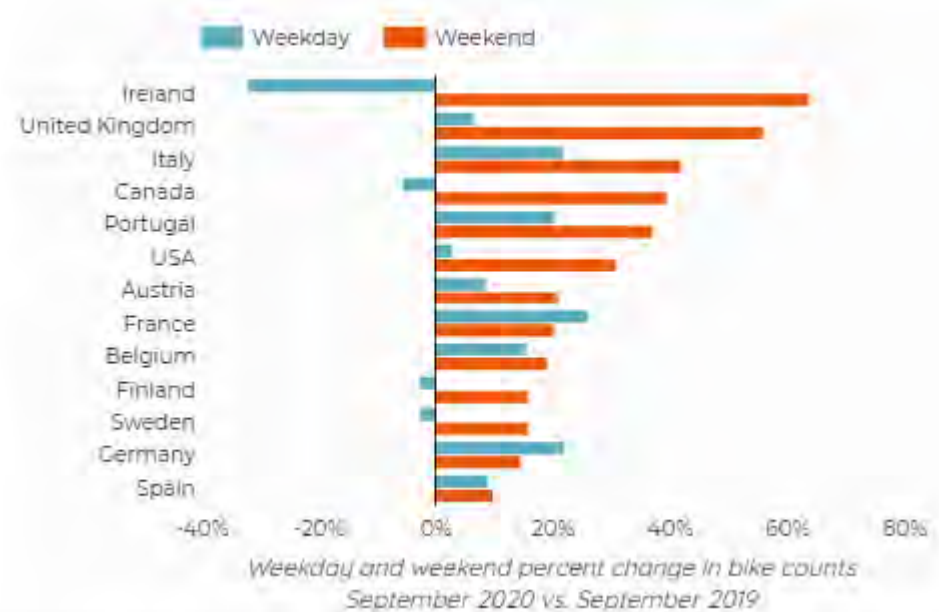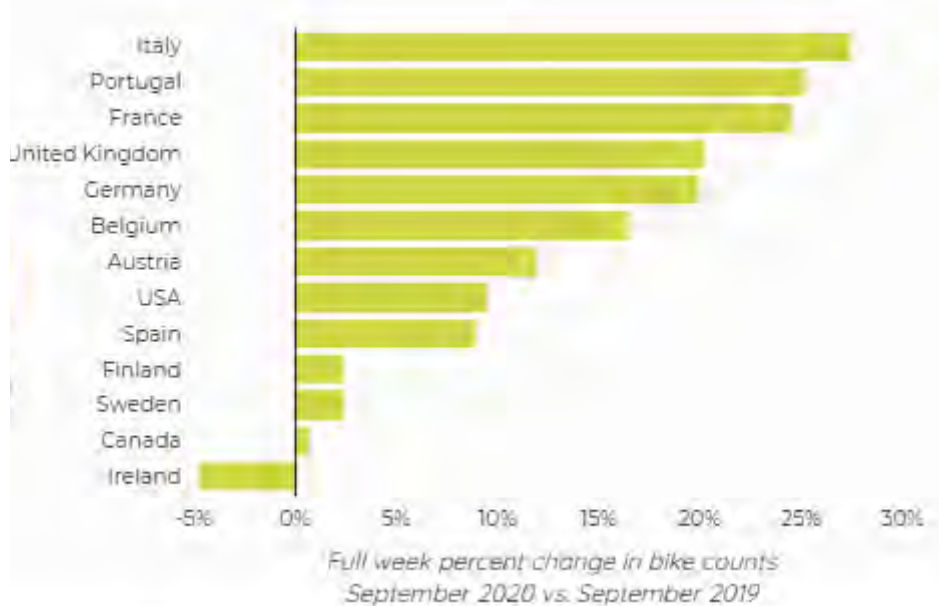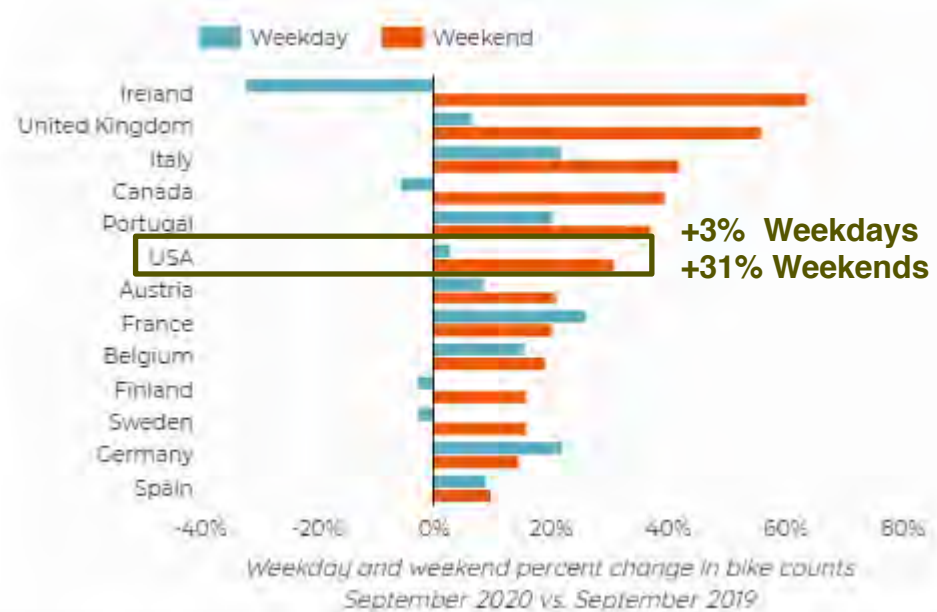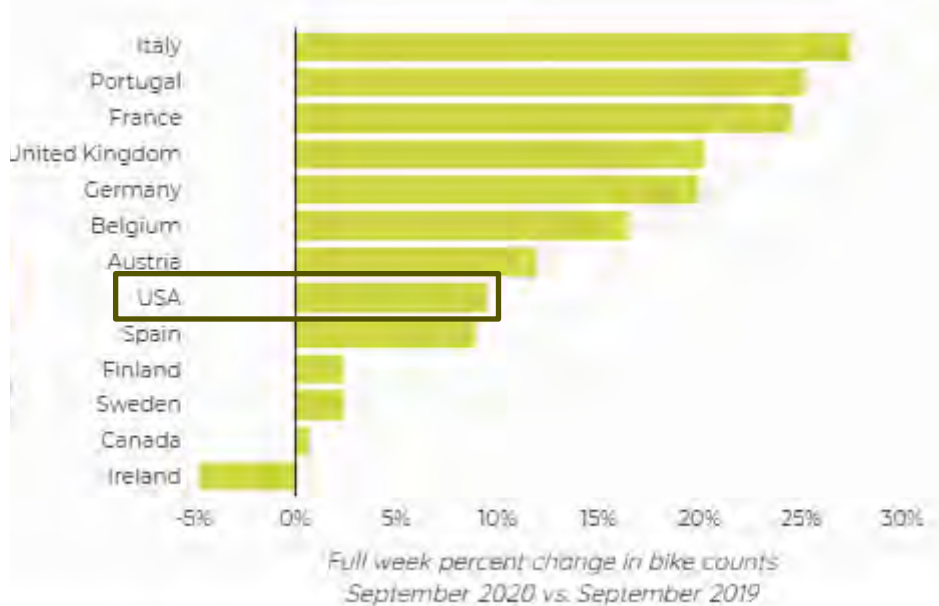
North American Bike Trends

Bike count trends by North American region for September 2020 (compared to September 2019)

