



# Des Moines Area Traffic Counting Practices

Survey Summary

December 2020

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## Background

Traffic data and information provide an understanding of past and current transportation system performance and insight into future transportation system performance. Aside from transportation, traffic data and information can support other business needs as performance-based measures. To better understand the state of traffic counting practices around the Des Moines metropolitan area, the Des Moines Area Metropolitan Planning Organization (MPO) created the Traffic Counting Practices Survey. The Traffic Counting Practices Survey was sent to individual staff at Des Moines Area MPO member governments in November 2020.

### *Survey Respondents*

Individual staff from the following Des Moines Area MPO member governments responded to the Traffic Counting Practices Survey, totaling 17 survey respondents:

- City of Altoona
- City of Ankeny
- City of Bondurant
- City of Des Moines
- City of Grimes
- City of Norwalk
- City of Urbandale
- City of Waukee
- City of West Des Moines
- Dallas County
- Madison County
- Polk County
- Warren County
- Iowa Department of Transportation
- 3 Anonymous Respondents

## Selected Survey Findings and Recommendations

### *Selected Survey Findings*

#### Traffic Counting Overview

- About 52% (n = 9) of surveyed Des Moines area governments do not collect in-house traffic counts.
- The majority (65%) of the surveyed Des Moines area governments (n = 11) contract out their traffic counts (to consultants).
- Most traffic counts by the surveyed Des Moines area governments are for internal use (n = 13) or for consultant use (n = 13). About 53% (n = 8) of the traffic counts are used by the Iowa Department of Transportation (DOT).

#### Traffic Counting Duration

- The majority (82%) of the surveyed Des Moines area governments do not collect continuous counts (24-hours for 365 days).
- About 47% (n = 8) of surveyed Des Moines area governments collect traffic counts on 24, 48, or 72-hour durations. The other 53% (n = 9) of surveyed Des Moines area governments collect traffic counts on some other duration.

#### Traffic Counting Equipment

- Most surveyed Des Moines area governments (n = 9) deploy video detection systems for their traffic counts. The video detection systems are used in conjunction with inductive loop detectors and/or with microwave radar sensors. Other deployed traffic counting equipment are pneumatic tube counters (n = 2).
- For traffic counting equipment, over half of the surveyed Des Moines area governments placed much consideration on initial cost (n = 8), communications capabilities to retrieve and process data (n = 7), and agency staff knowledge of the equipment (n = 6) and their support of the equipment (n = 6).

#### Traffic Data and Review

- Almost all surveyed Des Moines area governments collect vehicle volumes (n = 13) from traffic counts. Other commonly collected attributes include vehicle speed (n = 10) and vehicle classification (n = 9).
- The majority (n = 13) of surveyed Des Moines area governments collect ADT (Average Daily Traffic) from their traffic counts. Some surveyed Des Moines area governments collect AADT (Annual Average Daily Traffic) (n = 5). Only a few collect AADTT (Annual Average Daily Truck Traffic) (n = 3).
- Some of the surveyed Des Moines area governments (n = 5) post-process their traffic counts by comparing against manual counts. Some of the surveyed Des Moines area governments (n = 4) evaluate collected traffic count data with monthly and yearly data. There are also some surveyed Des Moines area governments (n = 4) that do not perform any post-processing of traffic count data.

### Regional Traffic Counting

- Over half of the surveyed Des Moines area governments expressed much interest in implementing automated software to assist data processing and to eliminate inefficiencies (n = 11), eliminating duplication of data collection efforts (n = 9), consolidating overlapping data sources (n = 9), and sharing data with other agencies (n = 8).
- The top attributes that almost all the surveyed Des Moines area governments would like collected in traffic counts are vehicle volumes (n = 15), vehicle classification (n = 14), and vehicle speeds (n = 14).
- The top data products that over half of the surveyed Des Moines area governments would like collected in traffic counts are ADT – Average Daily Traffic (n = 13), AADT - Annual Average Daily Traffic (n = 10), and AADTT - Annual Average Daily Truck Traffic (n = 8).

### ***Recommendations***

Based on these survey findings, the Des Moines Area MPO can convene a regional traffic counting committee from interested individual staff of the surveyed Des Moines Area MPO member governments. The regional traffic counting committee, with assistance from the MPO's Engineering subcommittee, may then:

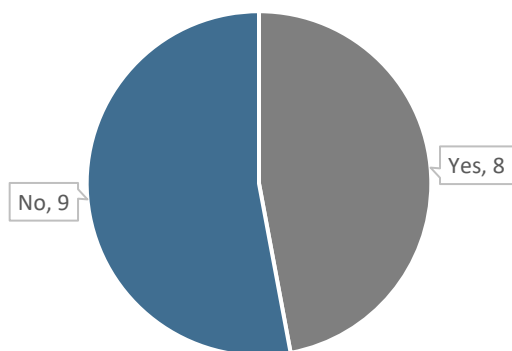
- Identify data collection duplication and overlapping data sources
- Explore automated software technologies to assist in regional traffic data processing and to eliminate inefficiencies
- Enhance data sharing among regional agencies
- Evaluate capacity for collecting data with regional agencies and for coordinating or standardizing data collection guidelines
- Inform the Des Moines Area MPO on how to support and advance regional traffic counting

## Survey Summary

### Traffic Counting Overview

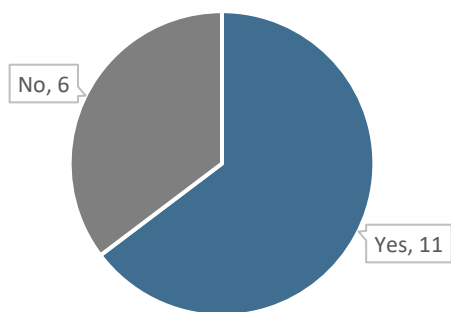
About half (53%) of the surveyed Des Moines area governments do not collect in-house traffic counts.

