

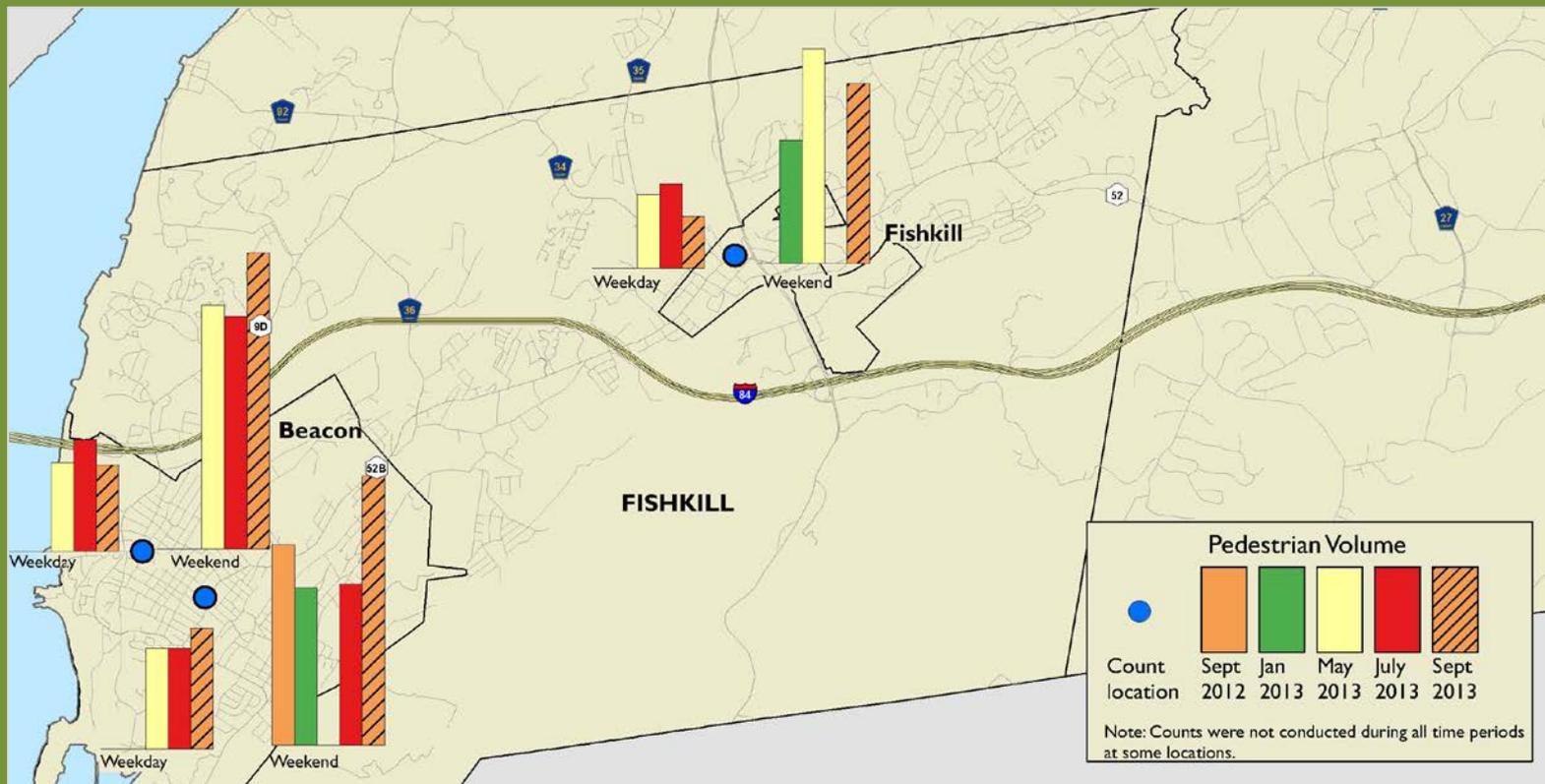
Pedestrian & Bicycle Counts in Dutchess County

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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)

SCREENLINE COUNT FORM – TRAIL/PATH

Name: Marie Cole Location (specific): Rail Trail at Dickell Rd, Mile Marker 4.0 from HJ
 Weather: 78° Sunny X, Y coordinates (Google Maps): 41.623209, 73.851769
 Date: 9/16/2017 Start Time: 12:00 End Time: 2:00

Fill in your name, count location, date, time period, and weather conditions (fair, rainy, cold, hot, etc).

Count all bicyclists and pedestrians crossing your screenline (on **both** sides of the trail).