Full week percent change in bike counts
September 2020 vs September 2019

Weekday and weekend percent change in bike counts
September 2020 vs September 2019
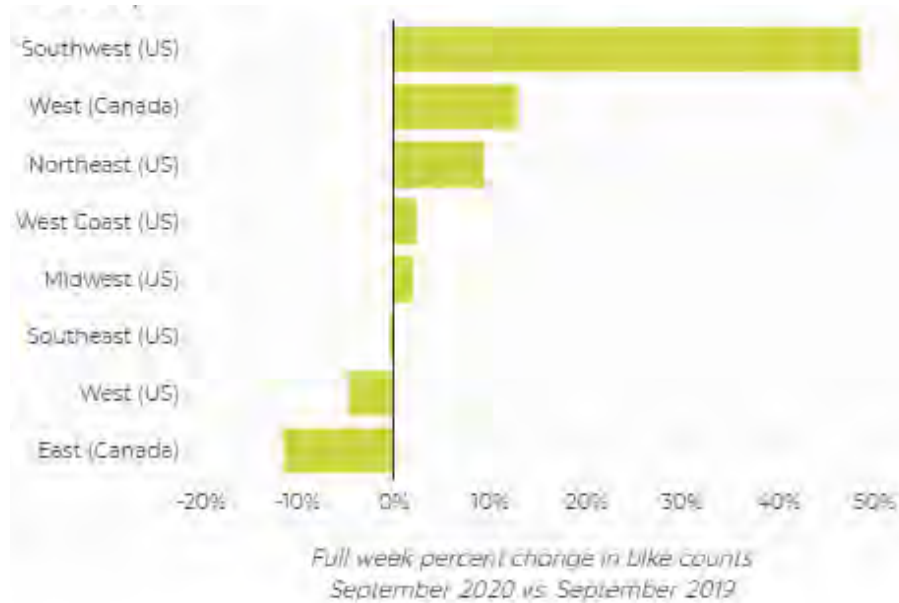
United States – 2020 vs 2019 percent change by week
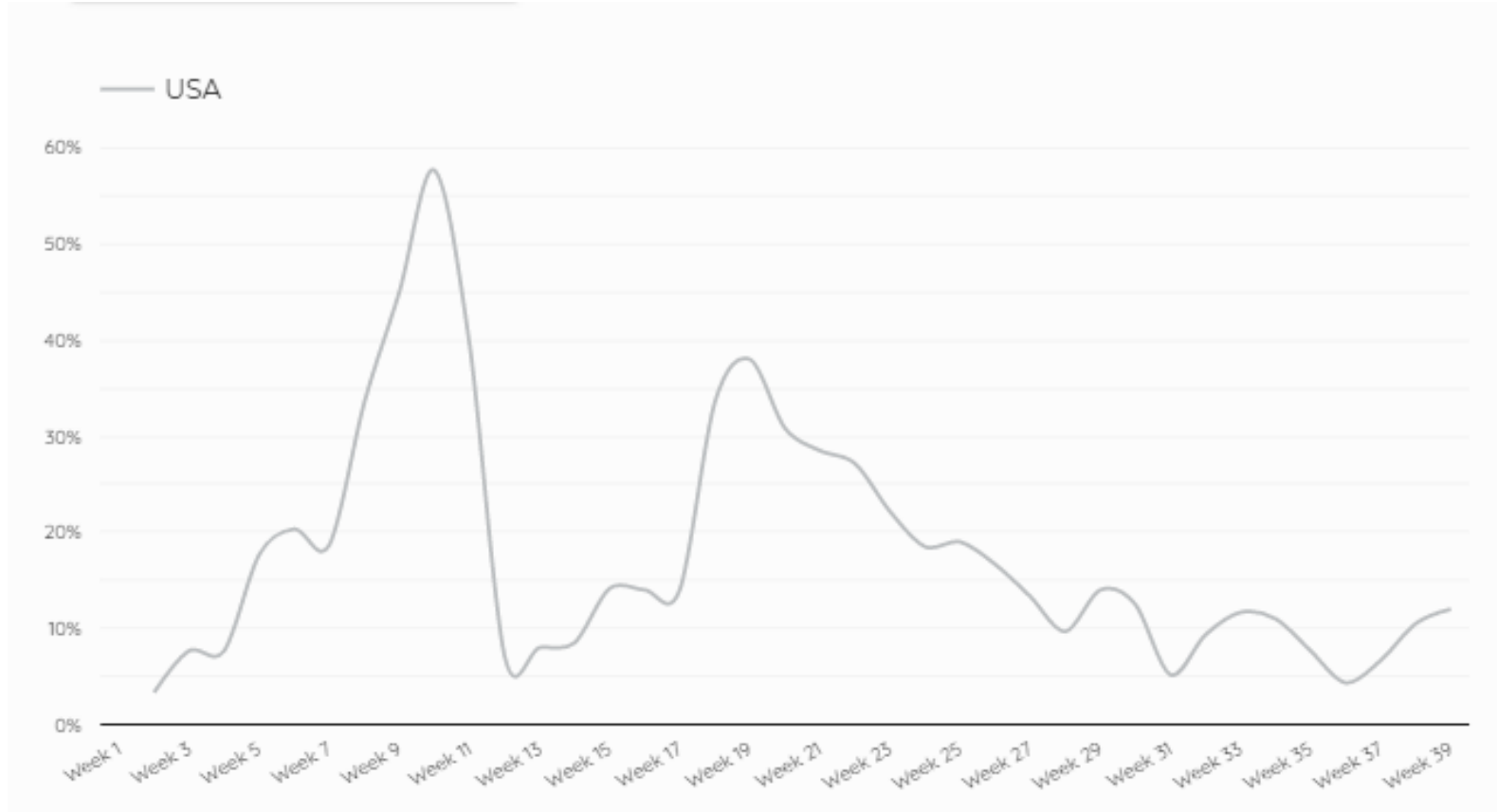
United States – 2020 vs 2019 percent change by week
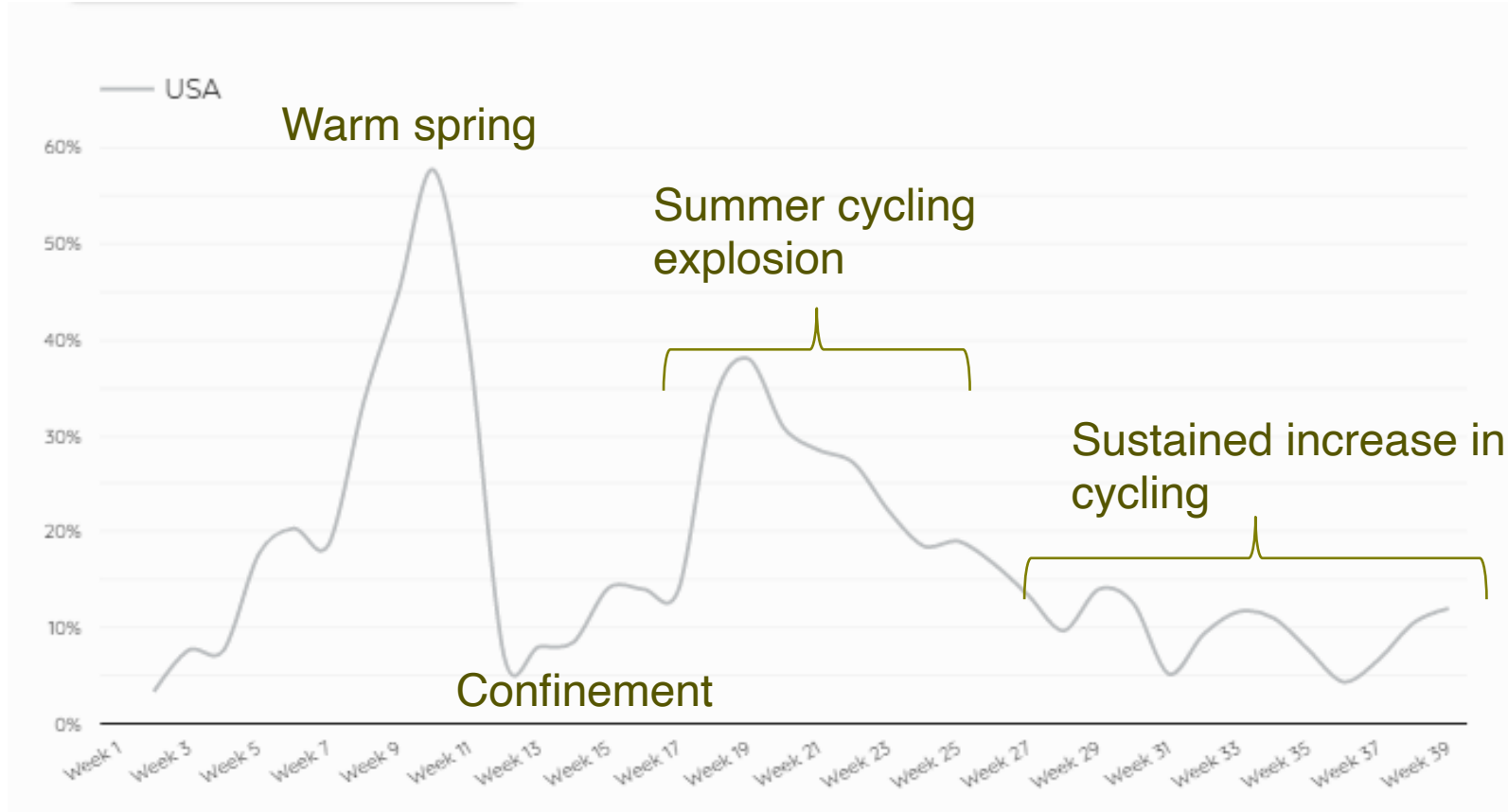
Global 2020 vs 2019 percent change by week
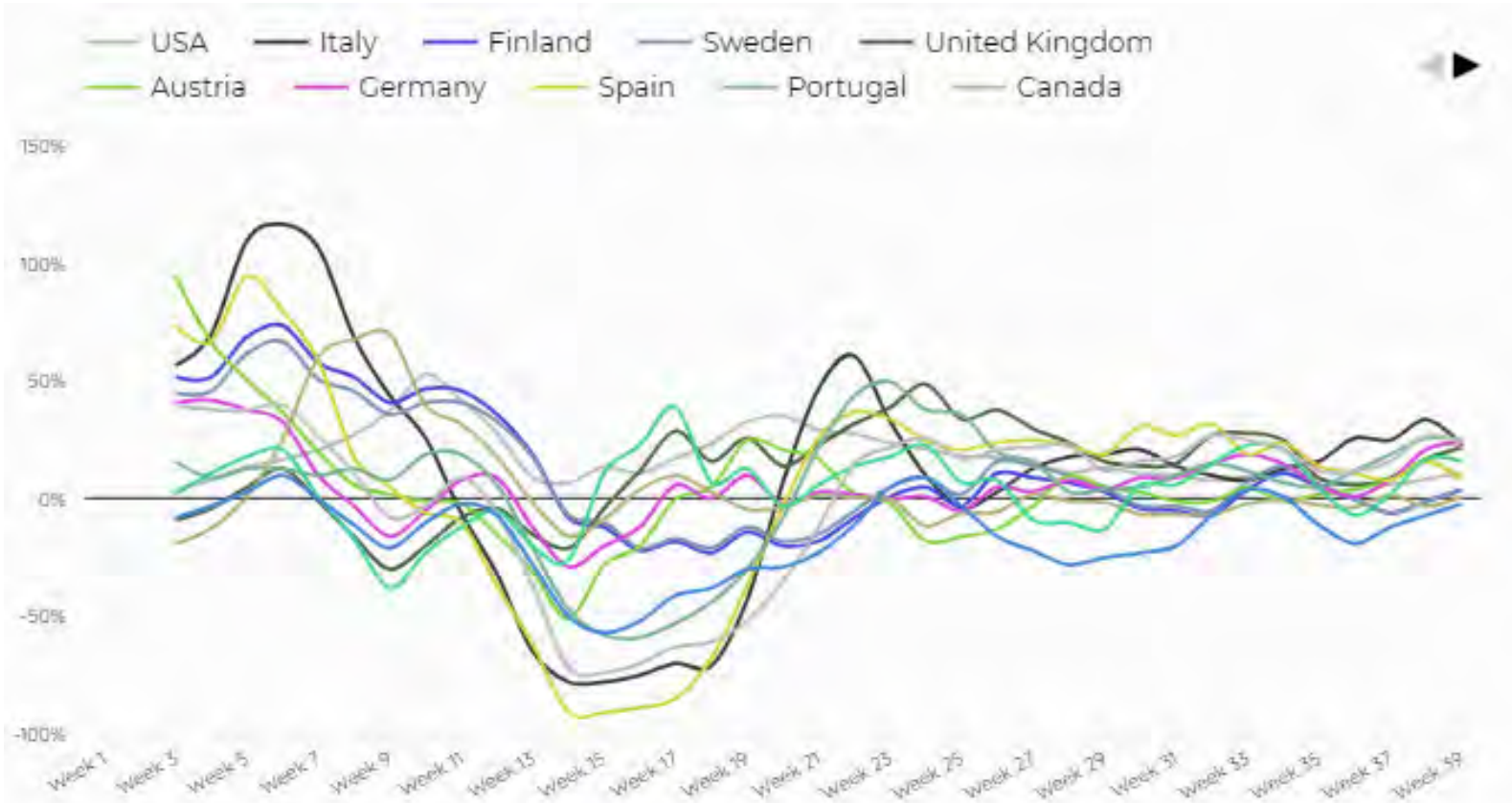
USA Northeast 2020 hourly profiles

Global Trends – Local Actions
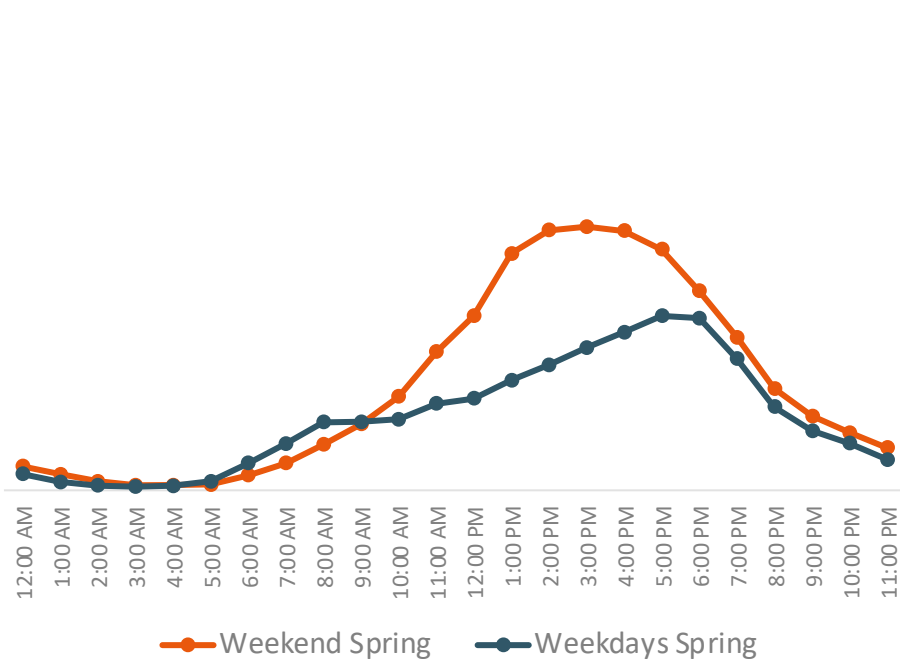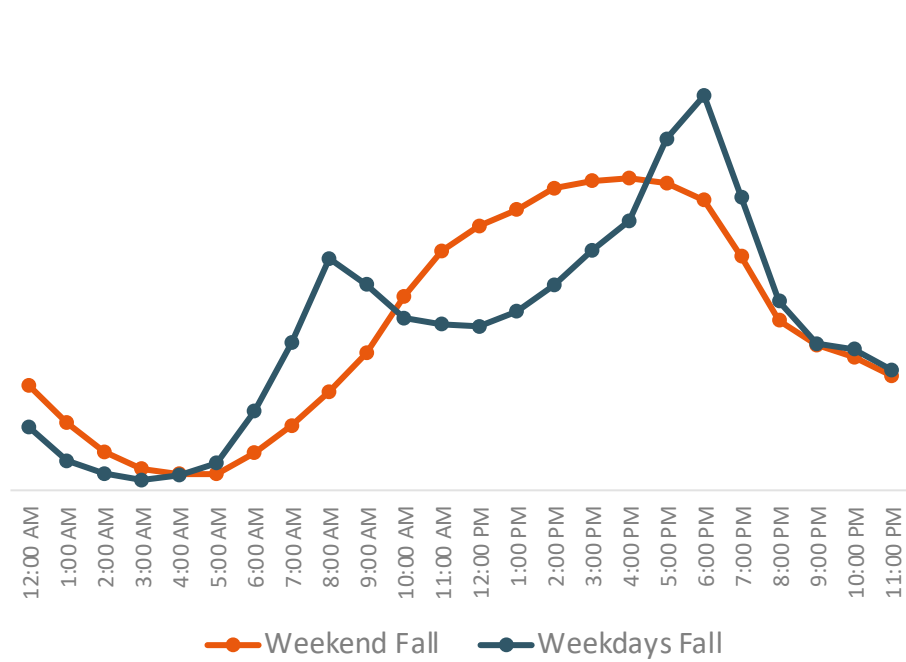
Observations