Does your agency collect in-house traffic counts?  
(17 Answered; 0 Skipped)

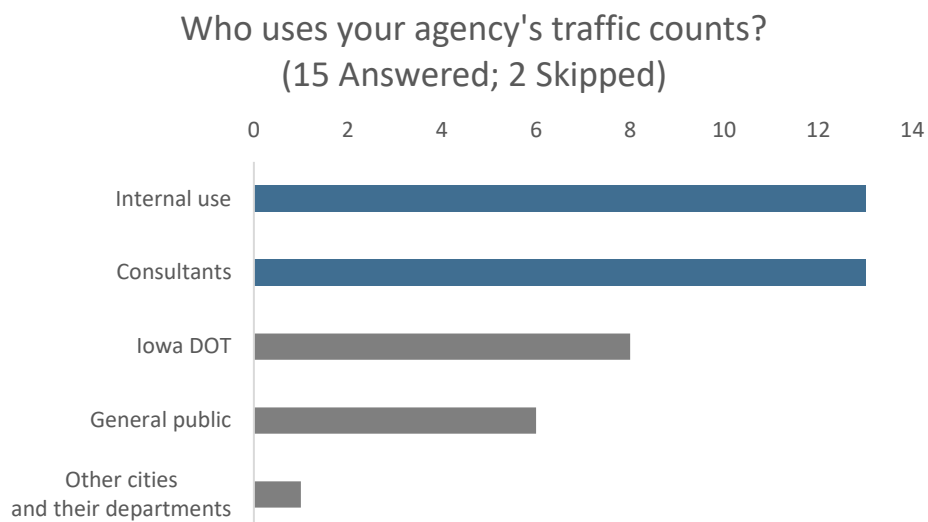


The majority (65%) of the surveyed Des Moines area governments contract out their traffic counts (to consultants).

Does your agency contract out traffic counts (i.e. traffic counts done by consultants)?  
(17 Answered; 0 Skipped)



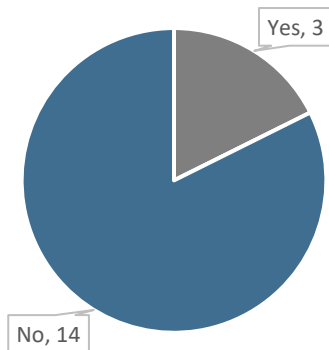
Most traffic counts by the surveyed Des Moines area governments are for internal use (n = 13) or for consultant use (n = 13). About 53% (n = 8) of the traffic counts are used by the Iowa Department of Transportation (DOT). About 40% (n = 6) of the traffic counts are used by the public. Traffic counts from surveyed Des Moines area governments used by other cities and their departments are very limited (n = 1).



### Traffic Counting Duration

The majority (82%) of the surveyed Des Moines area governments do not collect continuous counts (24-hours for 365 days).

Does your agency collect continuous counts (24-hours for 365 days)?  
(17 Answered; 0 Skipped)

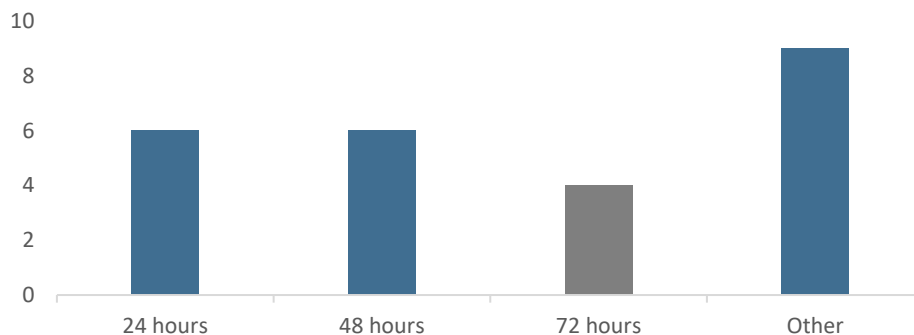


About 47% (n = 8) of surveyed Des Moines area governments collect traffic counts on 24, 48, or 72-hour durations. Of those durations, the most common durations are 24 hours and 48 hours.

The other 53% (n = 9) of surveyed Des Moines area governments collect traffic counts on some other duration. These durations include:

- 12 hours
- 4-5 days
- 7 days/1 week
- Peak hours/7-hour peak
- Project-dependent/capital-projects dependent
- Varying duration depending on interest and reason

Does your agency collect short duration counts?  
(8 Answered; 9 Skipped)



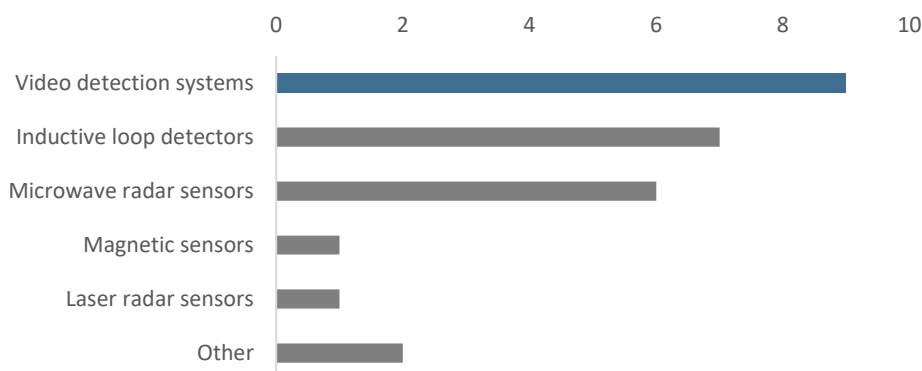


### Traffic Counting Equipment

Most surveyed Des Moines area governments (n = 9) deploy video detection systems for their traffic counts. The video detection systems are used in conjunction with inductive loop detectors and/or with microwave radar sensors.