- Count for two hours in 15 minute increments. Count **all** people who cross your screenline, even if they cross it more than once—count them each time.
- Count bicyclists who *ride on the trail* as **Bicyclists**.
- Count people *walking their bikes* as **Pedestrians**.
- Count the **number of people** on the bicycle, not the number of bicycles.
- Pedestrians include people in wheelchairs, using assistive devices, children in strollers, being carried, skateboarders, rollerbladers, and runners, as well as bicyclists walking their bicycle.

Time	Bicyclists (if wearing a helmet, tally under H; if not wearing one, tally under *)		Pedestrians (if using a wheelchair or walker, add a +)	
	Female	Male	Female	Male
00--15	H III (3) IIII (4)	II (2) IIII (5)	II (2) IIII (5)	IIII (4)
	* II (2) II (2)			
15--30	H IIII (5) IIII (4)	IIII (4) IIII (5)	IIII (5) III (3)	IIII (4)
	* IIII (4) IIII (4)			
30--45	H II (2) IIII (4)	IIII (4) IIII (5)	II (2) IIII (4)	IIII (4)
	* I (1) IIII (5)			
45-1:00	H III (3) IIII II (7)	I (1) III (3)	I (1) I (1)	I (1)
	* I (1) III (3)			
1:00-1:15	H III (3) IIII (5)	IIII (4) IIII (5)	IIII (5) IIII (4)	IIII (4)
	* I (1) IIII (4)			
1:15-1:30	H IIII (5) IIII (5) IIII (5) IIII (4)	IIII (4) IIII (5)	I (1) IIII (5) IIII (4)	IIII (4)
	* I (1) IIII (4)			
1:30-1:45	H II (2) IIII (5)	IIII (4) IIII (5)	IIII (5) IIII (4) IIII (5)	IIII (4)
	* IIII (4)			
1:45-2:00	H IIII (5) IIII (5) IIII (4)	IIII (4) IIII (5)	IIII (5) IIII (4)	IIII (4)
	* I (1) IIII (4)			
Total	H 34	43	21	26
	* 11	27		