- **Bike boom in 2020 has been felt in many countries**
- **Cycling in the United States has increased significantly**
  - Moderate increase in weekday traffic
  - High increase in weekend traffic
- **COVID-19 response and weather will continue to impact regions of the United States differently over time**
  - American Northeast this Spring - weekday rush hour disappeared
  - American Northeast this Fall – weekday profile returned to typical two peak curve
- **Cycling boom: new normal?**

eco counter

ANALYSIS OF PED AND BIKE FACILITIES
PRESIDIO OF SAN FRANCISCO

10/28/2020

OBJECTIVES

1. Identify sources of data
2. Identify useful data
3. Learn about a few resources
4. Apply examples to COVID-19
5. Some US History

The Presidio

- National Park in San Francisco managed by the Presidio Trust
- 7,000 people work or live in the park and ~10 million visit annually
- 30 miles of roads, 25 miles of bikeways, and 24 miles of trail

SOURCES OF DATA

1. Permanent count stations
2. Temporary count locations
3. GIS or Online Maps
4. Cooperating agencies

SUMMARIZING VOLUME DATA

1. Peak 15min Volumes
2. Peak Hour Volumes
3. Daily Volumes

$$PHF = \frac{\text{Peak Hour Volume}}{4 \times \text{Peak 15min Volume}}$$

$$K = \frac{\text{Peak Hour Volume}}{\text{Daily Volume}}$$

Weeday Hourly - SIP First Weekend (3/21) and full Week
Ecology Trail

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

Peak Hour Volume

Daily Volume
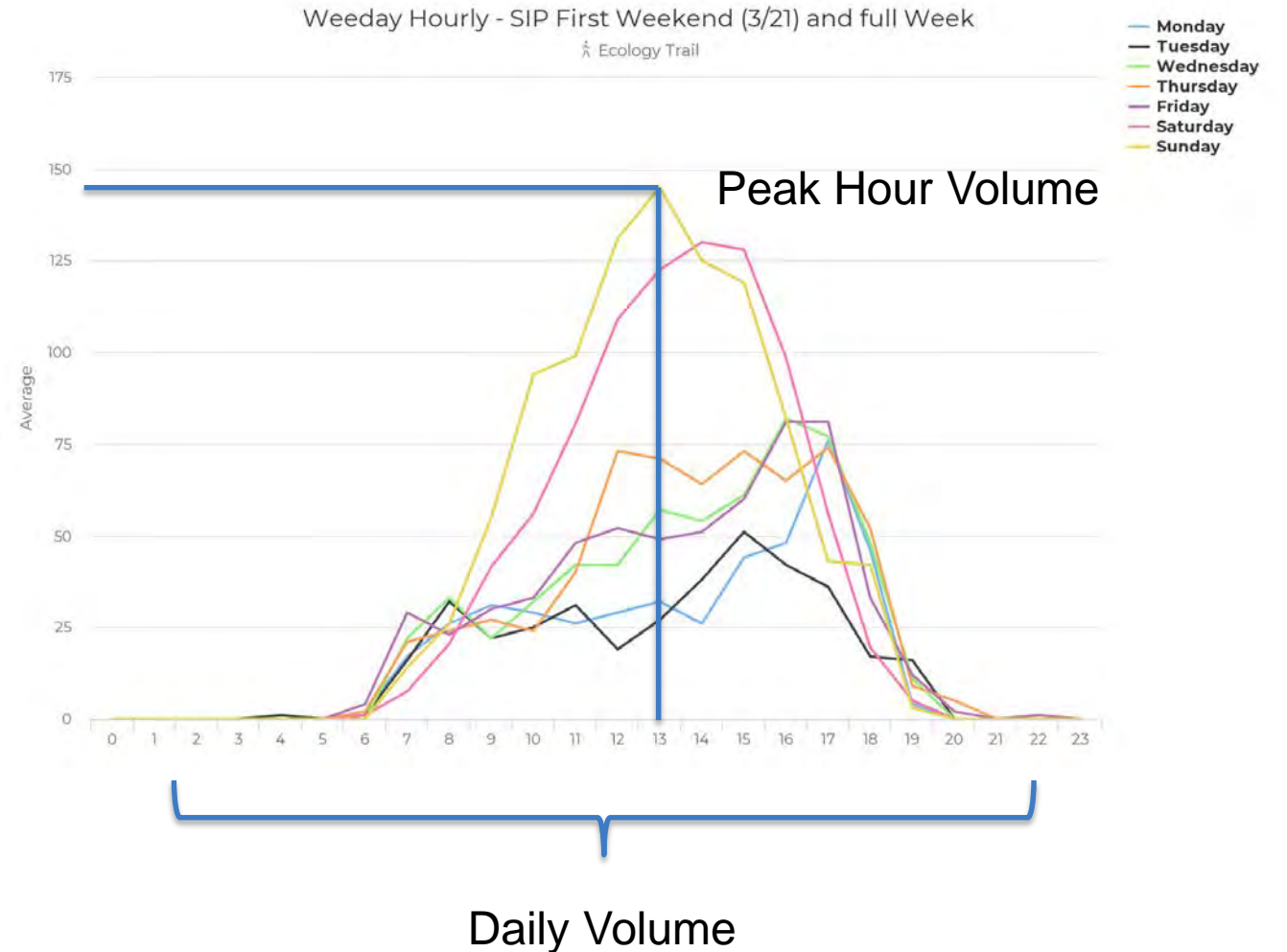
SUMMARIZING VOLUME DATA

1. Seasonal Adjustment
2. Annual Adjustment

$$SAF = \frac{\text{Annual ADT}}{\text{Month ADT}}$$

$$AGR = \left(\frac{\text{AADT(future)}}{\text{AADT(begin)}} \right)^{1/yrs} - 1$$

<u>Bike ADT by Month</u>

2018   2019

Month ADT

Daily Average

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
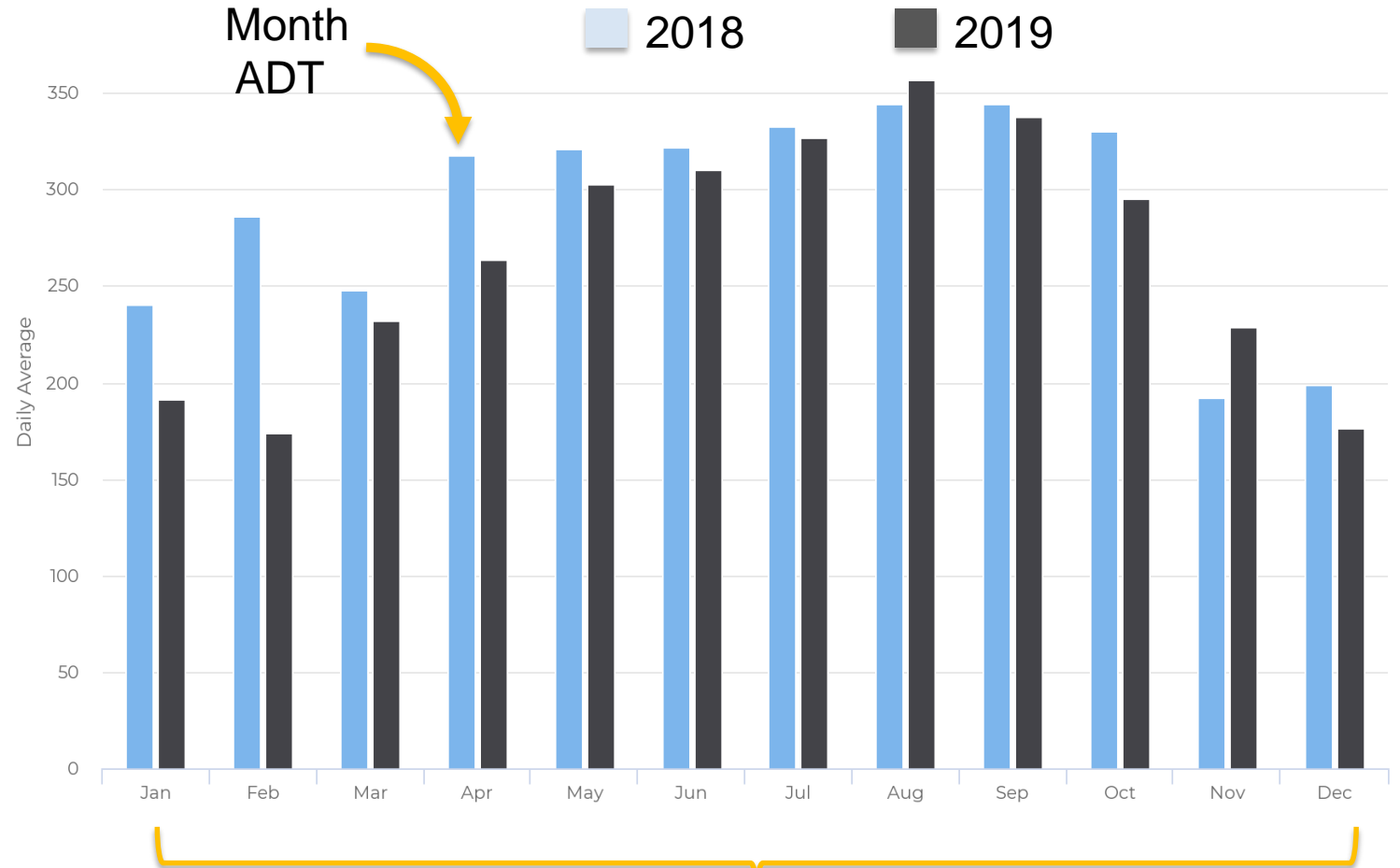
Annual ADT = Average of Month ADTs