Other deployed traffic counting equipment are pneumatic tube counters (n = 2).

Does your agency deploy any of the following detection equipment in its traffic counts?  
(10 Answered; 7 Skipped)

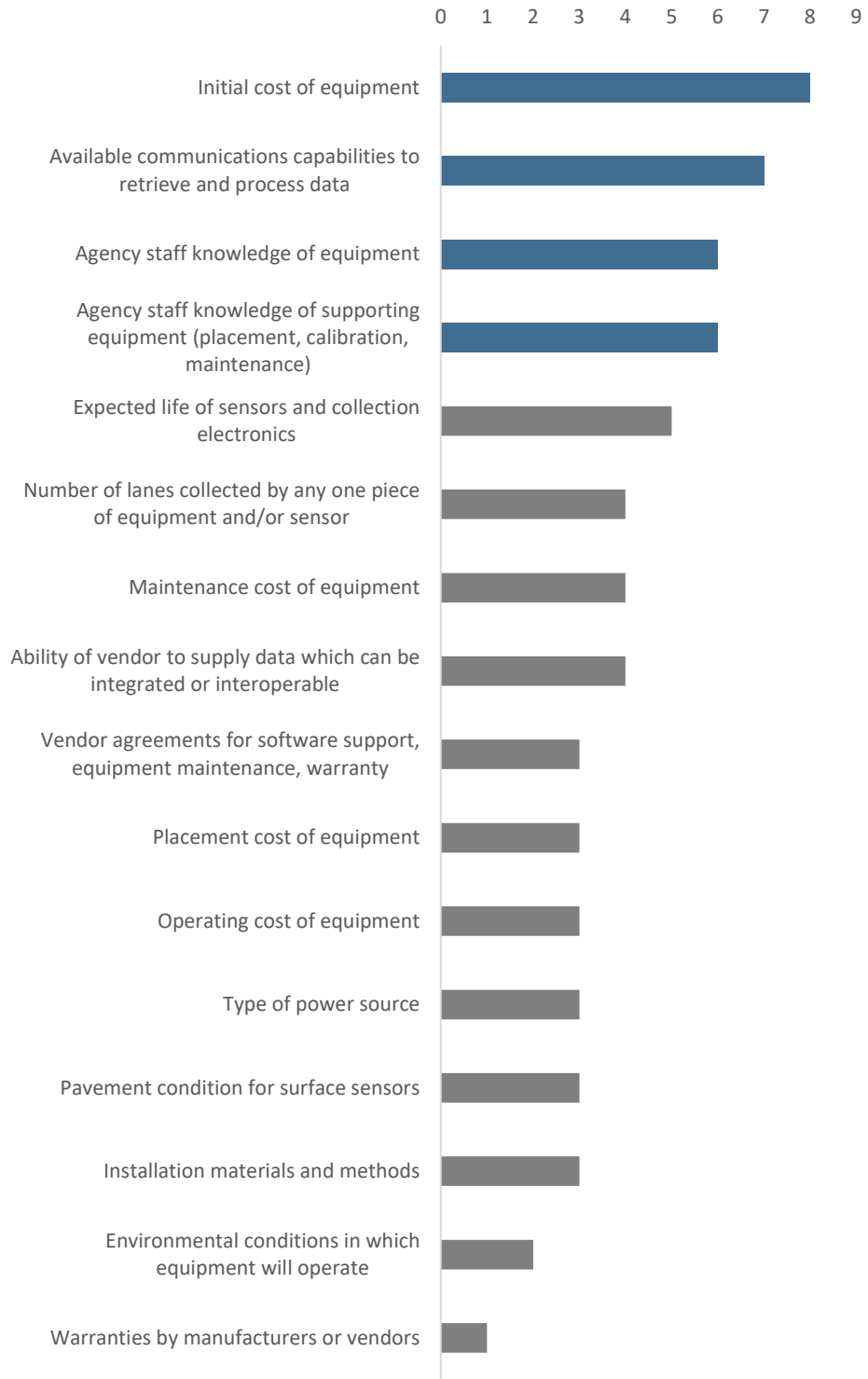


For traffic counting equipment, over half of the surveyed Des Moines area governments mostly considered initial cost (n = 8), communications capabilities to retrieve and process data (n = 7), and agency staff knowledge of the equipment (n = 6) and their support of the equipment (n = 6).