Notes: 45 70

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

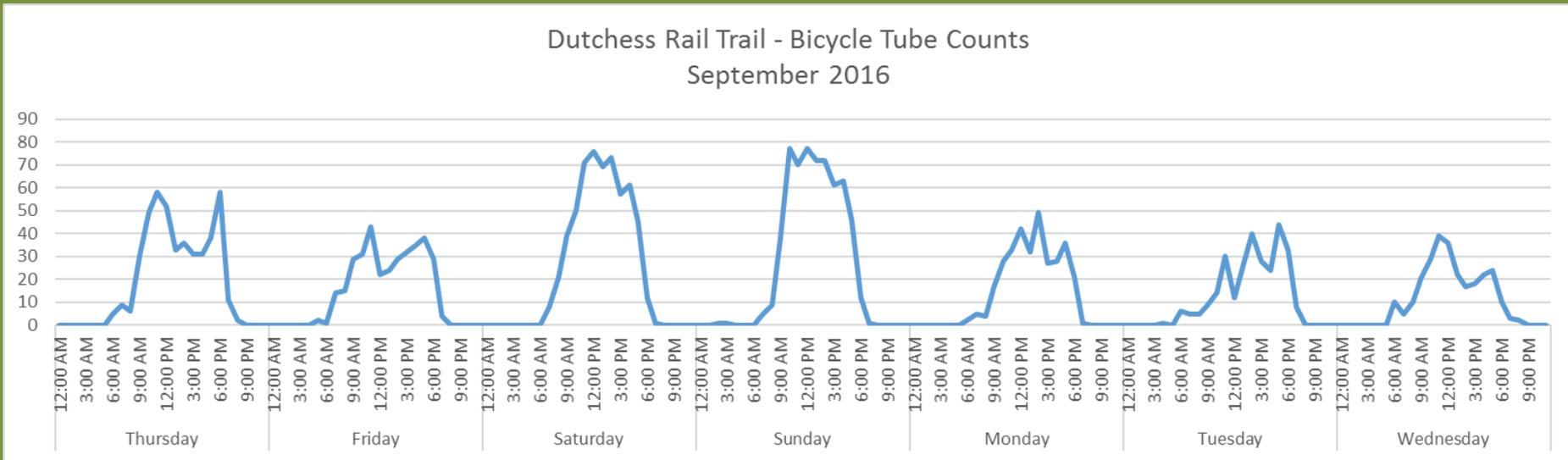
Cons

- 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



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

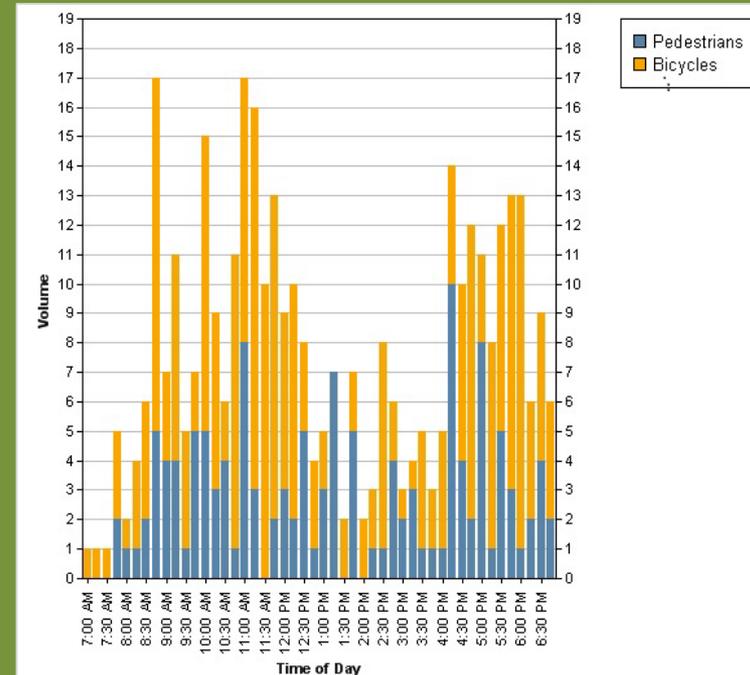
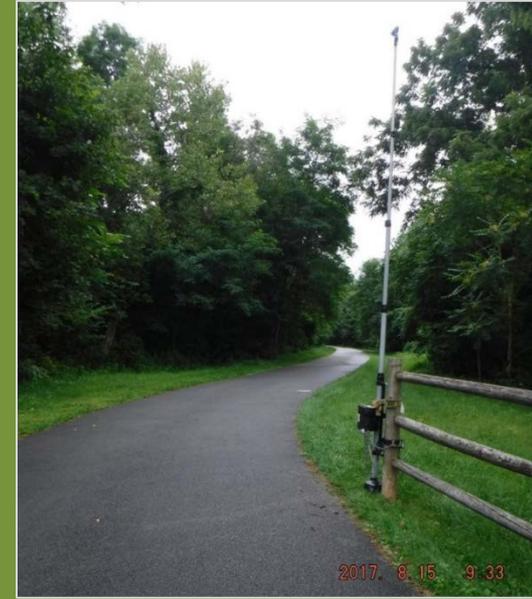
- Used on rail trails and paths, as well as sidewalks & intersections
- 1 weekday and 1 Saturday, 7am-7pm
- Mostly August, September, October

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

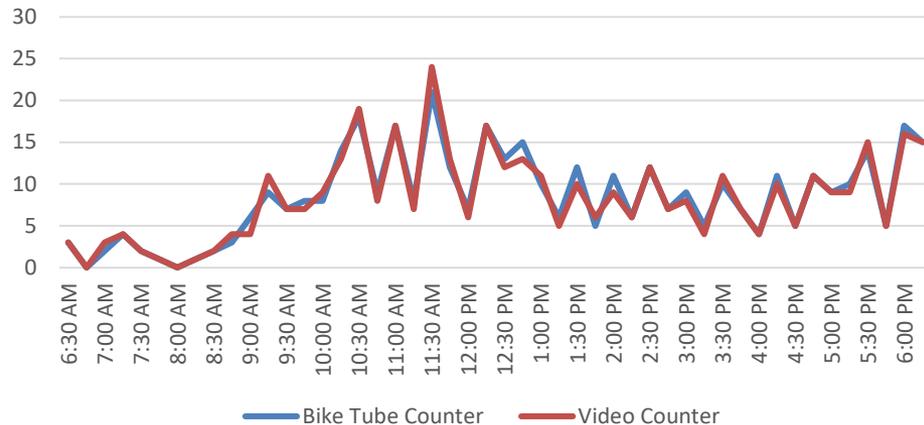
Bikes: Tubes vs Video

- 2-hour counts:
 - Weekday: similar (tube +1)
 - Saturday: tubes lower (-10)
- 12-hour counts: within 1.5%
 - Weekday: tube +6
 - Saturday: tube +9