6

SUMMARIZING VOLUME DATA DURING COVID

Bike ADT by Month

7

DATA ANALYSIS

Car Volume/Speed

Bike & Ped Volume/Speed

FHWA Bikeway Selection Guide

MassDOT SBL Guide

Bike LTS

Ped/Bike LOS

Design Guides

Shared-Use-Path LOS

Walkway LOS

Qualitative Performance Measures
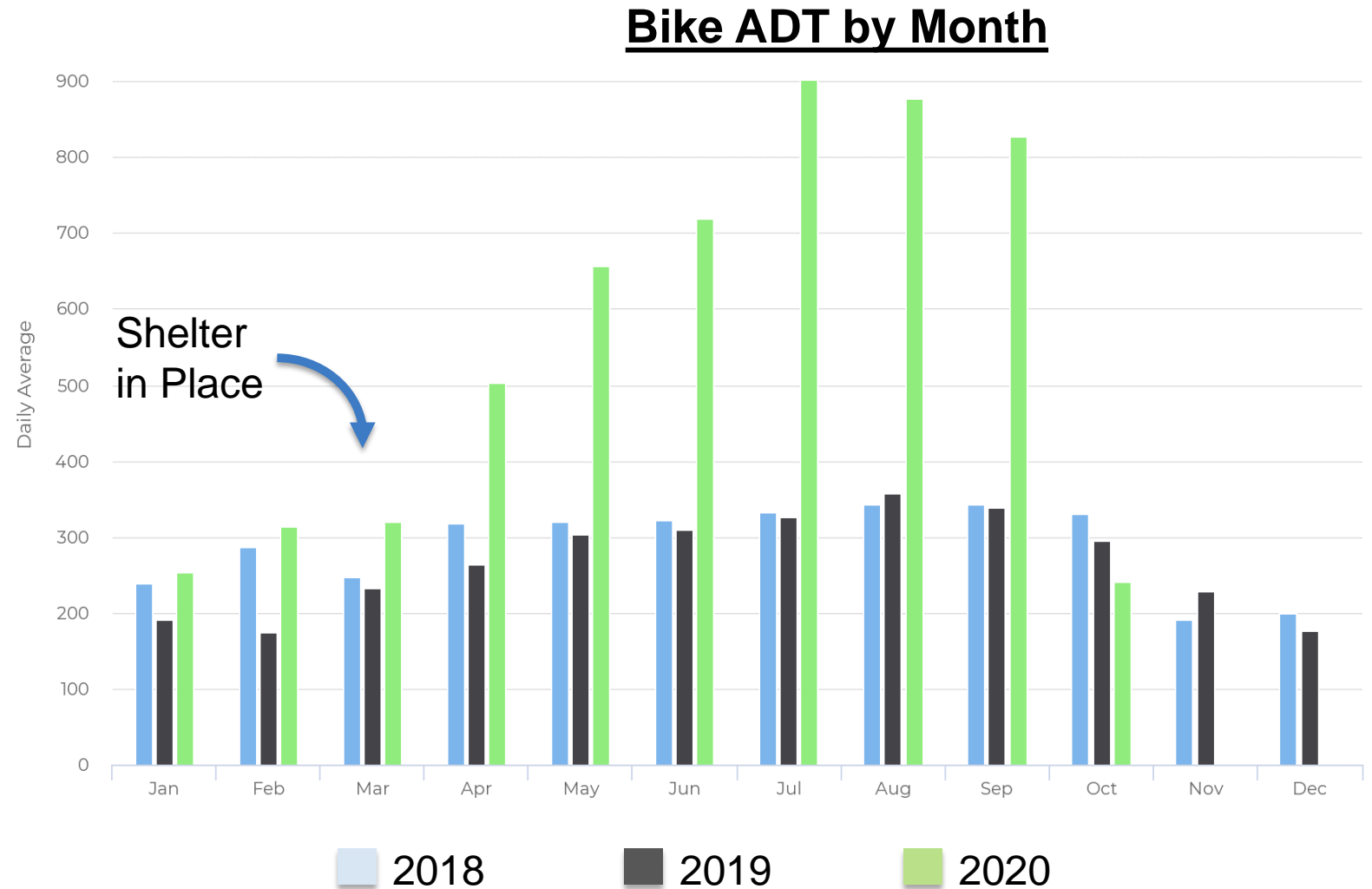
Facility Characteristics
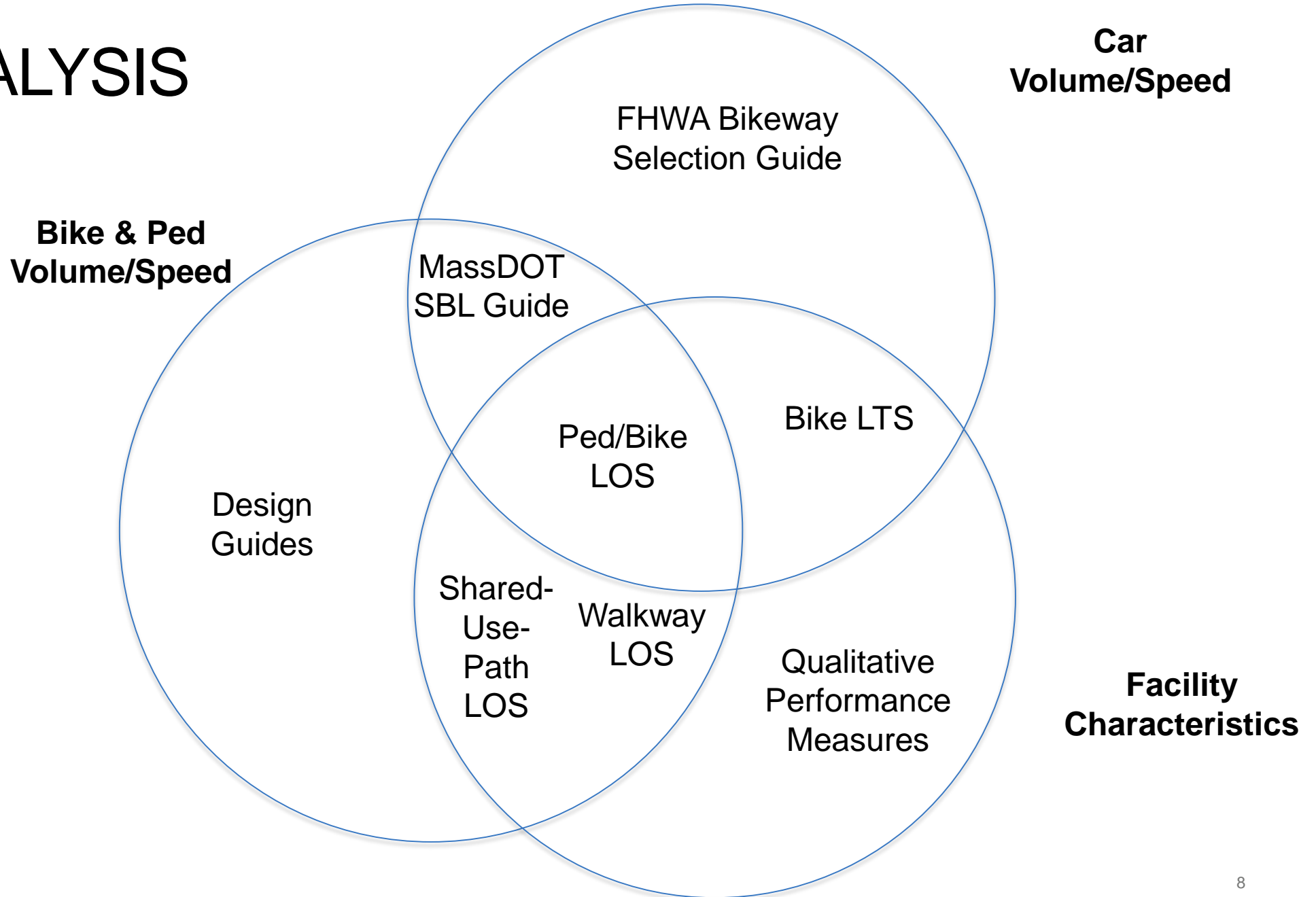
Key

SBL = Separated bike lane (cycle track)

LOS = Level of Service

LTS = Level of Traffic Stress

RESOURCES
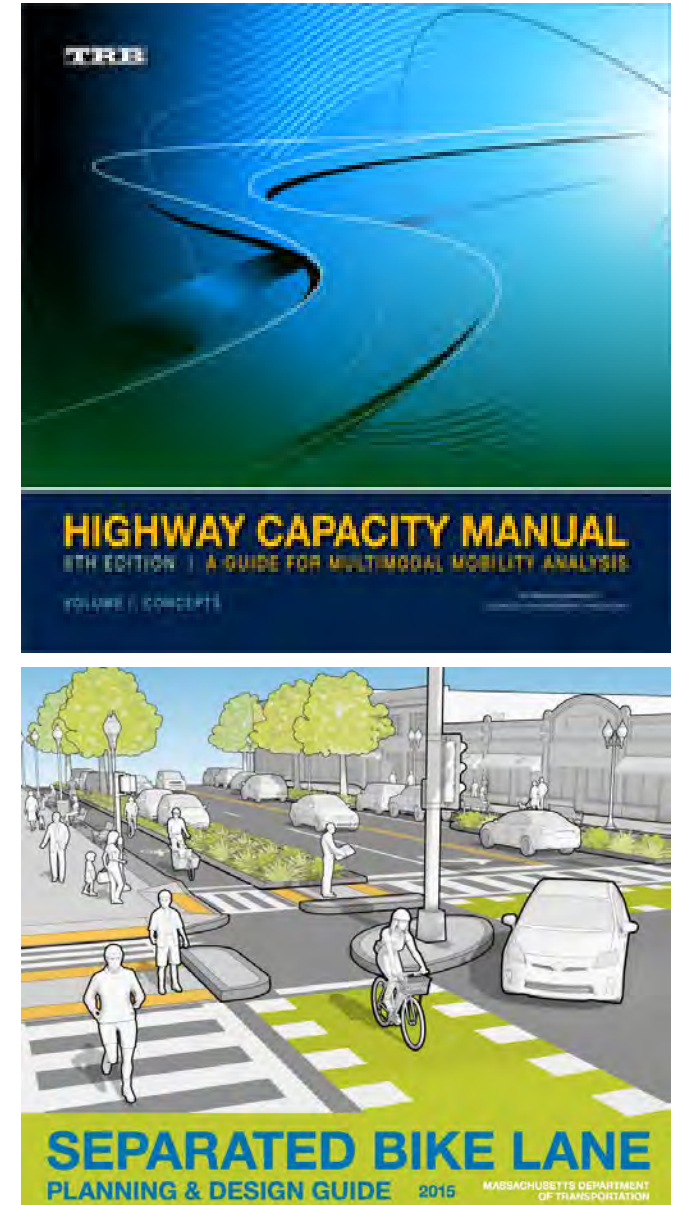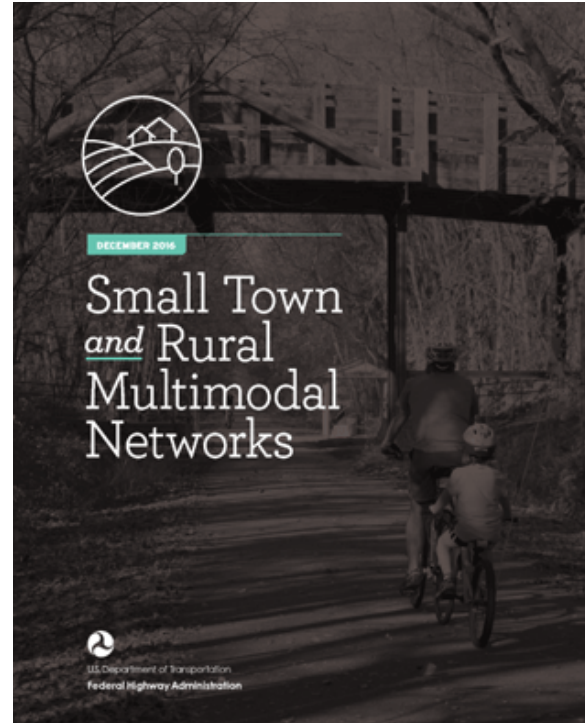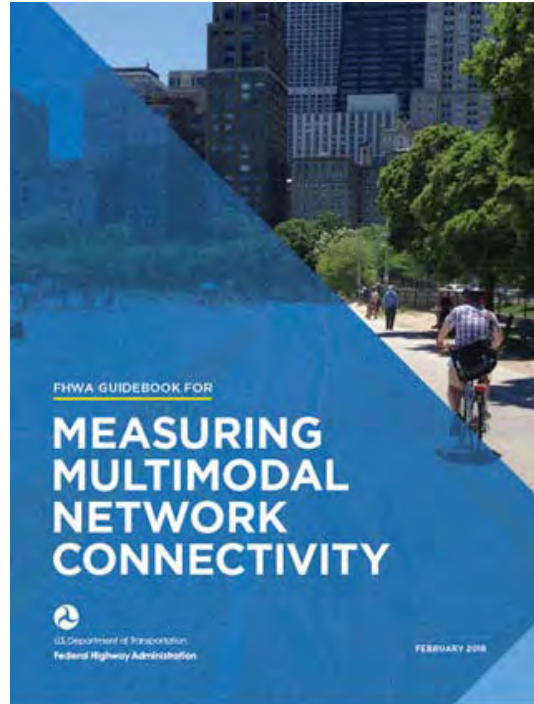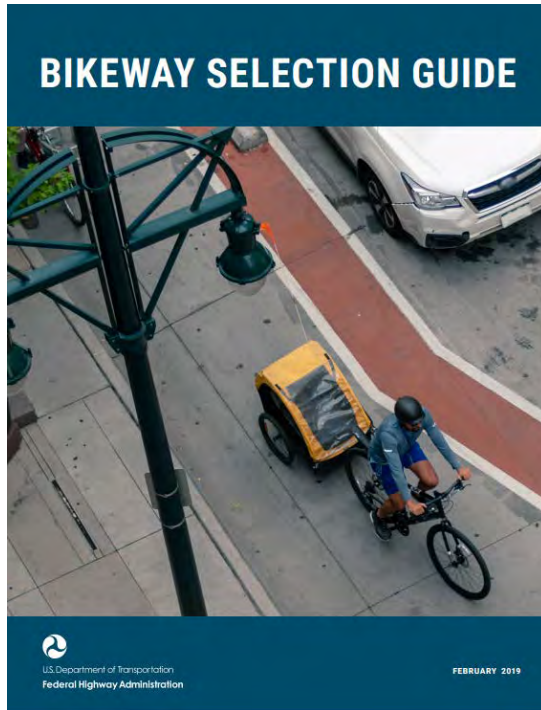
EXAMPLE ANALYSES

