



VDOT STATEWIDE ACTIVE TRANSPORTATION PROGRAM

VaULT Land Conservation and Greenways Conference

| Shane Sawyer

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Presentation Overview

Topics

- Overview of the VDOT Statewide Active Transportation Count Program
- Data review / QAQC
- Data use and application
- Data examples
- Data platform demonstration
- Question and answer

VDOT Statewide Bicycle and Pedestrian Program

Statewide Active Transportation Count Program

- Managed by VDOT Transportation and Mobility Planning Division (TMPD)
- utilizes automated counting equipment and partnerships to facilitate collection of nonmotorized transportation use data on facilities across the Commonwealth
- serves as an information hub for nonmotorized count data conducted by VDOT, local, regional, and state agencies, non-profits, and other entities

Statewide Active Transportation Count Program

The VDOT Statewide Active Transportation Count Program includes the following components and activities:

- Permanent count sites
- Year-Over-Year (YOY) counts (longitudinal)
- Short duration counts / technical assistance counts
- Counting equipment loan program
- Adopt-a-Counter program
- [Virginia Statewide Active Transportation Count Network](#)

Counting Equipment and Services

Eco-Counter

- Eco-Visio (data management platform)
- Eco-Link (smartphone app)
- Infrared sensors (sidewalks, shared use paths, trails)
- Pneumatic tubes (on-street facilities, shared use path)
- Zelt loops (magnetic strips embedded in pavement)

TRAFx

- Infrared sensors
DataNet (data management platform)

Other?

- Data from other counting systems can be formatted for import into the count Network via the Eco-Visio platform

Counting Equipment - Installation Examples



Counting Equipment



Statewide Active Transportation Count Network

Statewide Active Transportation Count ‘Network’ partners:

- VDOT (Eco-Counter)
- Arlington County (Eco-Counter)
- Roanoke Valley-Alleghany Regional Commission (TRAFx)
- Friends of the Lower Appomattox River (FOLAR) (TRAFx)
- Virginia Capital Trail Foundation (TRAFx)
- City of Harrisonburg (Eco-Counter)
- Fairfax County (Eco-Counter)
- Potomac River National Wildlife Refuge Complex

Statewide Active Transportation Count Network



Virginia Statewide Active Transportation Count Network | Transportation and Mobility Planning



Description

This online interactive web map displays raw bicycle and pedestrian count data from across Virginia's network of active transportation count sites. Sites include a mix of VDOT maintained permanent counters, VDOT year-over-year counters, and VDOT short duration counters as well as locally maintained counters that are networked to the statewide map