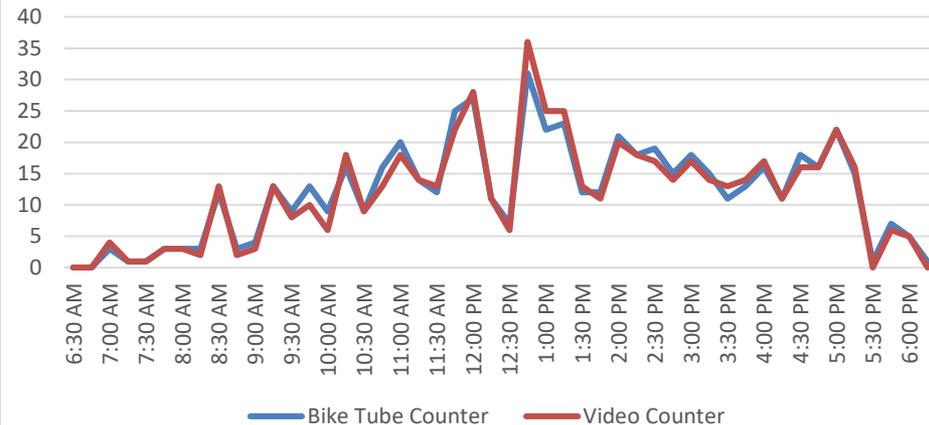
Dutchess Rail Trail by Morgan Lake Video & bike tubes (9/22 & 24, 2016)



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



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



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

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■ 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

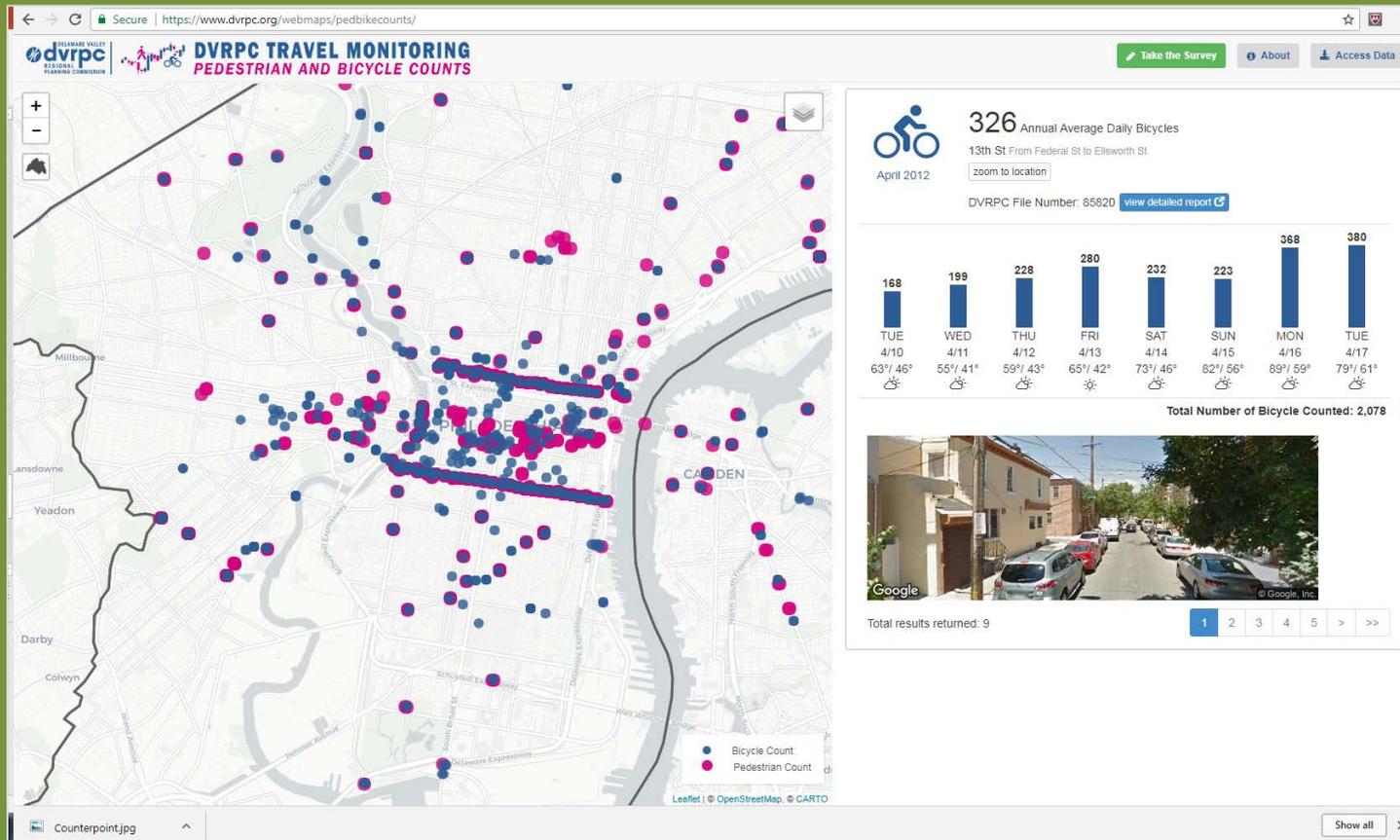
Video:

- 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'