1. Walkway/Trail Evaluation
2. Slow Streets Evaluation

WALKWAY/TRAIL EVALUATION

DATA :

Walkway width

Pedestrian volume

ANALYSIS:

HCM Walkway (Modified for COVID)

RESULTS:

Square Foot/Person

LOS F = <8 ft^2/p
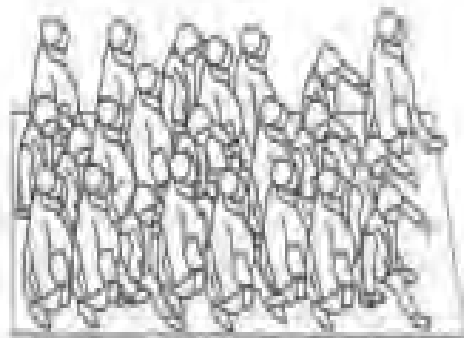
LOS A = >60 ft^2/p

EXTRA SPACE FOR COVID

Stay 6 feet apart

任何時候都要和人保持6英尺距離

Manténgase al menos 6 pies de distancia
el uno del otro a todo momento.

Manatili ng anim (6) talampakan ang distansya

SF.gov/coronavirus

6 Ft

BODY ELLIPSE

0.50 m BODY DEPTH

6 FT

0.60 m

SHOULDER
BREADTH
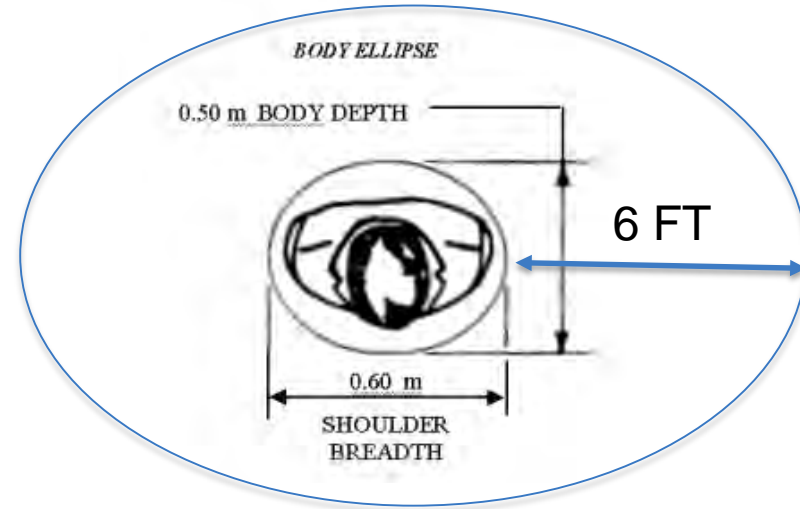
LOS F = <8 ft²/p

LOS A = >60 ft²/p

LOS COVID = 160 ft²/p
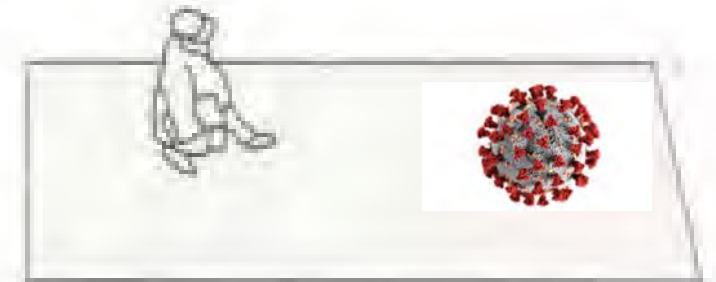
HCM PEDESTRIAN SPACE: WIDTH

Common Obstructions
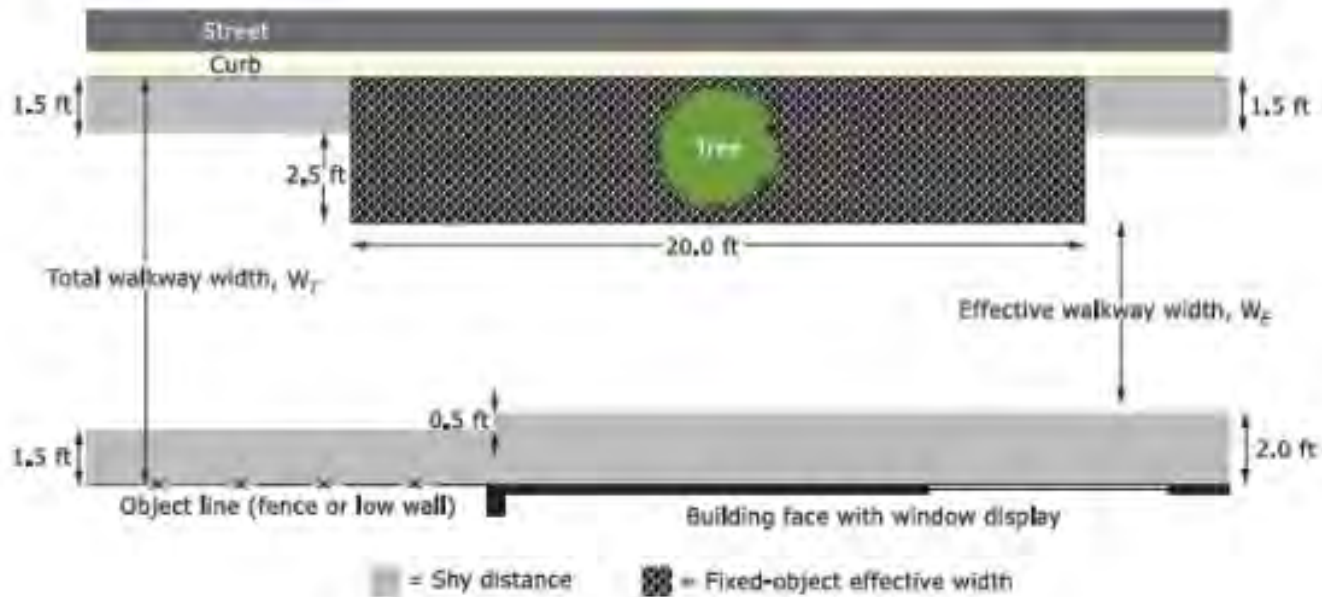
Effective Width = Sidewalk Width – Obstruction Width

HCM PEDESTRIAN SPACE: WIDTH

Effective Width = Sidewalk Width – (4.0' (Furnishings & Curb) + 2' (windows))

Effective Width < Sidewalk Width

ECOLOGY TRAIL ANALYSIS
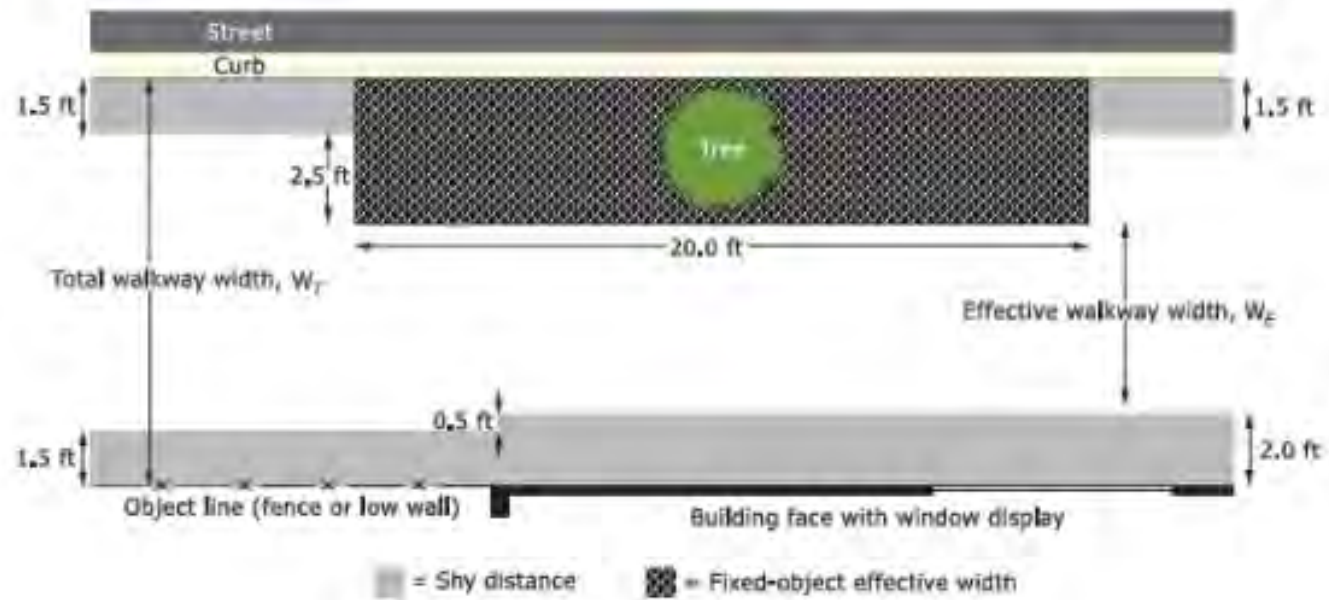
Effective Width = Trail Width – Obstruction Width