More information

Search a location

Period
Year

< 2026 >

All

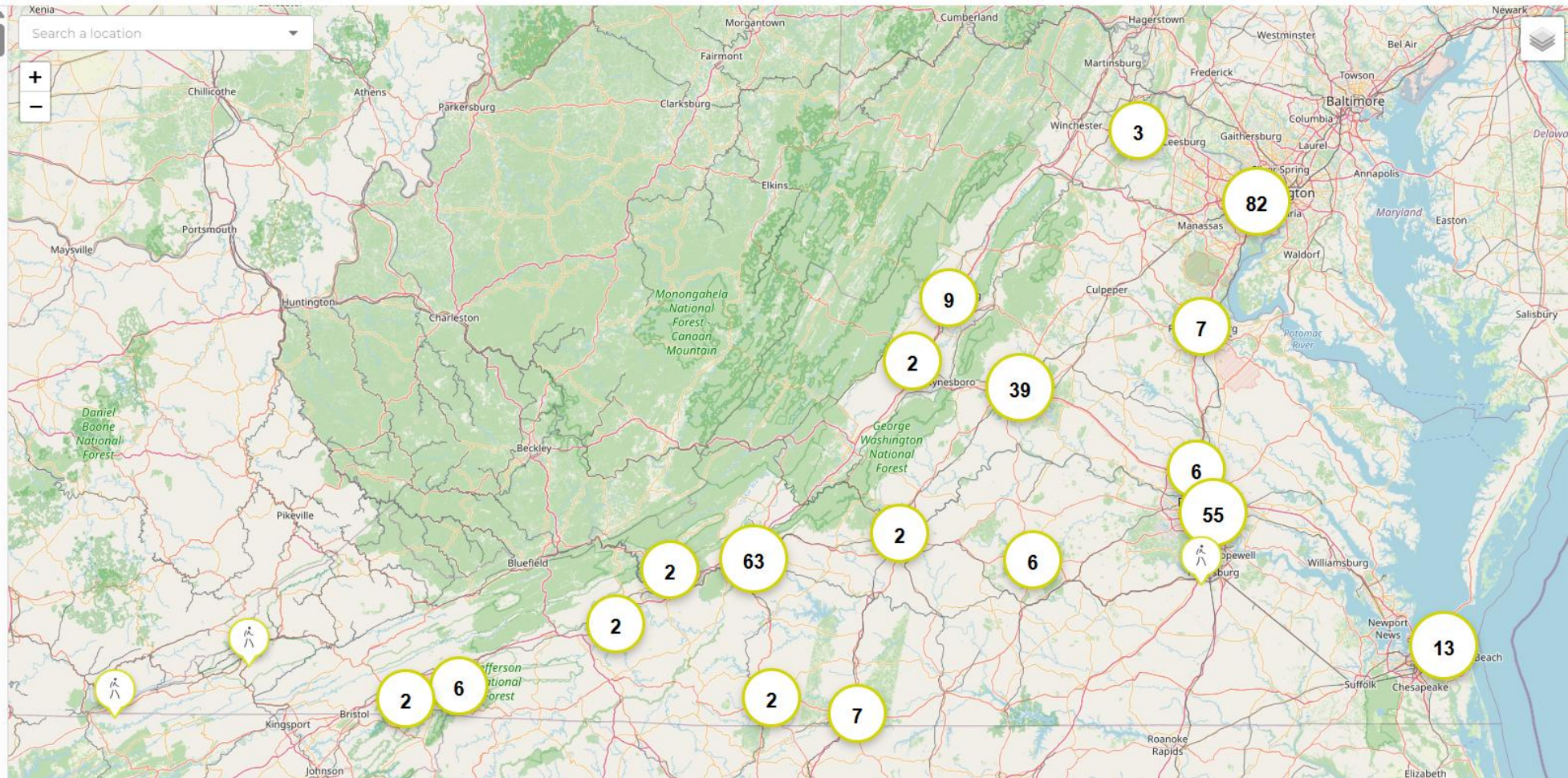
Traffic key figures

Total 2026	1,090,063 counts over 311 sites
Daily average 2026	295 counts per site

Ranking - 311 counting sites

Search by site name or address

Arlington County - Key Bridge East
114,462



Virginia Department of Transportation

Adopt-a-Counter Program

Adopt-a-Counter Program participants:

- Virginia Creeper Trail Conservancy
- Martinsville Henry County Economic Development Corporation
- Roanoke Valley - Alleghany Regional Commission
- City of Harrisonburg
- Virginia Capital Trail Foundation

Count Equipment Loan Program

- VDOT TMPD has Eco-Counter equipment available for short-term loan to assist localities, PDCs/MPOs, and other entities in collecting bicycle/pedestrian use data to support active planning activities
- Equipment can be requested via online form on the VDOT Bicycle and Pedestrian Program webpage

Count Data Use and Application

- Seasonal (monthly) adjustment factors
- Roadway Reconfiguration support (before / after counts)
- Studies / Technical assistance
- Research
- Peer agency collaboration
- Performance measures
- Active transportation facility use forecasting / prediction?
- Big data comparison and validation?

