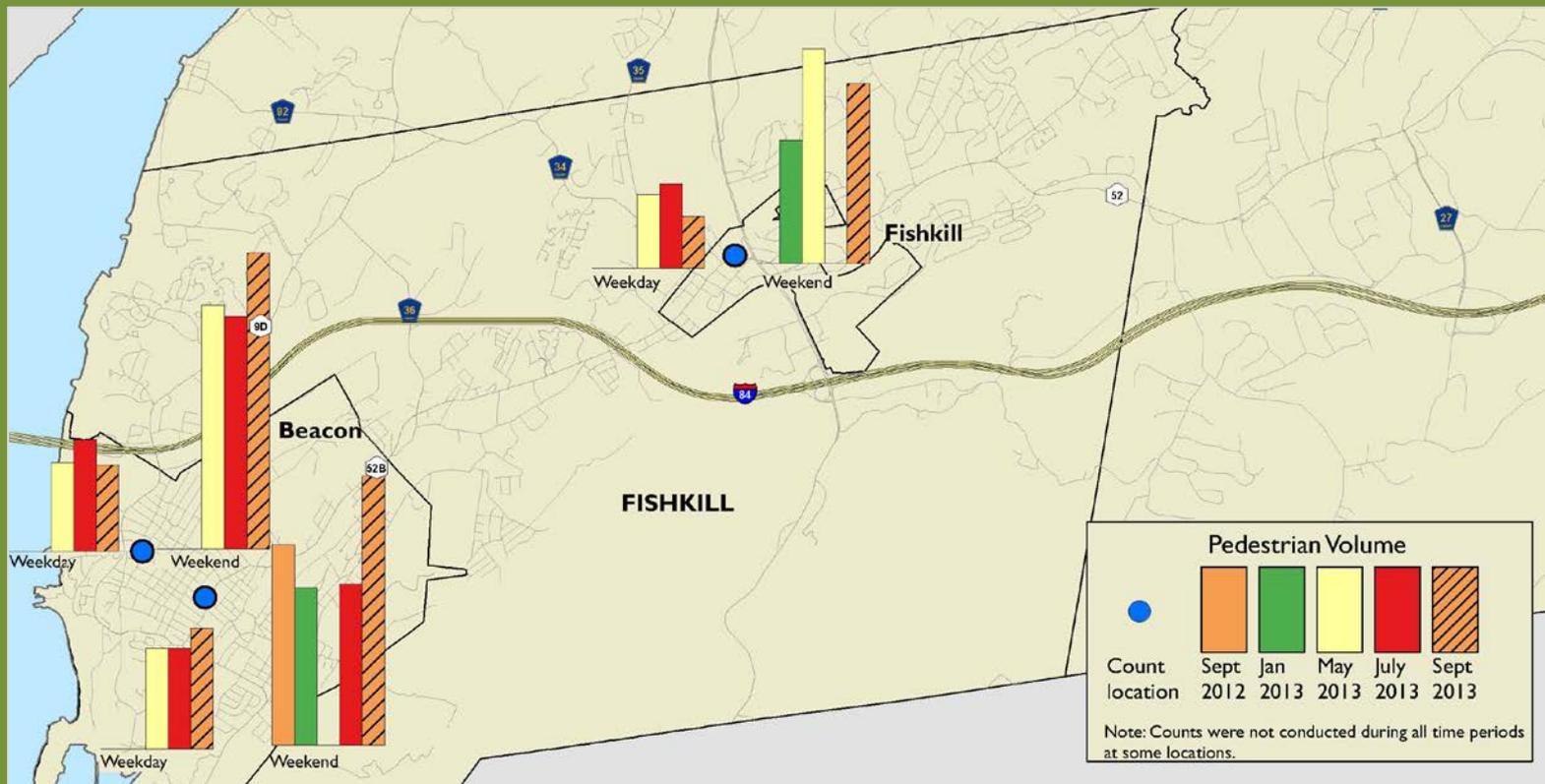# Pedestrian & Bicycle Counts in Dutchess County

Emily Dozier, Senior Planner
Dutchess County Transportation Council

2019 International Trails Symposium

Why Count?