ECOLOGY TRAIL ANALYSIS
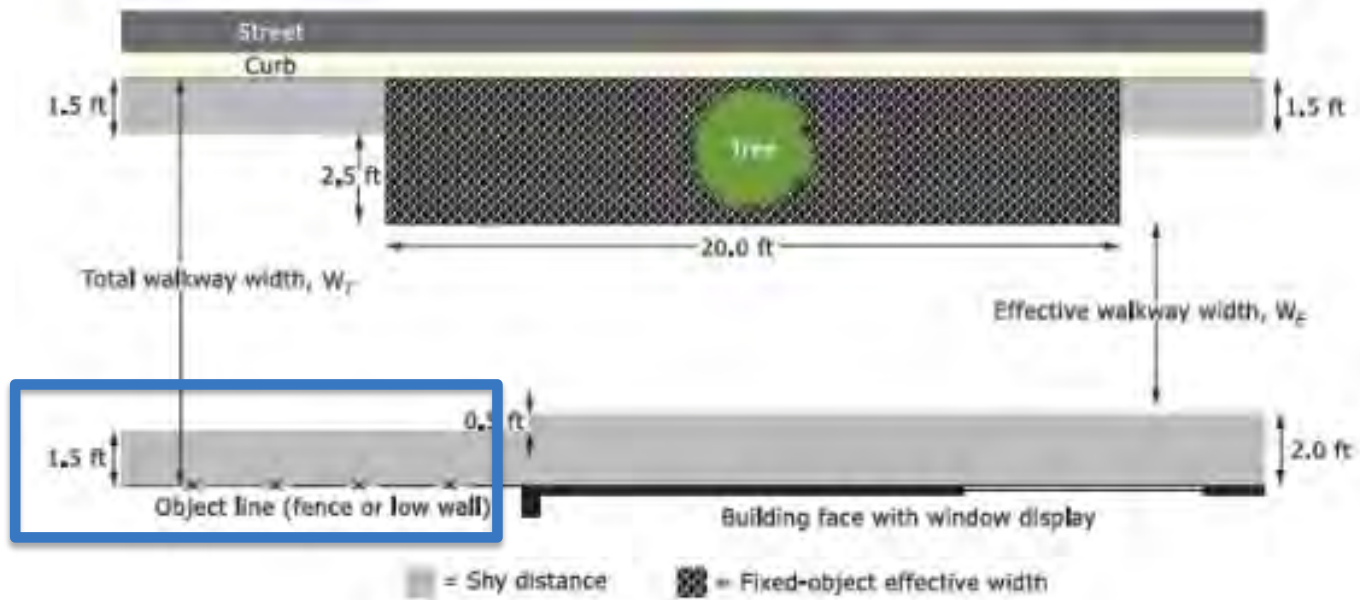
Effective Width = 6ft– 3ft = **3ft**
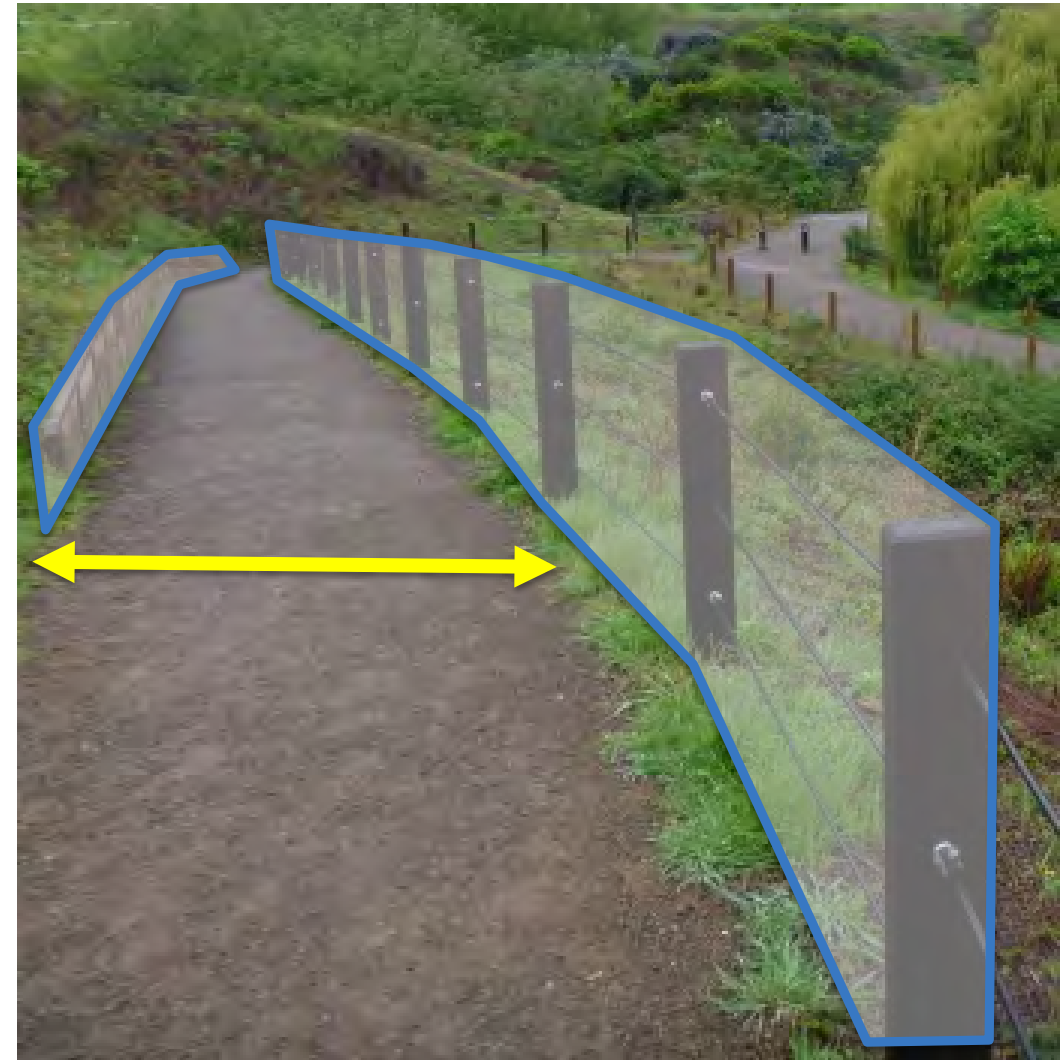
ECOLOGY TRAIL ANALYSIS

DATA:
Effective Width = **3ft**
Peak Volume = 161 pedestrians/hour
Speed (Assumed) = 3.5 ft/s

ANALYSIS:

Walkway Space = Speed * Effective Width / Volume

Walkway Space = 234 SF/person

234 SF/person > 160 SF/person (COVID - Space)

1.3 Factor of Safety…against an unknown virus…
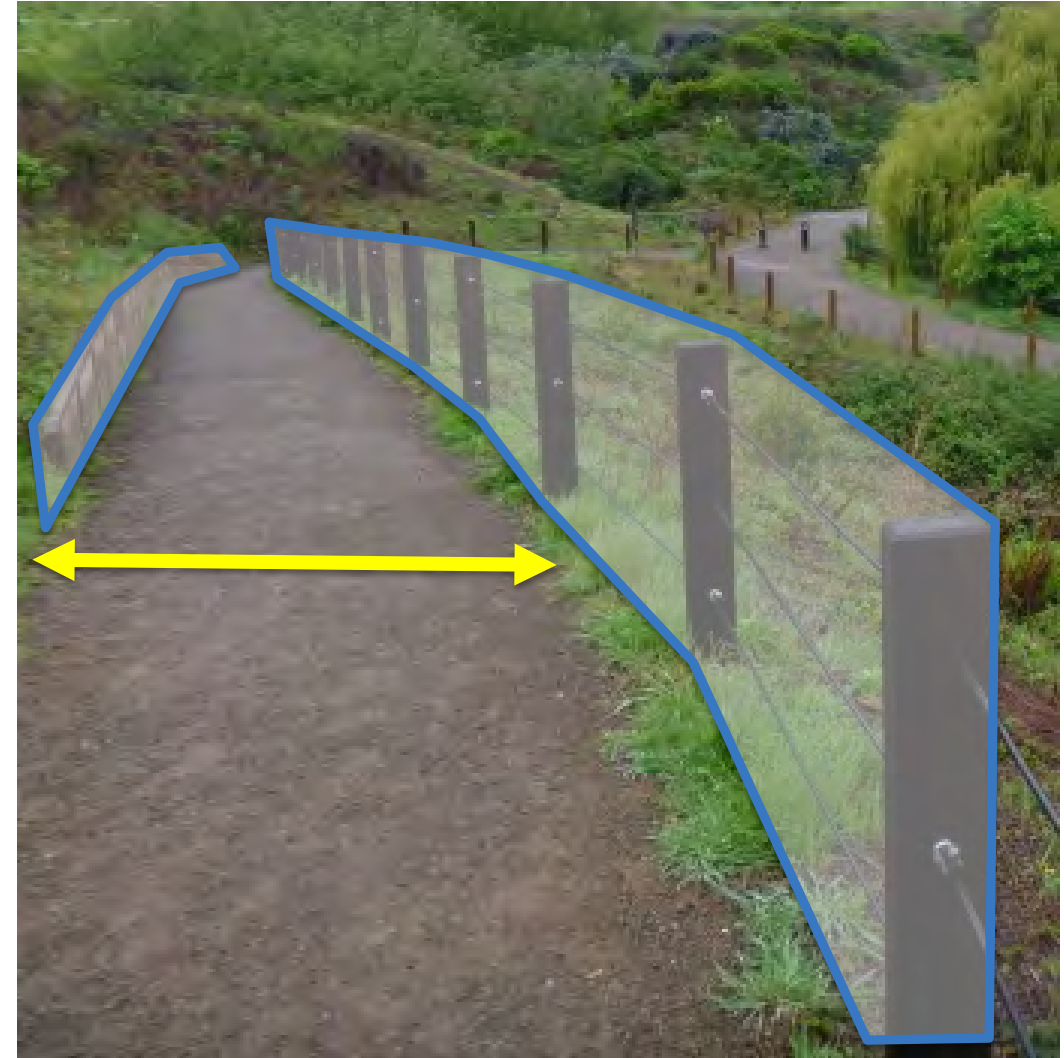
WASHINGTON BLVD SLOW STREET

DATA :

Vehicular Volume

Vehicular Speed

ANALYSIS:

Design Guides

RESULTS:

Applicability of facility
type (slow street)