Data Review / Data Quality

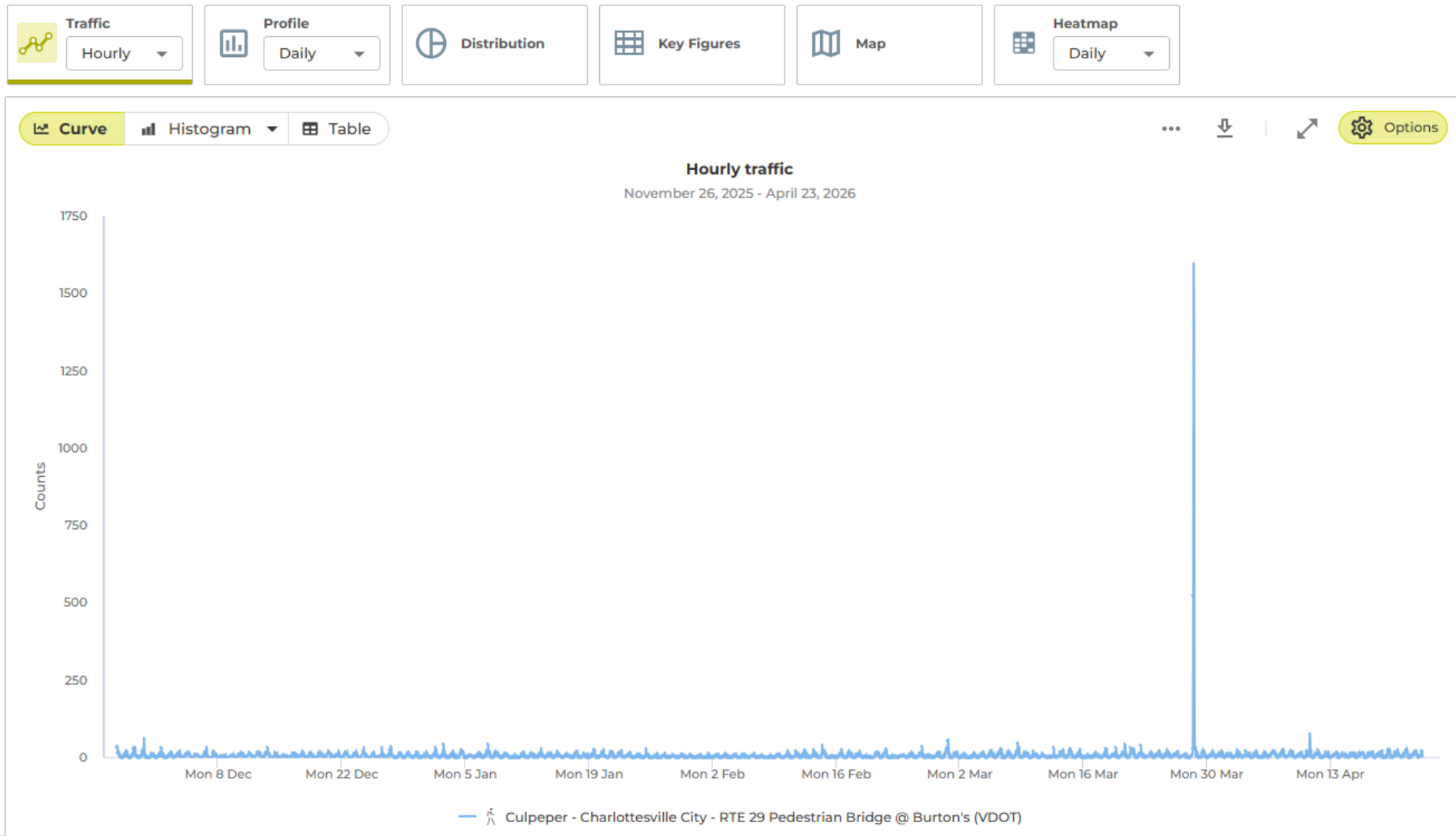
- Field testing via Eco-Link smartphone application
- Manual count comparisons
- Data review – count totals, time of day, day of week, directionality, comparison to previous counts, weather module, notifications, anomalies and outliers
- Known / observed circumstances, situations, issues
- Comparison to other (local, regional, state, national datasets)
- Raw data vs. flagged, cleaned, or validated data
- Local knowledge and understanding of facility

