



FAST: FY 2018 Federal Fleet Data Call

Looking at Data Quality

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Idaho National Laboratory

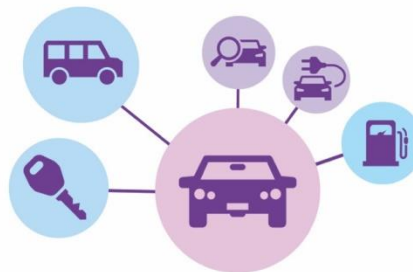
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INL/CON-19-53468

Topics

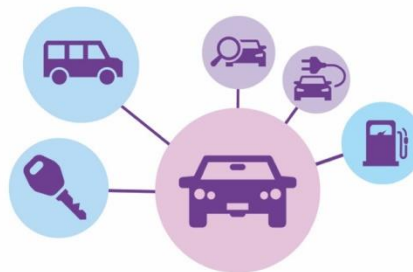
- FY 2018 fleet dataset
- Data Quality
 - Where are the rough spots?
 - What can we do about them?
- Looking forward
 - Watching quality
 - New ways of viewing fleet data

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FY 2018 FEDERAL FLEET DATASET

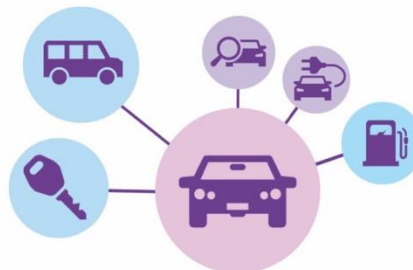
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FY 2018 Data Call

- Initial close 12/17/2018
- Final close 03/20/2019
- Milestones:
 - All reporting agencies provided VLD
 - New structured review process

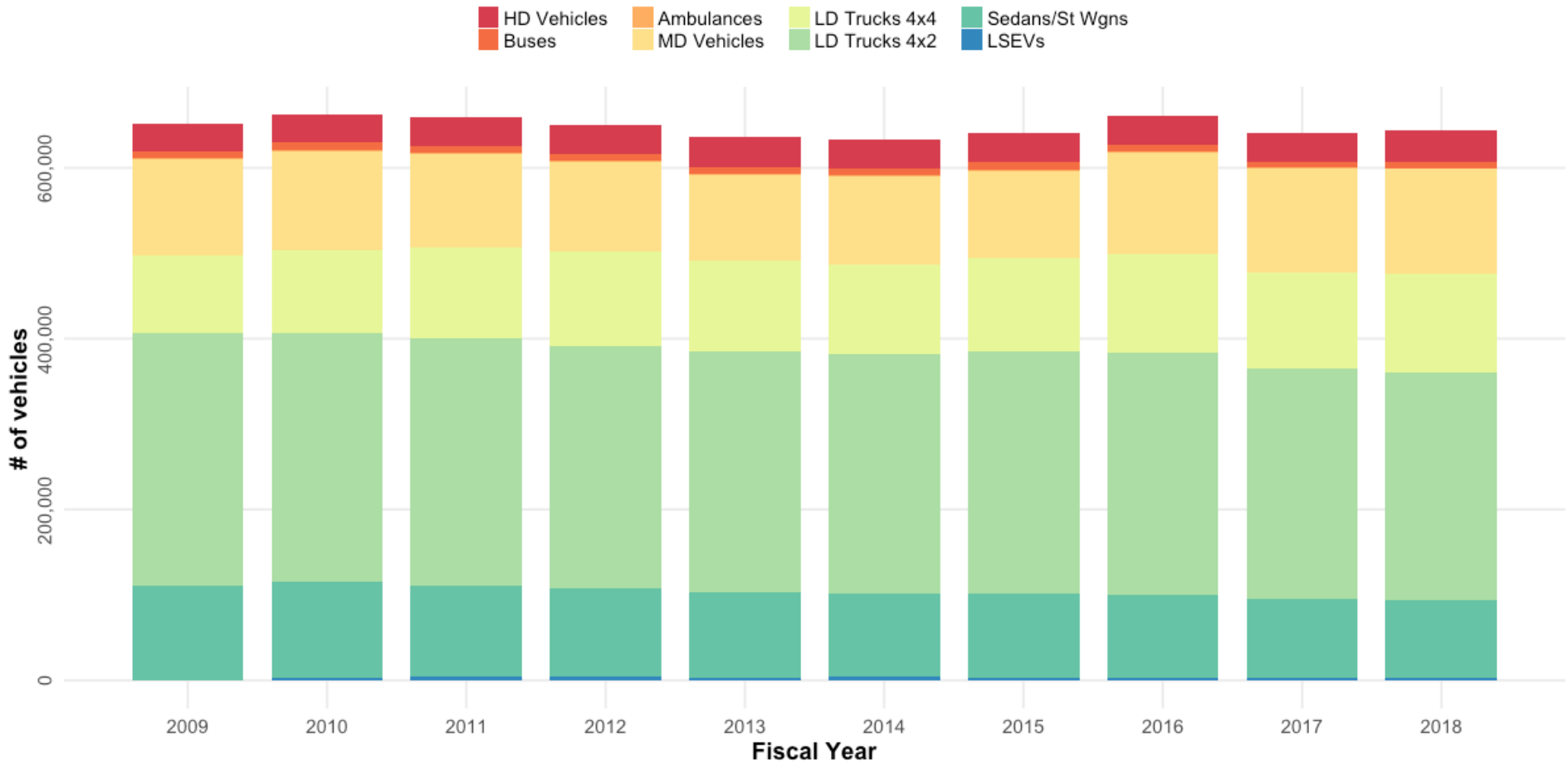
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FY 2018 Fleet Data Overview