WASHINGTON BLVD SLOW STREET

Washington Blvd Slow Street Data Collection

28 MPH

1300 ADT

Orange Sky
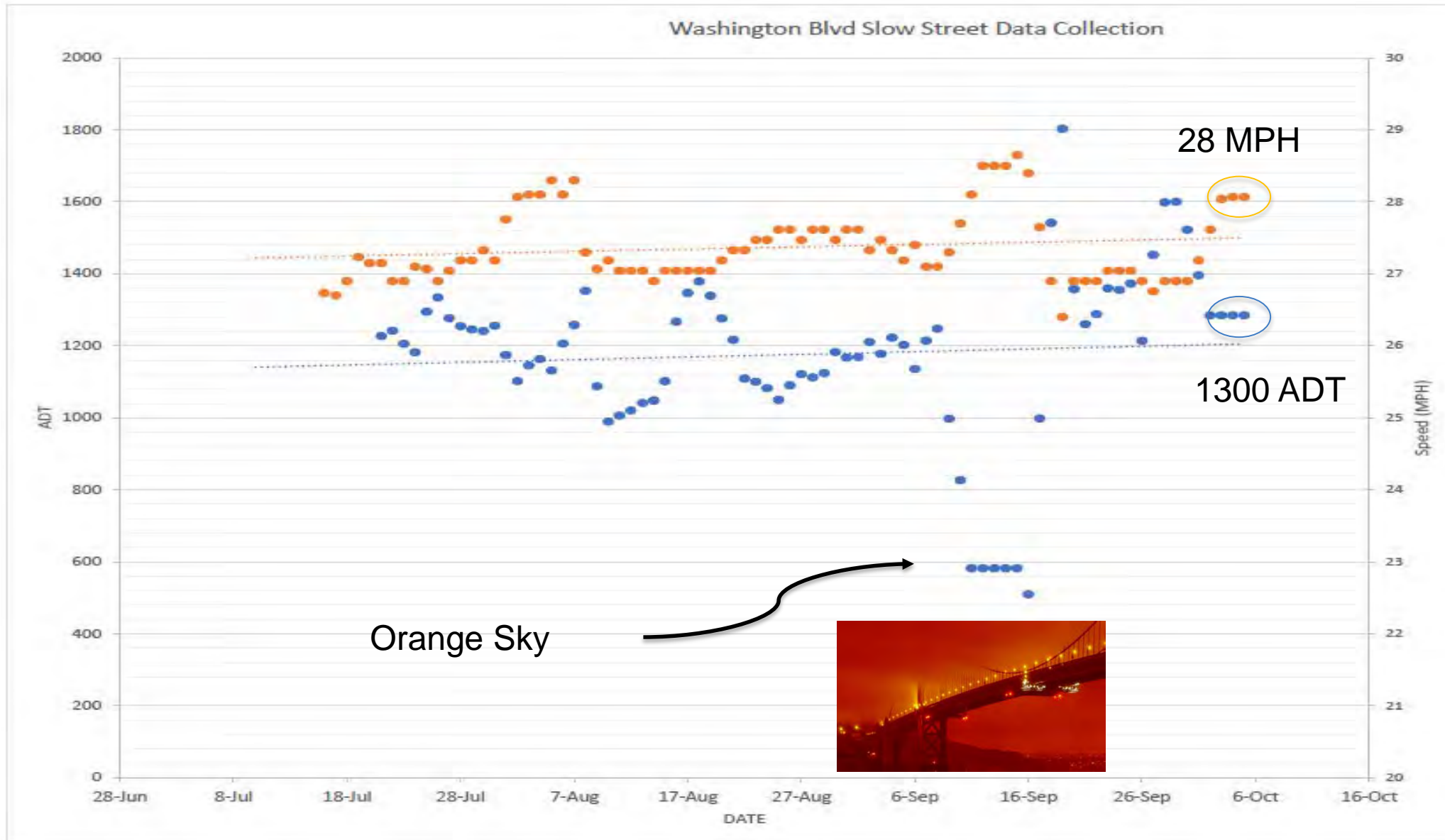
SLOW STREET ANALYSIS
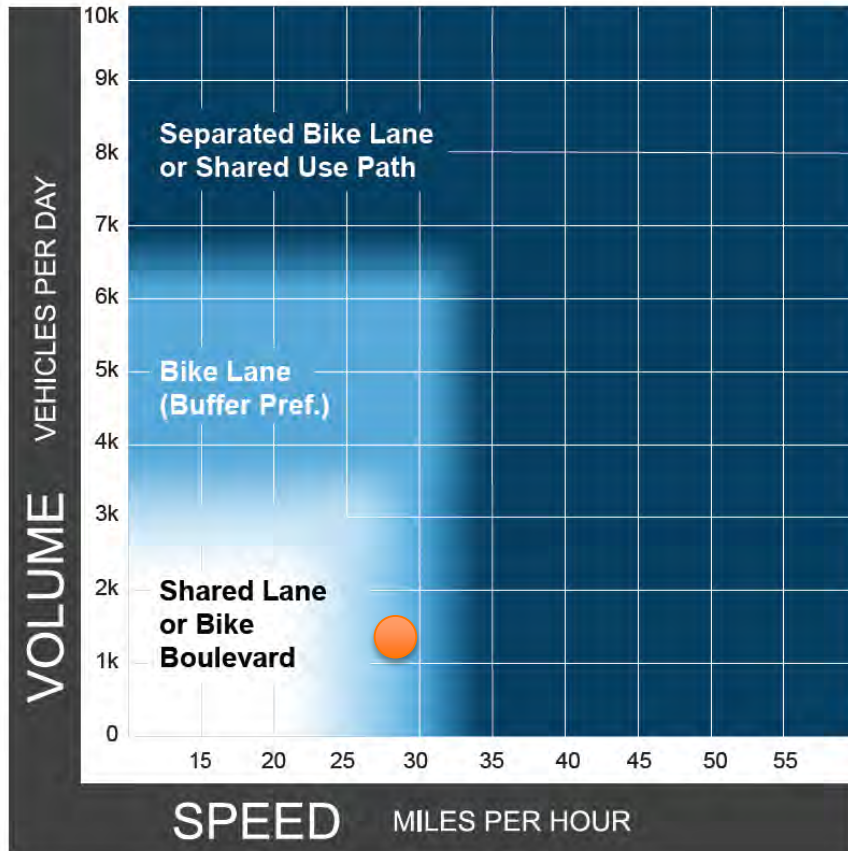
Preferred Bikeway Types
FHWA Bikeway Selection Guide
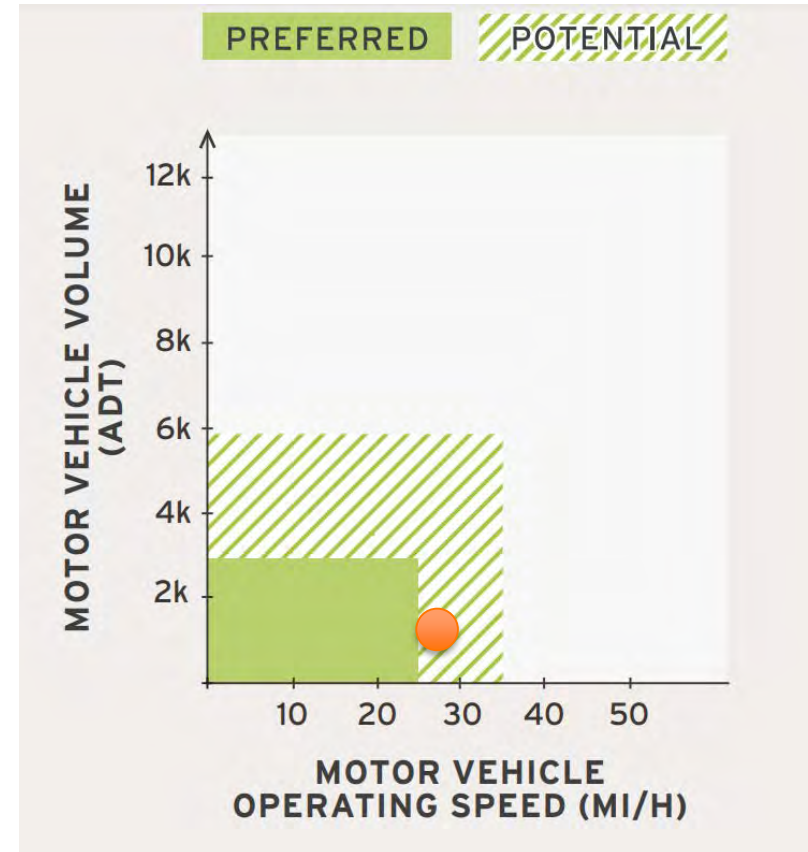
Advisory Shoulder
*FHWA Small Towns and
Rural Multimodal Networks*

SUMMARY

1. Where to source data

2. How to manipulate the data you have for analysis

3. Simple analysis procedures to evaluate pedestrian and bicycle facilities

Matt Starkey, P.E.
Transportation Engineer
Presidio Trust
mstarkey@presidiotrust.gov

Bike Data & The Bicycle Friendly Community Program

Amelia Neptune
Director, Bicycle Friendly America Program
League of American Bicyclists

482 BFCs *in all 50 states* *and the District of Columbia!*

Bicycle Friendly Communities BY STATE

Updated June 2020

THE LEAGUE » BICYCLE FRIENDLY AMERICA

See the full list at bikeleague.org/community

The state of bicycling counting 2018

In 2018, Eco-Counter and the League of American Bicyclists' Bicycle Friendly Community (BFC) program conducted a survey to examine the current state of bicycle counting. The survey provided a timely and much needed understanding of the way communities across the country do (or do not) approach bike counting, including the challenges and opportunities they face. Without further ado, here's what we learned ....

42 states represented in the survey

178 communities submitted responses

80% already collect bike count data*

1 in 4 collect only manual bike count data

75% collect another type of bike activity data** in addition to bike count data

91% of large and medium size communities have some count data experience

1 in 2 communities who collect bike activity data collect crash data

1 in 4 communities who collect bike activity data collect bike share data

top 3 motivations to begin a count program are to:
1. establish baseline information about bicycling
2. justify funding for bike related initiatives
3. measure impact of bike infrastructure projects

small organizations are most likely not to have a budget for bicycling counting.

Funding, staff time & more technological tools are the biggest barriers to progressing a count program

multi-use trails are most popular facility on which to collect bike count data. **Designated bike and on-street facilities** are also popular.

29% of communities that count report collecting sufficient or mostly sufficient data

41% of respondents with automated counters are generally satisfied with their data vs. **21%** satisfaction with manual counting

> 50% of communities with BFC Silver, Gold or Platinum status collect at least 3 types of bike activity data

61% of those who are not currently collecting bike count data are considering it

1 in 2 communities with BFC recognition have a formal plan or strategy for collecting bike data vs. **1 in 7** non-BFC or honorable mention communities

* Bike count data is defined as the number of bicyclists passing at a specific location over a given time, often expressed as a volume per hour. It can be collected from manual observations and/or automated technologies.
** On the other hand, bicycling activity data is concerned with bicyclists' demographics, behaviors, safety, etc.

BICYCLE FRIENDLY COMMUNITY

eco counter

THE LEAGUE OF AMERICAN BICYCLISTS since 1880

Growth in U.S. Bicycle Commuting

Percentage of residents commuting by bike, 1990-2013

BICYCLE FRIENDLY COMMUNITIES (BFC) *among 70 largest U.S. cities*

U.S. AVERAGE

NON-BFCs *among 70 largest U.S. cities*

1.5%
1.2%
0.9%
0.6%
0.3%

1990   2000   2010   2013

Data: American Community Survey, U.S. Census Bureau

Bicycling & Walking in the United States
2018 Benchmarking Report
THE LEAGUE OF AMERICAN BICYCLISTS since 1880

CREATING AN ACTIVE AMERICA, TOGETHER
ACTIVE PEOPLE, HEALTHY NATION℠

ACTIVITY-FRIENDLY ROUTES TO EVERYDAY DESTINATIONS
- Complete Streets policies
- Zoning policies
- Comprehensive or Master plans
- Safe Routes

ACCESS TO PLACES FOR PHYSICAL ACTIVITY
- Shared-use agreements
- Workplace facilities and policies
- Parks and recreation centers

SCHOOL AND YOUTH PROGRAMS
- Comprehensive physical education
- Opportunities to be active before, during, or after school

COMMUNITY-WIDE CAMPAIGNS
- Events combined with multi-channel messaging

SOCIAL SUPPORTS
- Walking or other activity groups
- Groups that support people with disabilities or chronic conditions

INDIVIDUAL SUPPORTS
- Peer or professional support
- Technology

PROMPTS TO ENCOURAGE PHYSICAL ACTIVITY
- Point-of-decision signage

EQUITABLE AND INCLUSIVE ACCESS

THE LEAGUE OF AMERICAN BICYCLISTS
since 1880

HOME   ABOUT   CHAPTERS ⌄   EXPLORE DATA ⌄   DOWNLOAD REPORT   CONTACT

BICYCLING & WALKING IN THE UNITED STATES

2018 BENCHMARKING REPORT

SIXTH EDITION

Seniors Bicycling & Walking

FIGURE 1.2.5 – PERCENT OF TRIPS BY SENIORS (AGE 65+)

Explore >> data.bikeleague.org

Download

Safety in Numbers: Biking

FIGURE 3.6.7 – SAFETY IN NUMBERS: BIKING

Footnote [71]