Count Data Analysis - Example

Month	Total	In	Out
January	930	536	393
February	1376	815	561
March	3212	2252	960
April	8963	7020	1943
May	12693	9895	2798
June	14193	12088	2104
July	18719	16359	2360
August	11537	9779	1758
September	16483	13983	2500
October	26800	24503	2297
November	6237	5256	981
December	1287	839	448

- Potential data quality issue(s) or normal seasonal trend?
- Possible explanation(s) for potential issue(s) or seasonal trend(s)?
- Counts are for what facility?

Count Data Analysis - Example



Count Data Analysis - Example

Sat March 28, 2026 7:00 AM	4
Sat March 28, 2026 8:00 AM	5
Sat March 28, 2026 9:00 AM	7
Sat March 28, 2026 10:00 AM	12
Sat March 28, 2026 11:00 AM	28
Sat March 28, 2026 12:00 PM	525
Sat March 28, 2026 1:00 PM	1,594
Sat March 28, 2026 2:00 PM	1,406
Sat March 28, 2026 3:00 PM	266
Sat March 28, 2026 4:00 PM	32
Sat March 28, 2026 5:00 PM	24
Sat March 28, 2026 6:00 PM	35
Sat March 28, 2026 7:00 PM	18

Possible data quality issue(s) and/or explanations?

How best to correct or otherwise address data quality issue(s)?

Data Application Example - Seasonal Adjustment Factors

Seasonal (monthly) adjustment factors

- Method to estimate total 'annual' use of a given active transportation facility based on a short duration count (preferably 'one calendar month')
- Each monthly 'factor' represent the respective month's average share of total annual use (i.e., percentage of the yearly count total based on count data from permanent 'baseline' counters)
- Factors are available - statewide, VDOT District, and facility type

Data Application Example - Seasonal Adjustment Factors

Virginia Statewide Season Adjustment Factors

Shared Use Path		Bicycle Lane		Other Trail		All Facilities		Bikeshare System Trips	
Month	Factor %	Month	Factor %	Month	Factor %	Month	Factor %	Month	Month % of Yearly Total
January	4.5	January	4.7	January	4.4	January	4.3	January	4.9
February	5.0	February	5.7	February	5.2	February	4.9	February	4.9
March	8.1	March	8	March	8.5	March	8.1	March	6.8
April	9.8	April	8.1	April	11.1	April	9.6	April	8.1
May	10.9	May	9.4	May	11.3	May	10.6	May	10.2
June	10.3	June	9.8	June	10.4	June	10.3	June	11.6
July	9.8	July	9.6	July	9.5	July	9.9	July	12.2
August	10	August	10.9	August	8.7	August	10	August	10.1
September	10.2	September	10.8	September	9.1	September	10.4	September	10.2
October	9.6	October	10.4	October	11	October	10.3	October	9.5
November	6.7	November	7.6	November	6.5	November	6.7	November	6.9
December	5.1	December	5.2	December	4.3	December	4.8	December	4.7
Total	100	Total	100	Total	100	Total	100	Total	100

Data Application Example – Seasonal Adjustment Factors

Trail Count estimation example:

- Facility type = shared use path
- Count month = April
- Month count total = 9,430
- Seasonal adjustment factor = 8.9% (April, SUP, statewide)
- Projected annual counts = 105,955 ($9,430 / 8.9\%$)

Note: 'counts' and 'users' or 'visitors' should not be conflated or used interchangeably and facility particulars (loop, out and back, directionality, etc.) should be considered when estimating facility use or visitor based on automated counts

Starting / Participating in a Count Program?