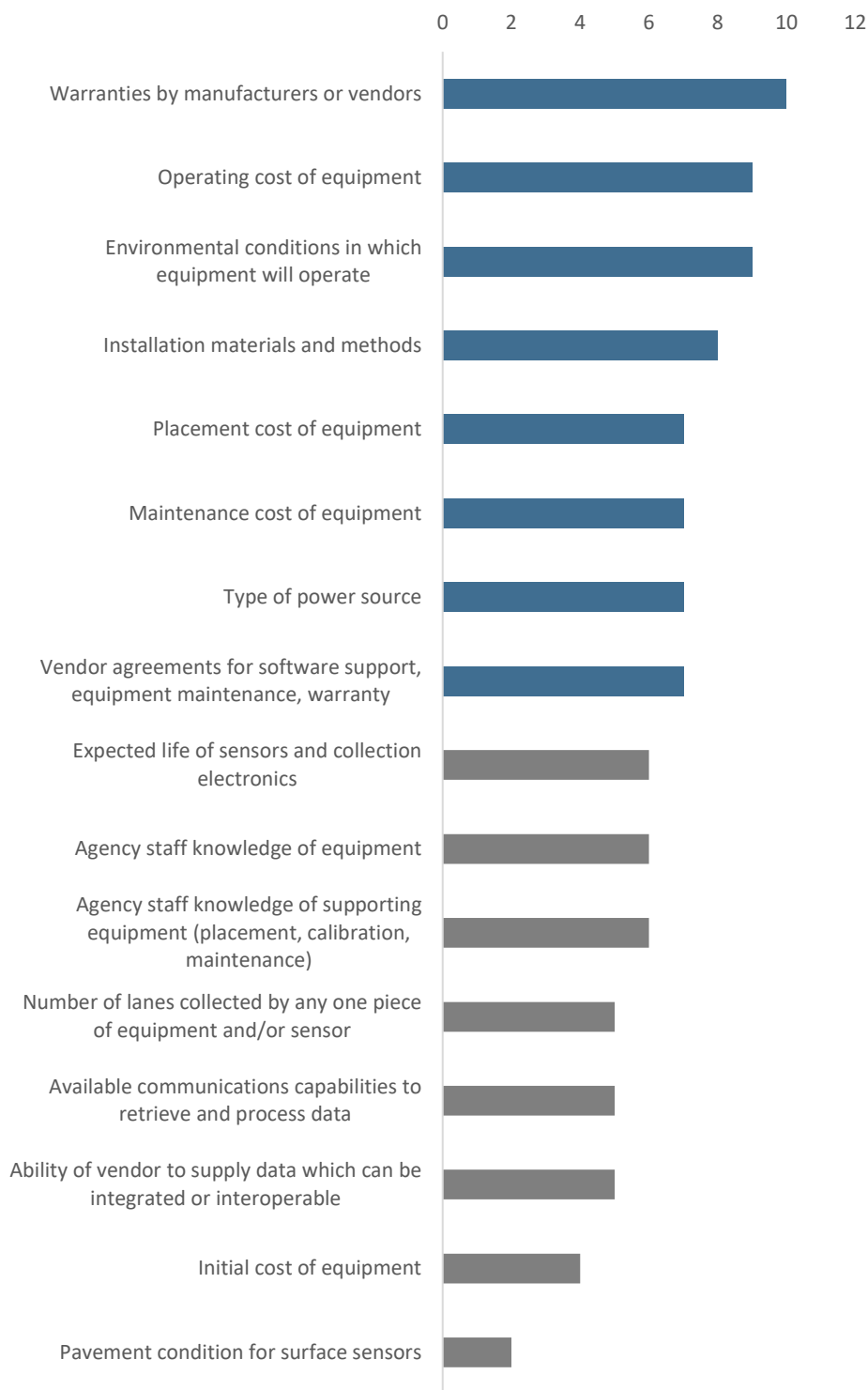
Over half of the surveyed Des Moines area governments placed some consideration for traffic counting equipment on warranties (n = 10), operating cost (n = 9), operating environmental conditions (n = 9), installation (n = 8), placement costs (n = 7), maintenance costs (n = 7), power source (n = 7), and vendor agreements (n = 7).

The top factors for traffic counting equipment that received no consideration from surveyed Des Moines area governments include pavement conditions for surface sensors (n = 8), lane coverage (n = 4), data integration and interoperability (n = 4), placement costs (n = 3), and power source (n = 3).

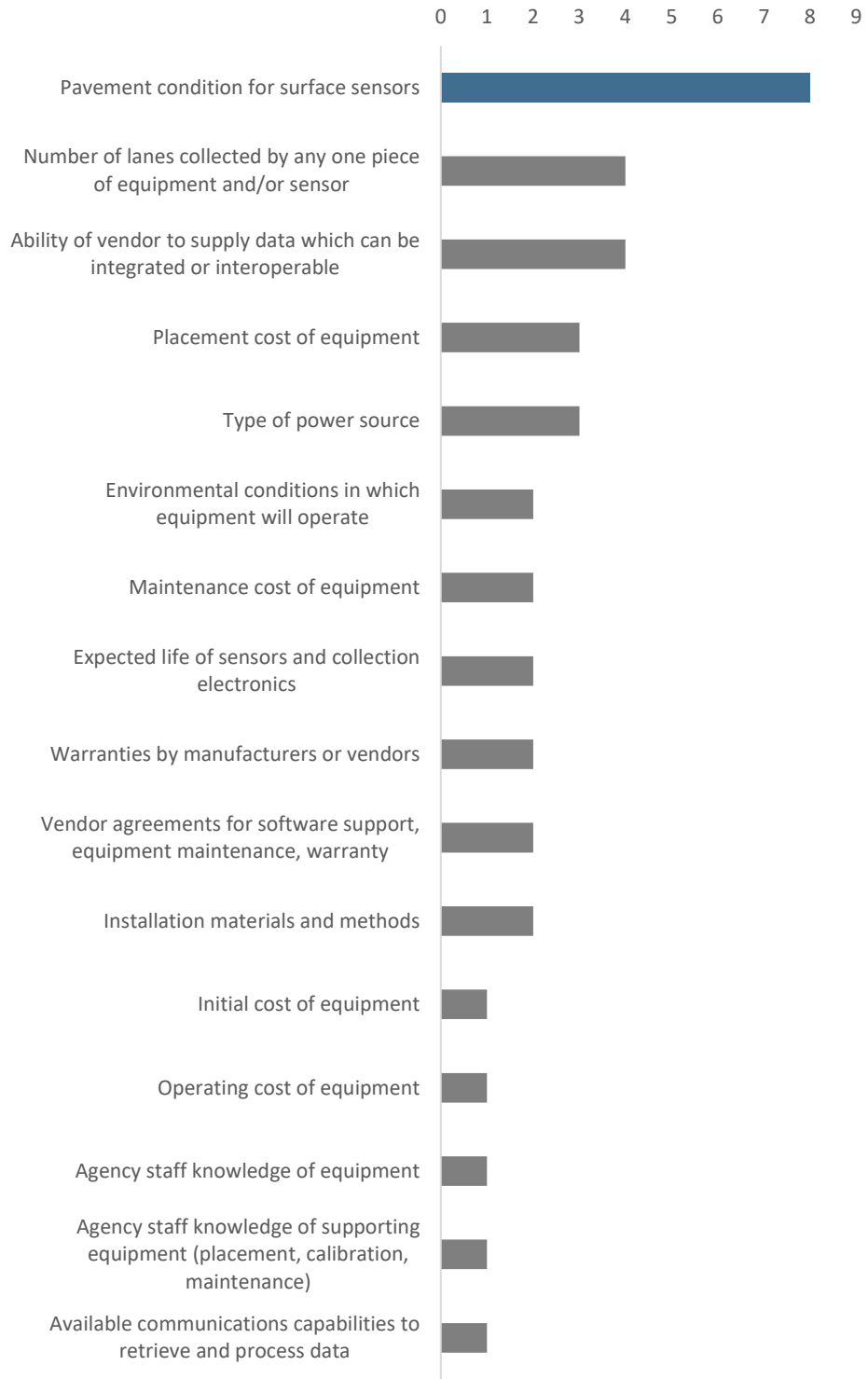
Which of the following topics do your agency consider in traffic counting equipment?  
(Much Consideration)  
(13 Answered; 4 Skipped)