Download

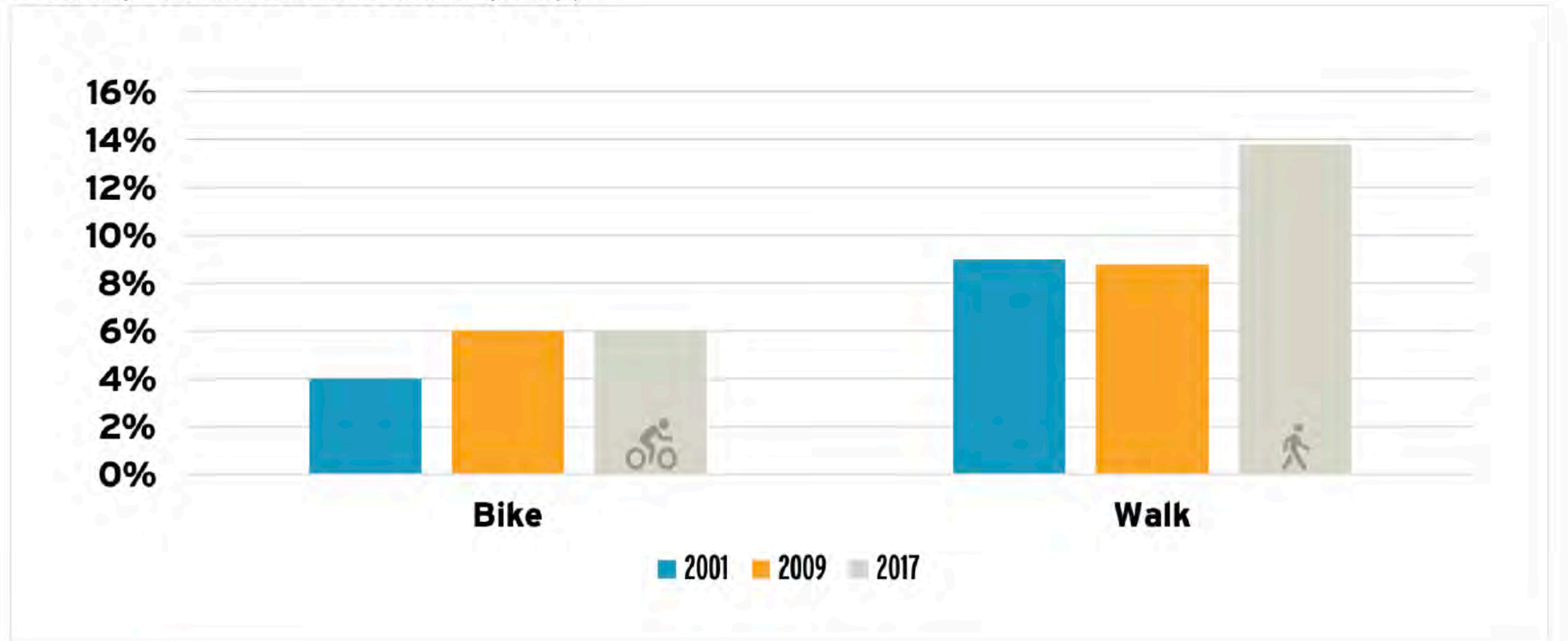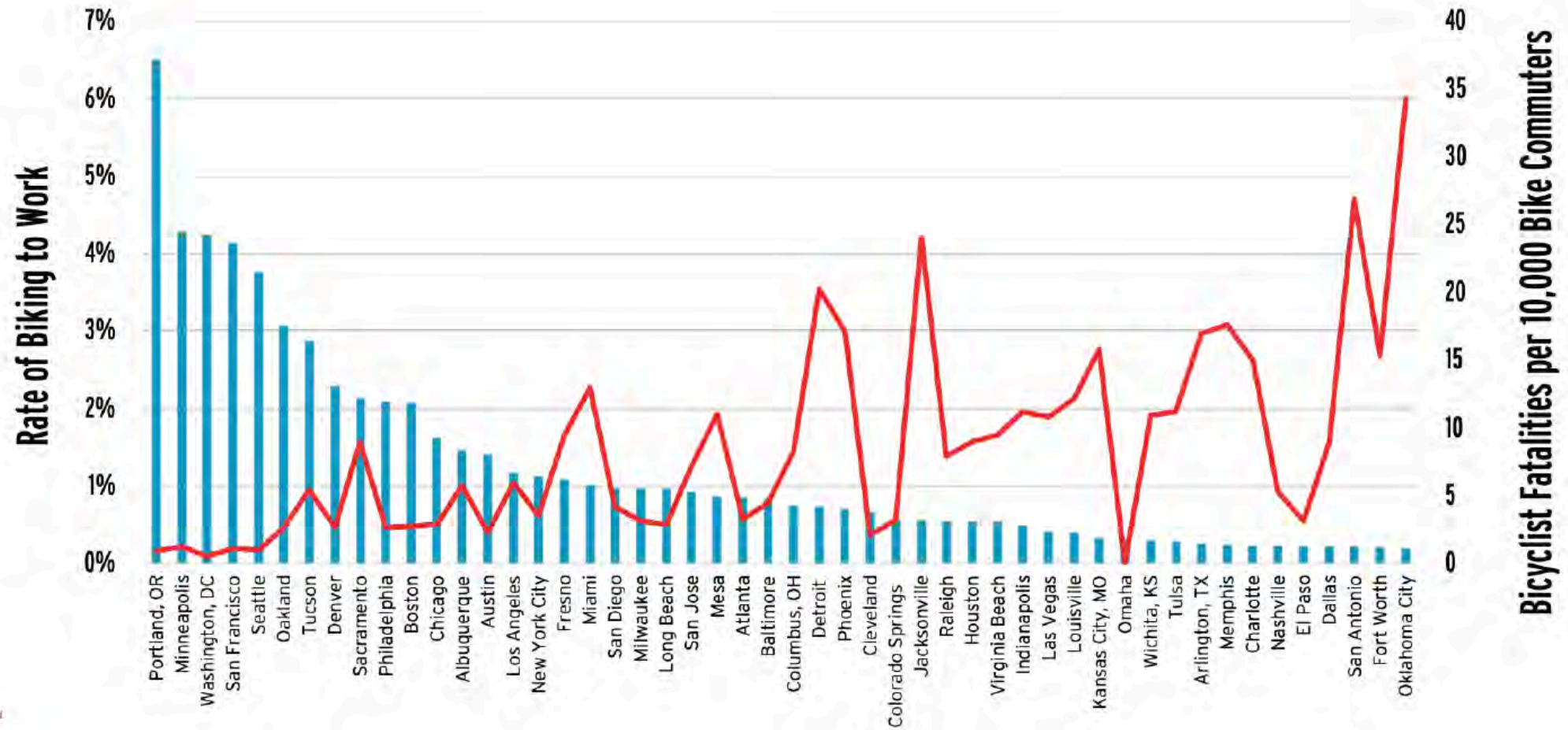**Explore >> data.bikeleague.org**

Reported Bicycle & Pedestrian Infrastructure

FIGURE 3.10.2A – REPORTED BICYCLE & PEDESTRIAN INFRASTRUCTURE, LARGE CITIES

COMMUNITY	MILES OF PAVED PUBLIC PATHS	MILES OF PROTECTED & BUFFERED BIKE LANES	MILES OF OTHER BIKE LANES	MILES OF BIKE INFRASTRUCTURE PER SQUARE MILE	MILES OF SIDEWALKS	MILES OF SIDEWALKS PER SQUARE MILE
Albuquerque	152	15.5	215	2.0	Not reported	Not reported
Arlington, TX	37	0	11.6	0.5	1188	12.4
Atlanta	42	9	47	0.7	884	6.6
Austin	27	37.6	179.9	0.8	Not reported	Not reported
Baltimore	35	1.45	35	0.9	Not reported	Not reported
Boston	53	6.8	102	3.4	Not reported	Not reported
Charlotte	50	3	69	0.4	Not reported	Not reported
Chicago	42	85.5	99	1.0	Not reported	Not reported
Cleveland	42.3	1.5	33	1.0	Not reported	Not reported
Colorado Springs	78.4	0	120.6	1.0	Not reported	Not reported
Columbus, OH	147	9.5	55.5	1.0	2340	10.8
Dallas	103	8.1	5	0.3	4972	14.6
Denver	64.6	12.33	330	2.7	3500	22.9
Detroit	Not reported	Not reported	Not reported	Not reported	Not reported	Not reported
El Paso	16	0	80.3	0.4	2510	9.8
Fort Worth	51.4	8.0	65.2	0.4	2500	7.4
Fresno	18	0	155	1.5	Not reported	Not reported
Houston	220	1.5	6.7	0.4	4490	7.5
Indianapolis	73.1	10	75	0.4	1466	4.1
Jacksonville	30.3	0	179.6	0.3	3114.1	4.2
Kansas City, MO	115	7.	37	0.5	2233	7.1
Las Vegas	36.5	14.9	61.87	0.8	Not reported	Not reported
Long Beach	38.6	7.3	153	4.0	Not reported	Not reported
Los Angeles	119.7	6.7	377	1.1	Not reported	Not reported
Louisville	36.5	14.9	61.9	0.3	1800	5.5
Memphis	37.6	4.9	63.1	0.3	Not reported	Not reported
Mesa	16	3	298	2.3	Not reported	Not reported
Miami	23.3	5.3	16.7	1.3	Not reported	Not reported
Milwaukee	24	1.8	165	2.0	3000	31.3
Minneapolis	94	95	70	4.8	Not reported	Not reported
Nashville	113	0	90.2	0.4	Not reported	Not reported
New York City	310	51	360	2.4	12750	42.1
Oakland	28	12.3	57.5	1.7	1120	20.0
Oklahoma City	81	0.5	7	0.1	2500	4.1
Omaha	Not reported	0	13.1	0.1	Not reported	Not reported
Philadelphia	Not reported	24.4	236.7	1.9	2700	20.1
Phoenix	51	11	496	1.1	Not reported	Not reported
Portland, OR	94.3	29.0	207.7	2.5	2455	18.5
Raleigh	97.6	0.4	42.8	1.0	849	5.9
Sacramento	94.3	0.08	207.7	3.1	Not reported	Not reported
San Antonio	83	1	219	0.7	4511	9.8
San Diego	60	101	212	1.1	5000	15.4
San Francisco	69.5	30.9	152.5	5.4	Not reported	Not reported
San Jose	113	66	376	3.1	6400	36.2
Seattle	48	9.5	98	1.9	2268	27.0
Tucson	132.45	6.4	329.7	2.1	1800	7.9
Tulsa	61.9	0	7	0.3	1002	5.1
Virginia Beach	57.2	0.1	19.6	0.3	Not reported	Not reported
Washington, DC	60	9.5	72.1	2.3	1922	31.5
Wichita, KS	74.1	2.3	21	0.7	2700	19.9

Legend: Green = 5 highest values; Red = 5 lowest values

Footnote 94

Download

Training & Events for Bicyclists & Pedestrians

FIGURE 3.8.1B – TRAINING & EVENTS FOR BICYCLISTS & PEDESTRIANS, SMALL OR MID-SIZED CITIES

COMMUNITY	YOUTH BICYCLE EDUCATION	ADULT BICYCLE EDUCATION	YOUTH PEDESTRIAN EDUCATION	BIKE TO WORK DAY EVENTS	OPEN STREETS INITIATIVES
Albany	Yes	Yes	Yes	Yes	Yes
Anchorage	Yes	Yes	Not reported	Yes	No
Baton Rouge	No	Yes	Yes	Yes	Yes
Bellingham	Yes	Yes	Yes	Yes	No
Boulder	Yes	Yes	Yes	Yes	Yes
Burlington	Yes	Yes	Yes	Yes	Yes
Charleston	Yes	No	No	No	No
Chattanooga	Yes	Yes	Yes	Yes	No
Davis	Yes	Yes	Not reported	Yes	No
Eugene	Yes	Yes	Yes	Yes	Yes
Fort Collins	Yes	Yes	Not reported	Yes	Yes
Honolulu	Yes	Yes	Yes	Yes	Yes
Madison	Yes	Yes	Yes	Yes	Yes
Missoula	Yes	No	Not reported	Yes	Yes
New Orleans	Yes	Yes	No	Yes	Yes
Pittsburgh	Yes	Yes	No	Yes	Yes
Salt Lake City	Yes	Yes	Yes	Yes	Yes
Spokane	Yes	Yes	Yes	Yes	Yes
St. Louis	Yes	Yes	Not reported	Yes	Yes

Legend: Red = No training or event reported; Orange = Not reported

Footnote 87

Download

Explore >> data.bikeleague.org

RFP Deadline >> November 15
More Information >> bikeleague.org/summit