- Understand use of the facility
- Track use over time
- Compare 'pre' and 'post' data
- Identify key spots for amenities or improvements
- Help justify investments, and encourage additional investment

1. Manual Counts

- National Bicycle and Pedestrian Documentation Project methodology (http://bikepeddocumentation.org/)
- 2 hour counts
- 1 weekday (T/W/Th, 4-6 pm) & 1 Saturday (12-2 pm)
- Mid-September ('typical' season)

1. Manual Counts

Pros
- Simple (intersections are more complex)
- Can observe use, issues, any conflicts
- Can add notes
- Flexible: can track gender, ages, helmet use, dogs, etc.
- Could combine with a short survey

Cons
- Wrangling volunteers
- Paper forms: have to check data; put into a database
- Limited data (2 hours, 2 days)-- less useful for extrapolation
- Weather/events can have a dramatic effect

2. Bicycle Tube Counts

- Tested on 8 streets and 1 rail trail location
- 3-7 days of continuous data collection

Dutchess Rail Trail - Bicycle Tube Counts
September 2016
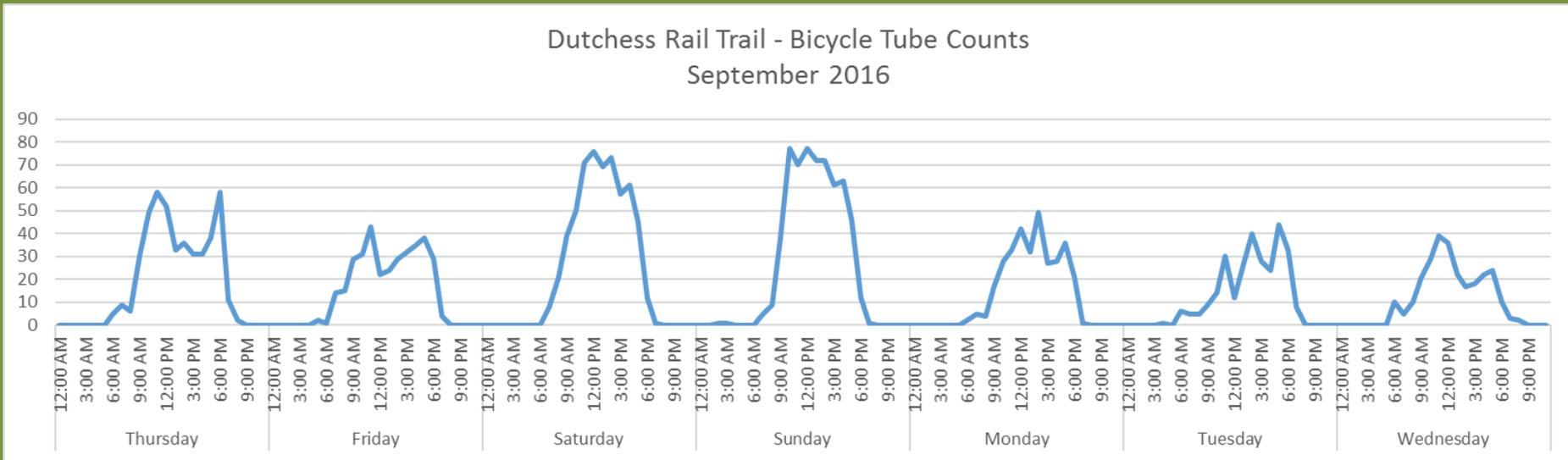
Pros
- No volunteers needed
- Can get many hours of data at a low cost

Cons
- Only counts bikes
- Issues with accuracy, esp. on urban streets
- Doesn't capture behaviors or sidewalk riding

3. Video Counts

- Used on rail trails and paths, as well as sidewalks & intersections
- 1 weekday and 1 Saturday, 7am-7pm
- Mostly August, September, October

Pros

- No volunteers needed
- Very accurate, even at crowded locations
- Counts peds and bikes separately
- Can watch video to see issues/conflicts
- Good for trail use extrapolations