Which of the following topics do your agency consider in traffic counting equipment?  
 (Some Consideration)  
 (13 Answered; 4 Skipped)



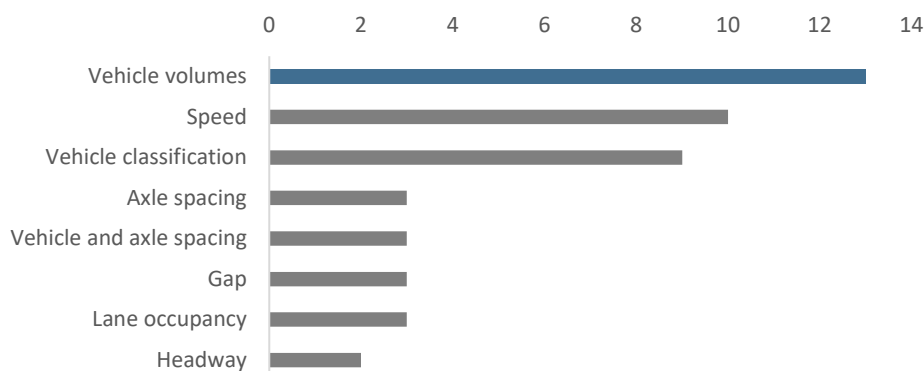
Which of the following topics do your agency consider in traffic counting equipment?  
(No Consideration)  
(13 Answered; 4 Skipped)



### Traffic Data and Review

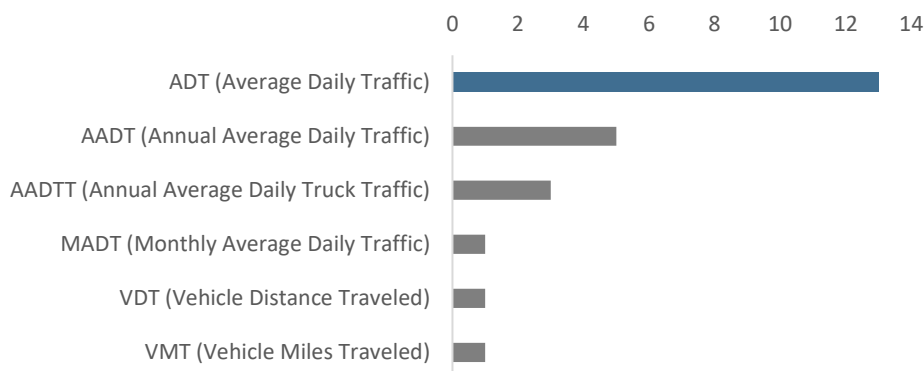
Almost all surveyed Des Moines area governments collect vehicle volumes (n = 13) from traffic counts. Other commonly collected attributes include vehicle speed (n = 10) and vehicle classification (n = 9). Only a few surveyed Des Moines area governments collect vehicle and axle spacing, gap, lane occupancy, and headway.

#### Which of the following traffic attributes do your agency collect in its traffic counts? (Answered 13; Skipped 4)



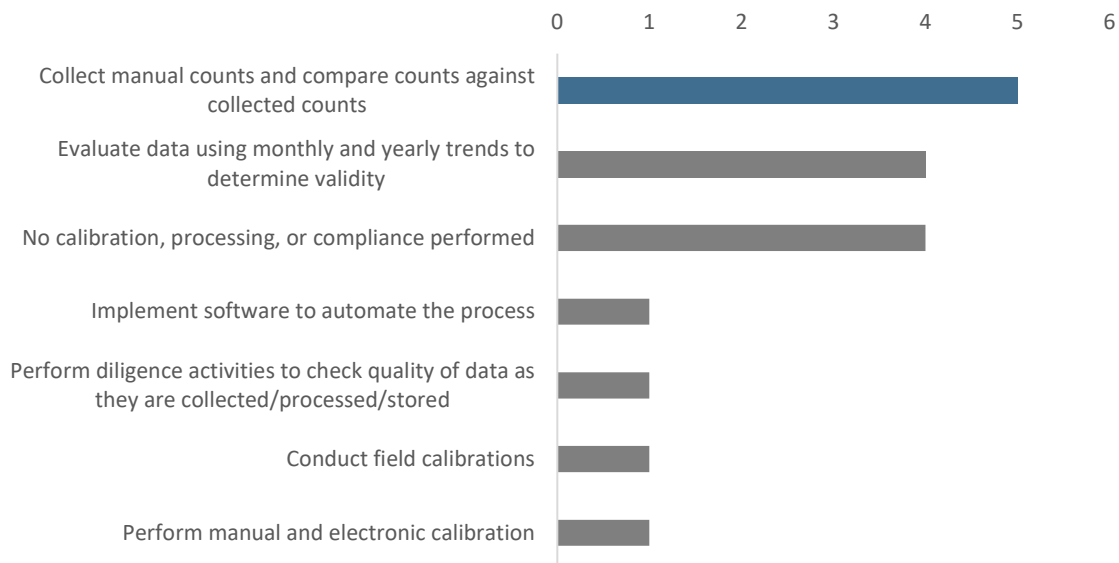
The majority (n = 13) of surveyed Des Moines area governments collect ADT (Average Daily Traffic) from their traffic counts. Some surveyed Des Moines area governments collect AADT (Annual Average Daily Traffic) (n = 5); and only a few collect AADTT (Annual Average Daily Truck Traffic) (n = 3).