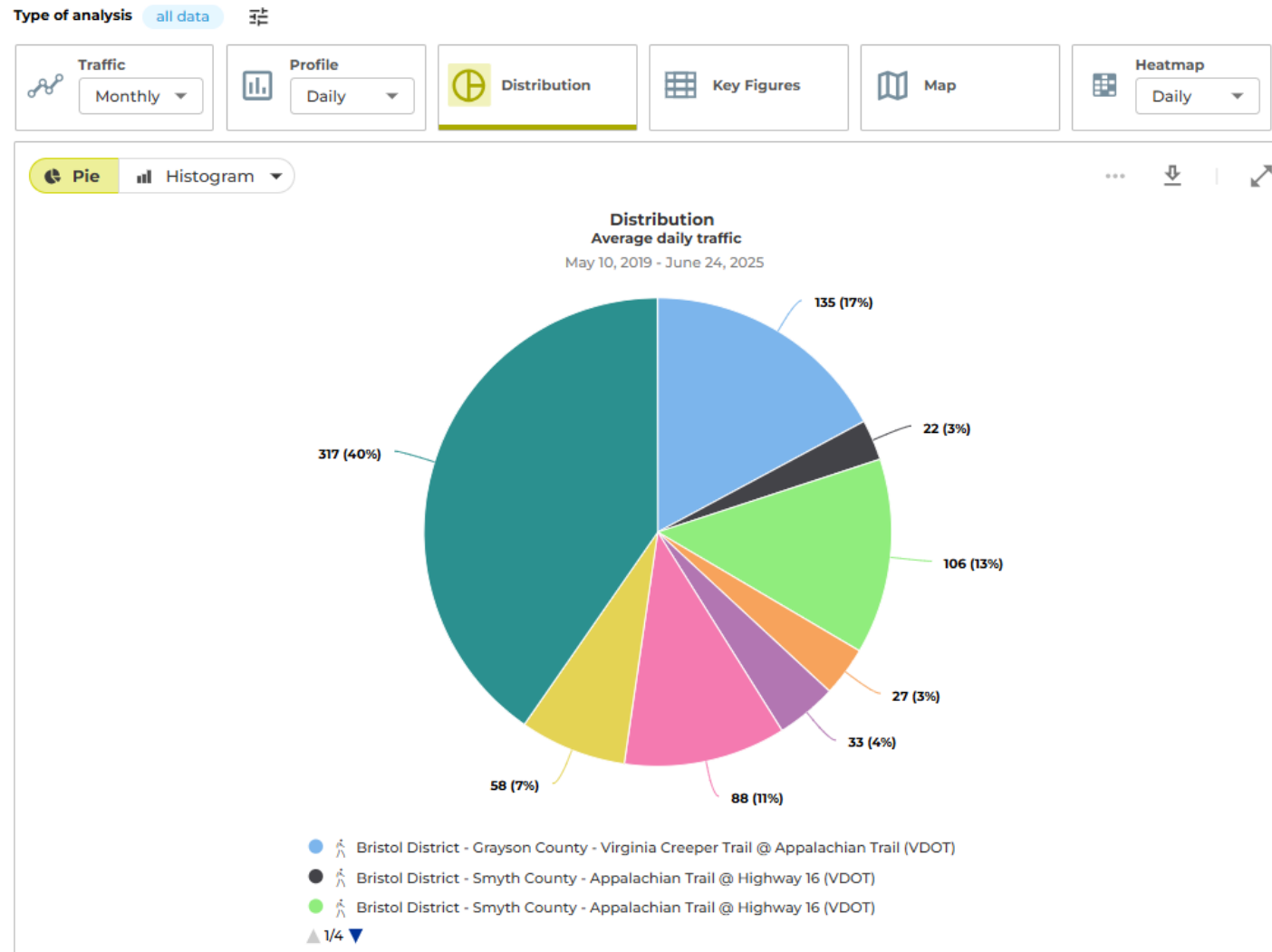
Considerations:

- Purpose / need
- Costs (equipment and platform)
- Data collection
- Equipment upkeep / maintenance
- Data quality and data use

Getting started?

- VDOT Count Equipment Loan Program
- PDC / MPOs
- Non-profits, advocacy groups

Data Examples



Question and Contact Information

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