Cons

- Expensive (video has to be processed)
- Collection/interpretation can be challenging at intersections
- Security
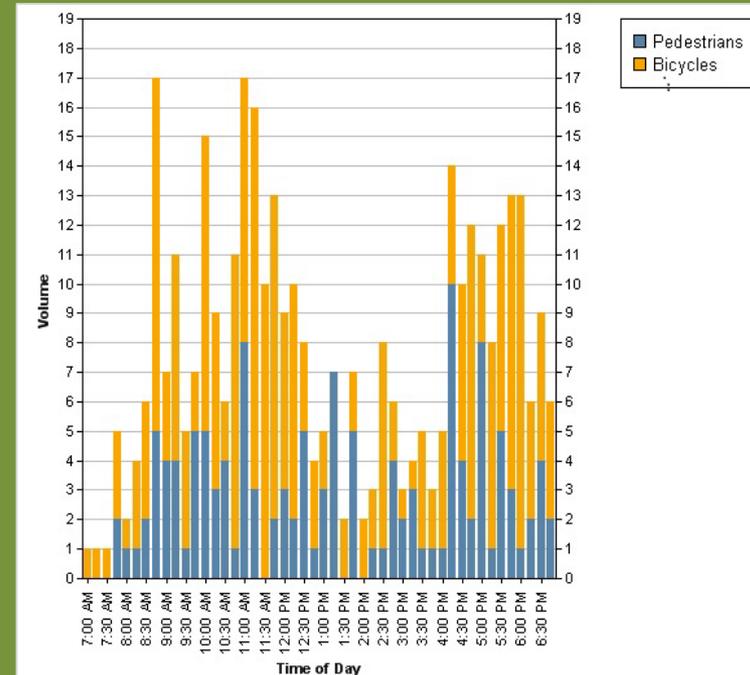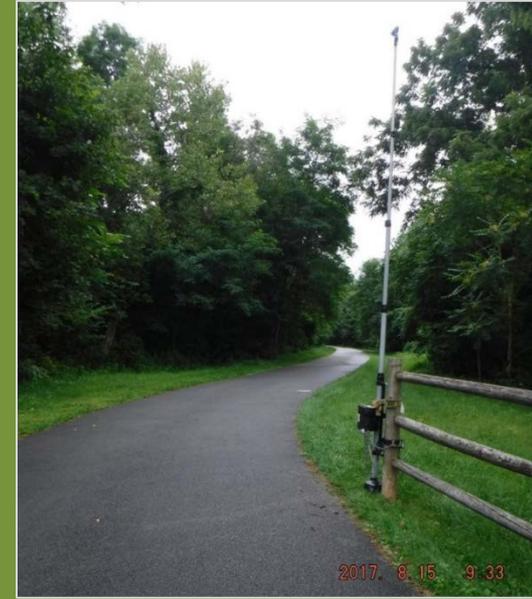
Data Comparison

Bikes: Tubes vs Video

- 2-hour counts:
    - Weekday: similar (tube +1)
    - Saturday: tubes lower (-10)

- 12-hour counts: within 1.5%
    - Weekday: tube +6
    - Saturday: tube +9

Dutchess Rail Trail by Morgan Lake
Video & bike tubes (9/22 & 24, 2016)

Video and Tube Count Comparison
Morgan Lake Trailhead, Thursday, September 22, 2016