#### Which of the following data products are collected from your agency's traffic counts? (16 Answered; 1 Skipped)



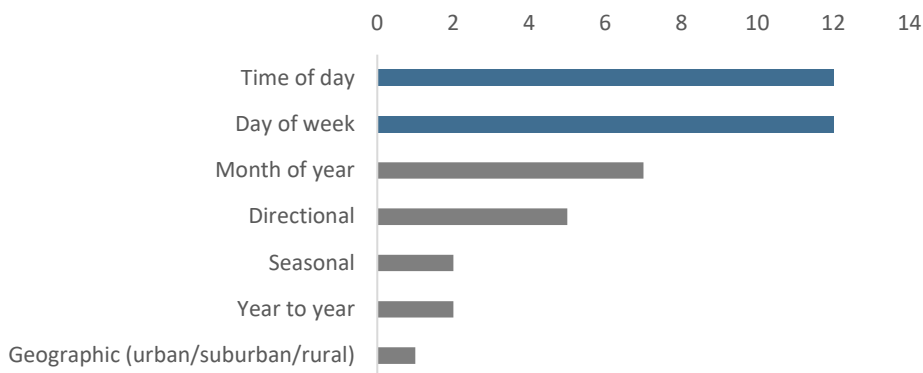
Some of the surveyed Des Moines area governments (n = 5) post-process their traffic counts by comparing against manual counts. A few of the surveyed Des Moines area governments (n = 4) evaluate collected traffic count data with monthly and yearly data. There are also some surveyed Des Moines area governments (n = 4) that do not perform any post-processing of traffic count data.

Does your agency do any of the following for traffic counting calibration, processing, or compliance?  
(11 Answered; 6 Skipped)



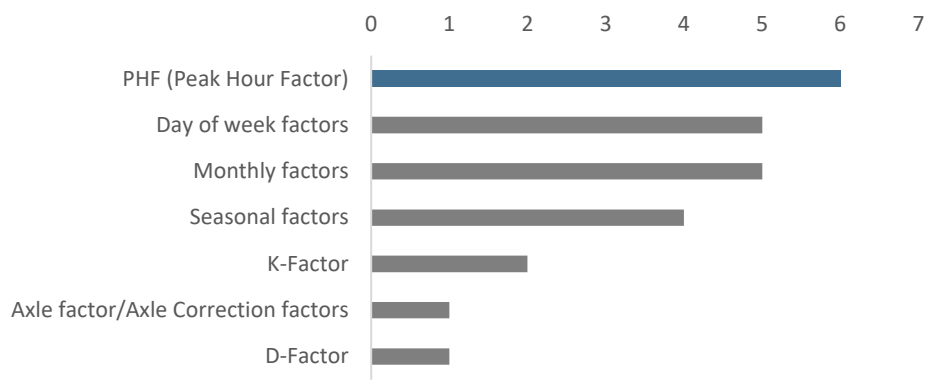
Most of the surveyed Des Moines area governments account for time of day (n = 12) and day of week (n = 12) in their traffic counts. Some of the surveyed Des Moines area governments account for month of year (n = 7) and direction (n = 5), as well.

Do your traffic counts account for the following traffic variables?  
(13 Answered; 4 Skipped)



The most common factors that the surveyed Des Moines area governments apply to their traffic counts are peak hour factors (n = 6), day of week factors (n = 5), monthly factors (n = 5), and seasonal factors (n = 4).

Does your agency apply any of the following factors to your traffic counts?  
(9 Answered; 8 Skipped)



