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
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
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”
1. COMPASS Counter Program
COMPASS Counter Program

Counter Program

- Permanent Counters
- Portable Counters
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

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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
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
AM/PM Weekday Peaks of Bike Commuting (7yrs)
Two Case Studies

SafeTrack (2016)

COVID-19 (2020)
Safe Track
2016
The Story from the Counter Data: People Biked During SafeTrack

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.

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.

Ask Me About Bike Commuting!
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
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...
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
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?**

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**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 six 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%.
Global Bike Trends

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

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

- USA: +31% Weekends
- Weekdays: +3%
North American Bike Trends

Bike count trends by North American region for September 2020 (compared to September 2019)
United States – 2020 vs 2019 percent change by week
United States – 2020 vs 2019 percent change by week

- **Warm spring**
- **Confinement**
- **Summer cycling explosion**
- **Sustained increase in cycling**
Global 2020 vs 2019 percent change by week
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?
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

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

\[
K = \frac{\text{Peak Hour Volume}}{\text{Daily Volume}}
\]
SUMMARIZING VOLUME DATA

1. Seasonal Adjustment
2. Annual Adjustment

\[
SAF = \frac{\text{Annual ADT}}{\text{Month ADT}}
\]

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

Bike ADT by Month

Annual ADT = Average of Month ADTs
SUMMARIZING VOLUME DATA DURING COVID

Bike ADT by Month

Shelter in Place

Daily Average

2018 2019 2020
DATA ANALYSIS

Bike & Ped Volume/Speed

MassDOT SBL Guide

Ped/Bike LOS

Shared-Use-Path LOS

Walkway LOS

Bike LTS

FHWA Bikeway Selection Guide

Car Volume/Speed

Design Guides

Facility Characteristics

Key

SBL = Separated bike lane (cycle track)

LOS = Level of Service

LTS = Level of Traffic Stress

Qualitative Performance Measures
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 ft²/p

LOS A = >60 ft²/p
EXTRA SPACE FOR COVID

LOS F = <8 ft²/p
LOS A = >60 ft²/p
LOS COVID = 160 ft²/p
Effective Width = Sidewalk Width – Obstruction Width
Effective Width = Sidewalk Width – (4.0’ (Furnishings & Curb) + 2’ (windows))

Effective Width < Sidewalk Width
Effective Width = Trail Width – Obstruction Width
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

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
Bike Data & The Bicycle Friendly Community Program

Amelia Neptune
Director, Bicycle Friendly America Program
League of American Bicyclists
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
Explore >> data.bikeleague.org
SAVE THE DATE

2021 National Bike Summit

BIKES: OUR VEHICLE FOR CHANGE

February 28 - March 3, 2021 | Online

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