Bike Tube Counter   Video Counter
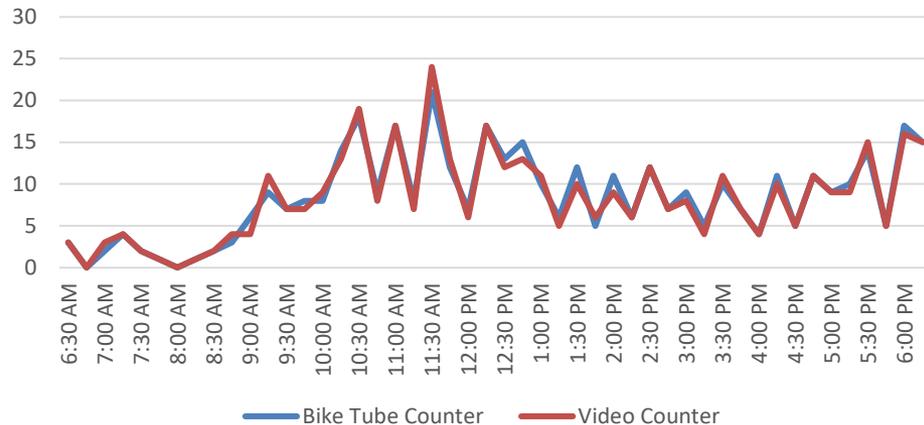
Video and Tube Count Comparison
Morgan Lake Trailhead, Saturday, September 24, 2016

Bike Tube Counter   Video Counter

Annual Estimates

- Dutchess Rail Trail by Morgan Lake
- Video (2016-17), bike tubes (2016), & manual counts (2013-18)

RTC method:

- Peds (manual + video):
43,000/year (118/day)

- Bikes (manual + video + tubes):
71,500/year (196/day)

- All users (manual + video):
114,500-164,500/year
(315-450/day)

Trail Traffic Calculator Results

Start Date: 9/13/2018
Start Time: 4:00 PM
Trail Users Observed: 6031
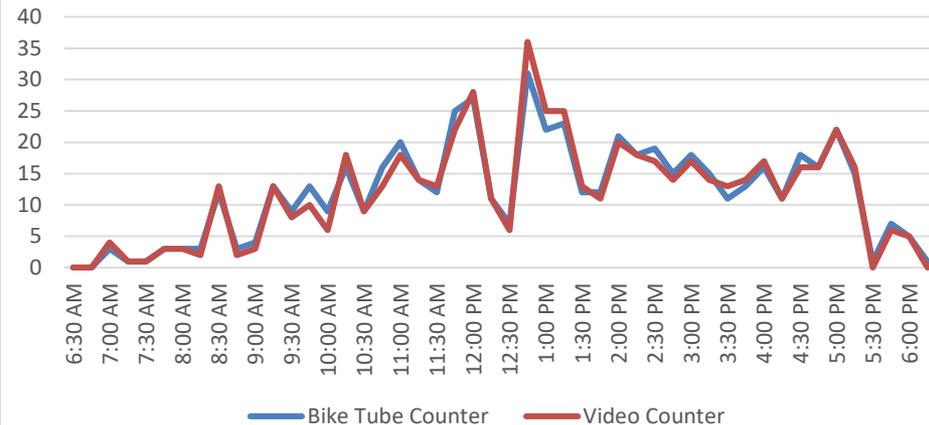**Hours Observed:** 253
Region: Cold
Traffic Mode: Bike

Print This Page   Back to Calculator

■ Annual Average Daily Traffic (AADT): **195.87 trips**
This AADT is calculated using the seasonal factoring method described in the Federal Highway Administration's Traffic Monitoring Guide, Section 4.5.6. Seasonal factors were generated from a large-sample, 365-continuous dataset of 50 trail traffic monitoring stations, and are unique to each climate zone (left, below).

■ Annual Traffic Estimate: **71,493 trips**

☐ Range of annual traffic estimate given length of observation period
Annual Traffic Min: **55,764 trips**
Annual Traffic Max: **87,221 trips**
Each estimate is based on short-duration local traffic counts specific to the facility being analyzed, provided by the user as an input. The range of uncertainty decreases as the length of the observation increases according to a step function (right, below).

Lessons Learned

Manual:
- Good for complex urban areas
- Good for understanding behavior
- Good for checking against other data
- But very limited picture/timeframe

Tubes:
- Good for trails & simple streets (no parking or turning movements)
- Decent for estimating annual use (but bike only)
- But only captures bikes; and can be inaccurate

Video:
- Most accurate, but most expensive
- Good for trails and other screenlines
- Good for estimating annual trail use
- At intersections, need to specify exactly what locations/movements you want to capture

Overall: Permanent counters would be great! More data = better estimates.