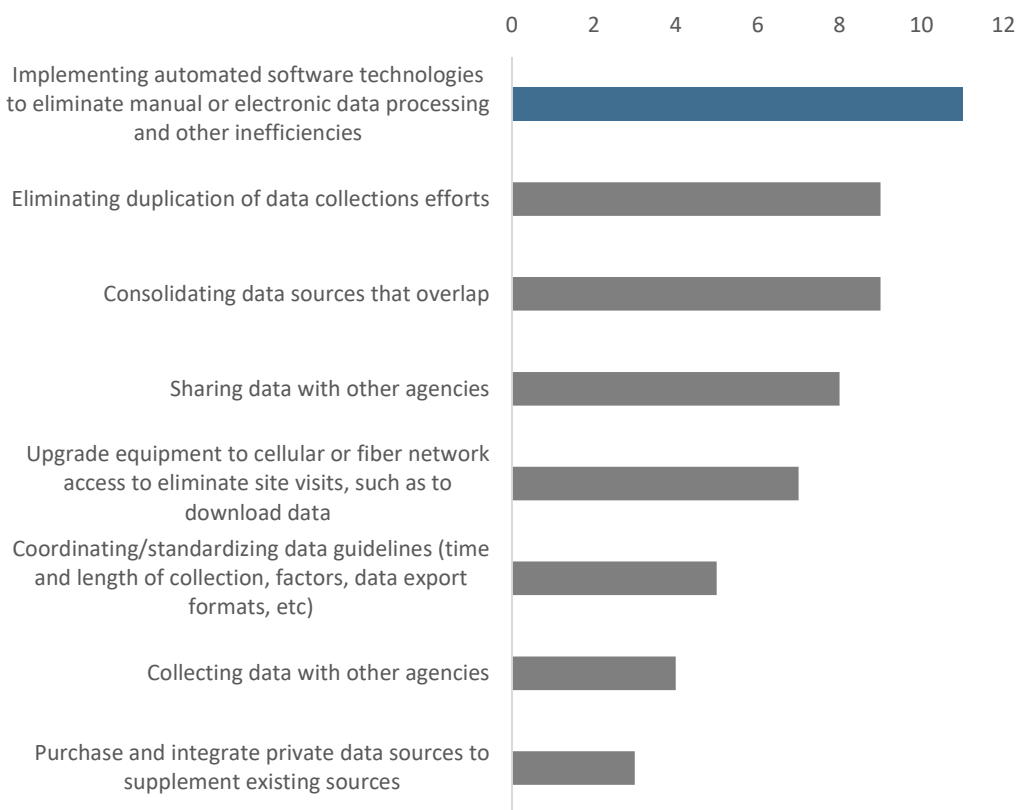
### Regional Traffic Counting

Over half of the surveyed Des Moines area governments expressed much interest in implementing automated software to assist data processing and to eliminate inefficiencies (n = 11), eliminating duplication of data collection efforts (n = 9), consolidating overlapping data sources (n = 9), and sharing data with other agencies (n = 8).

Additional topics that received much interest include:

- Upgrading equipment to cellular or fiber to eliminate site visits (n = 7)
- Coordinating or standardizing data guidelines (n = 5)
- Collecting data with other agencies (n = 4)
- Purchasing and integrating private data sources (n = 3)

Which of the following traffic counting practices would your agency be interested in?  
(Much Interest)  
(15 Answered; 2 Skipped)



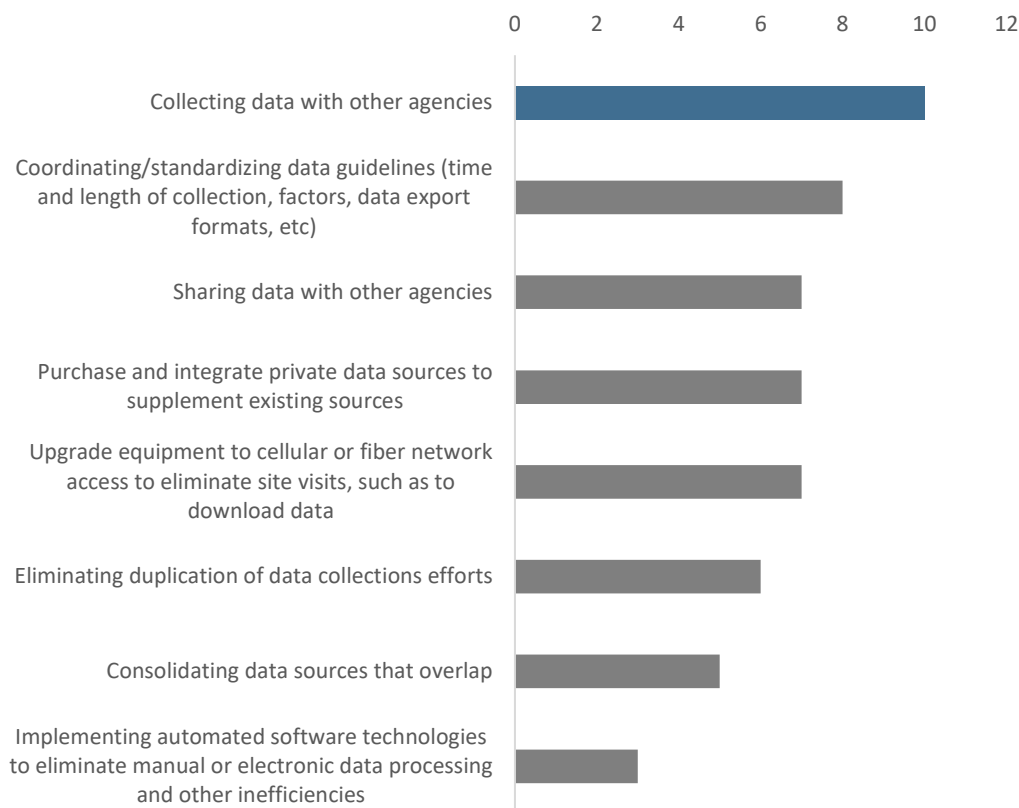


There is some interest from over half of the surveyed Des Moines area governments for collecting data with other agencies (n = 10) and for coordinating or standardizing data collection guidelines (n = 8).

Additional topics that received some interest include:

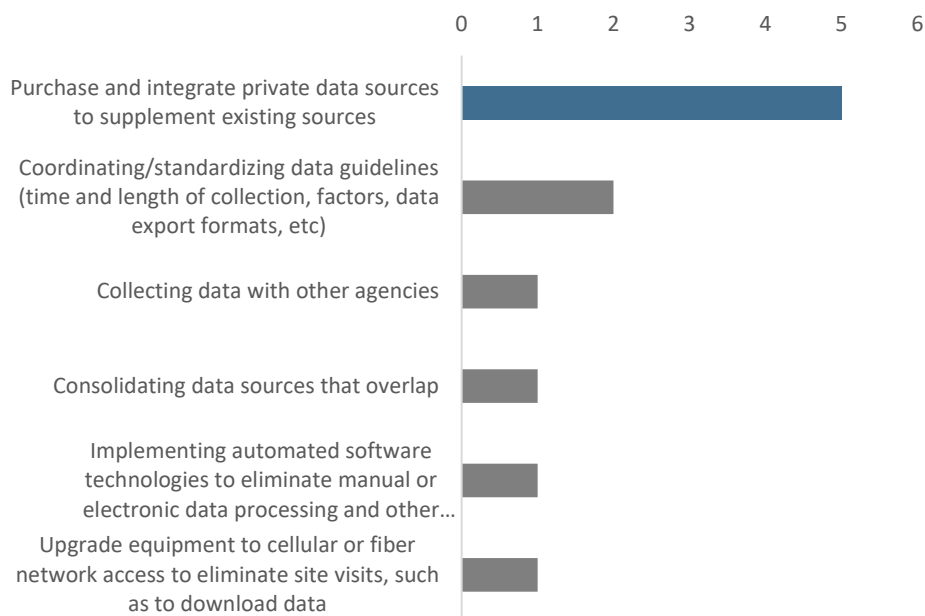
- Sharing data with other agencies (n = 7)
- Purchasing and integrating private data sources (n = 7)
- Upgrading equipment to cellular or fiber to eliminate site visits (n = 7)
- Eliminating duplication of data collection efforts (n = 6)
- Consolidating data sources (n = 5)
- Implementing automated software technologies to assist data processing and eliminate inefficiencies (n = 3)

Which of the following traffic counting practices would  
your agency be interested in?  
(Some Interest)  
(15 Answered; 2 Skipped)



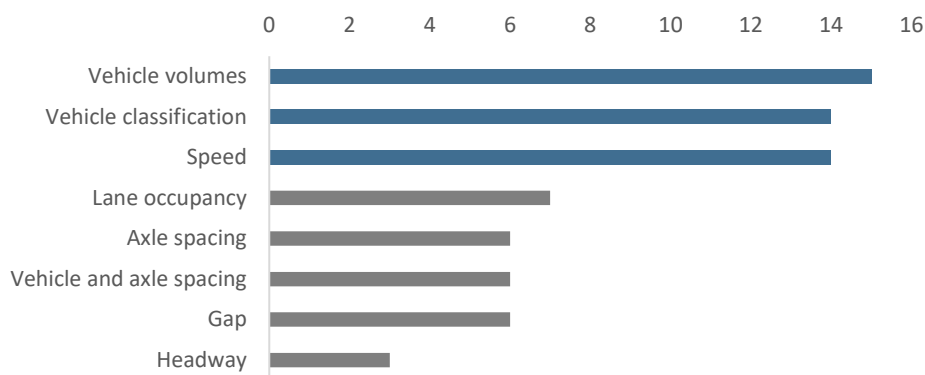
Only a few topics received no interest from the surveyed Des Moines area governments: the purchase and integration of private data sources (n = 5) and coordinating or standardizing data guidelines (n = 2).

Which of the following traffic counting practices would your agency be interested in?  
(No Interest)  
(15 Answered; 2 Skipped)



The top attributes that almost all the surveyed Des Moines area governments would like collected in traffic counts are vehicle volumes (n = 15), vehicle classification (n = 14), and vehicle speeds (n = 14).

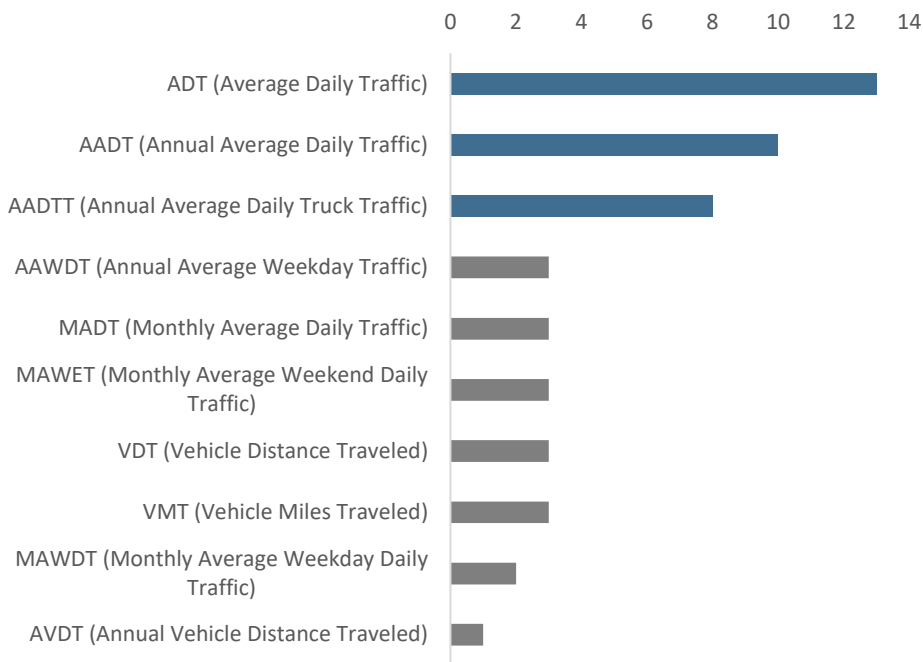
Which of the following traffic attributes would your agency like collected in its traffic counts?  
(17 Answered; 0 Skipped)



The top data products that over half of the surveyed Des Moines area governments would like collected in traffic counts are ADT – Average Daily Traffic (n = 13), AADT - Annual Average Daily Traffic (n = 10), and AADTT - Annual Average Daily Truck Traffic (n = 8).

Other data products suggested for collection include peak hour traffic counts (n = 1) and AAWT – Annual Average Weekend Traffic for local shopping destinations (n = 1).

Which of the following data products would your agency like collected in traffic counts?  
(16 Answered; 1 Skipped)



### ***Additional Comments***

The following are additional comments about traffic counting:

- “In addition to signal detector counts and manual counts, we collect road tube counts for many street segments around the City. These are primarily used in areas where there are no traffic signals and, therefore, no signal detectors.”
- “We are upgrading to a traffic operation software and video system in the next couple of years that will change the way we manage vehicle counting.”
- “Our traffic counting program is very minimal. We mostly rely on Iowa DOT counts and counts conducted as part of a Capital Improvement Project.”
- “We rely on Iowa DOT traffic count data.”
- “We don't do any internal traffic counting...”




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Greater Des Moines

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Grimes • Johnston • Mitchellville • Norwalk • Pleasant Hill • Polk City • Polk County  
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