DCTC Future Goals

- 2019: more tube counts on trails; minimum 7 days; twice during season; some video counts for comparison
- Online searchable map
- Counting app or web form
- Permanent counters at key locations
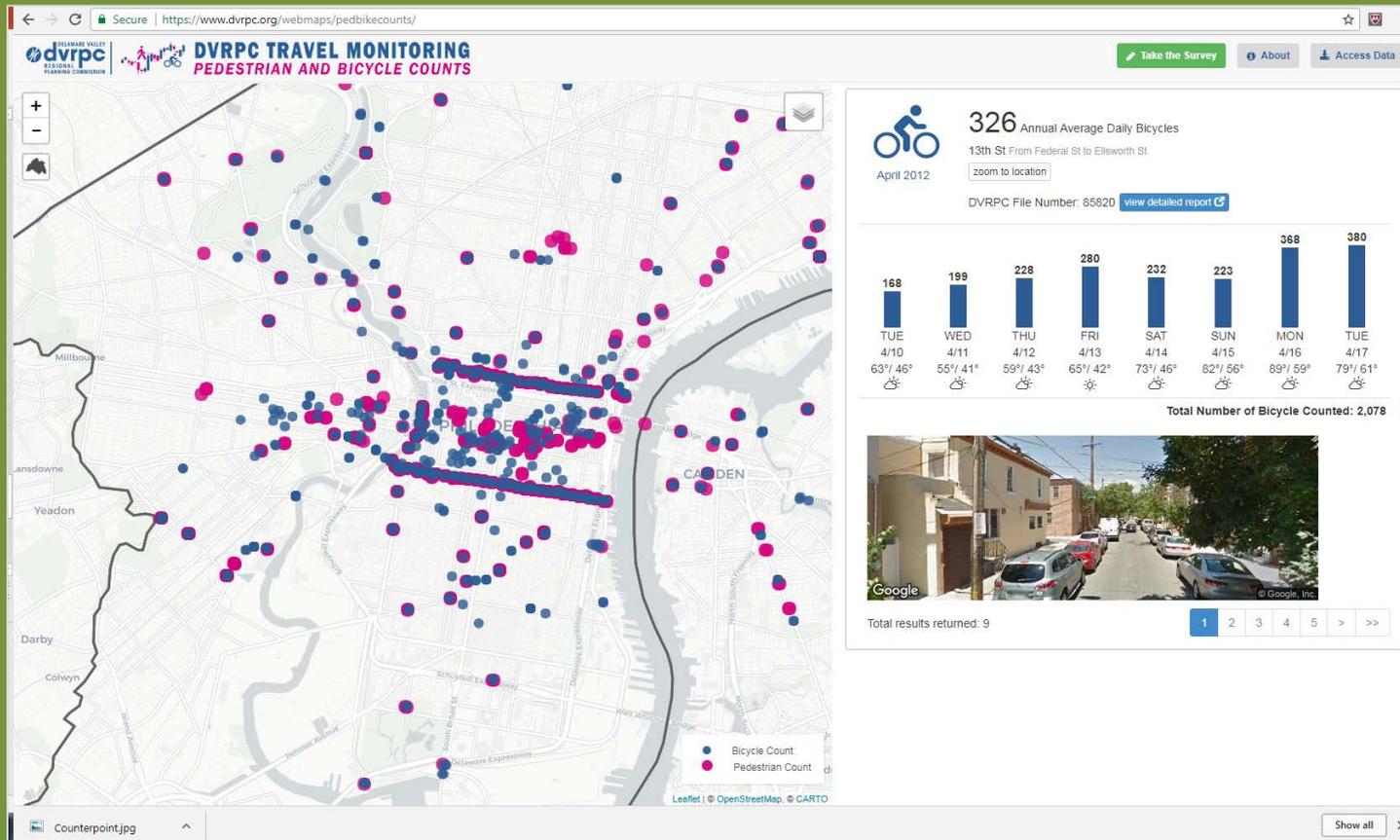
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Count Data: click on 'Transportation Data' then 'Pedestrian & Bicycle Counts'