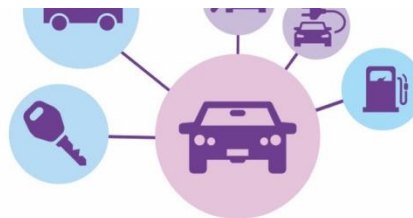
Federal Vehicle Inventory

Inventory by Fiscal Year and Vehicle Class



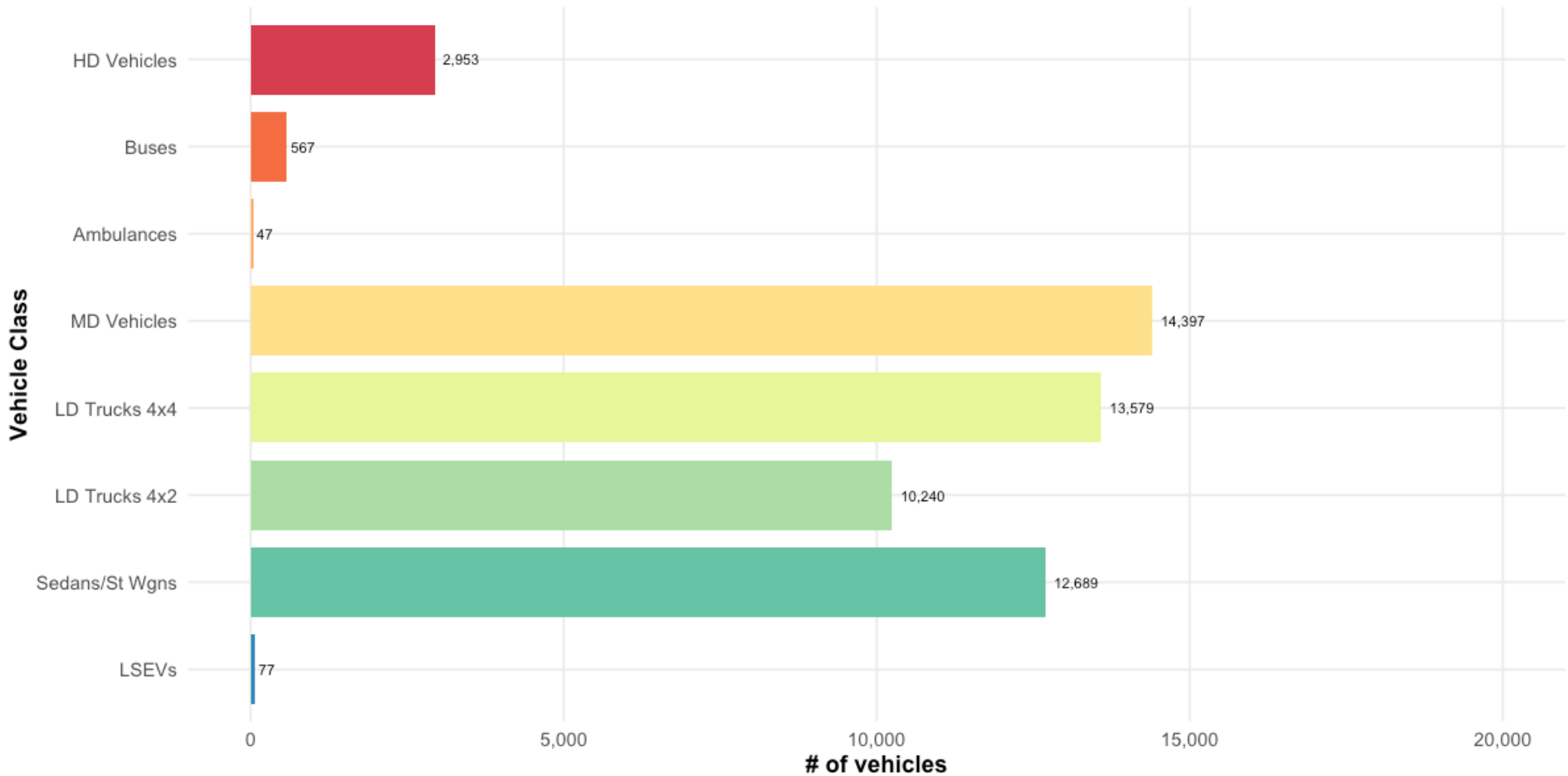
Source: FAST, final data as of 2019-03-21

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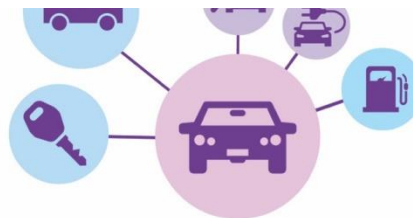
FY 2018 Fleet Data Overview

Federal Vehicle Acquisitions
FY 2018 Acquisitions by Vehicle Class



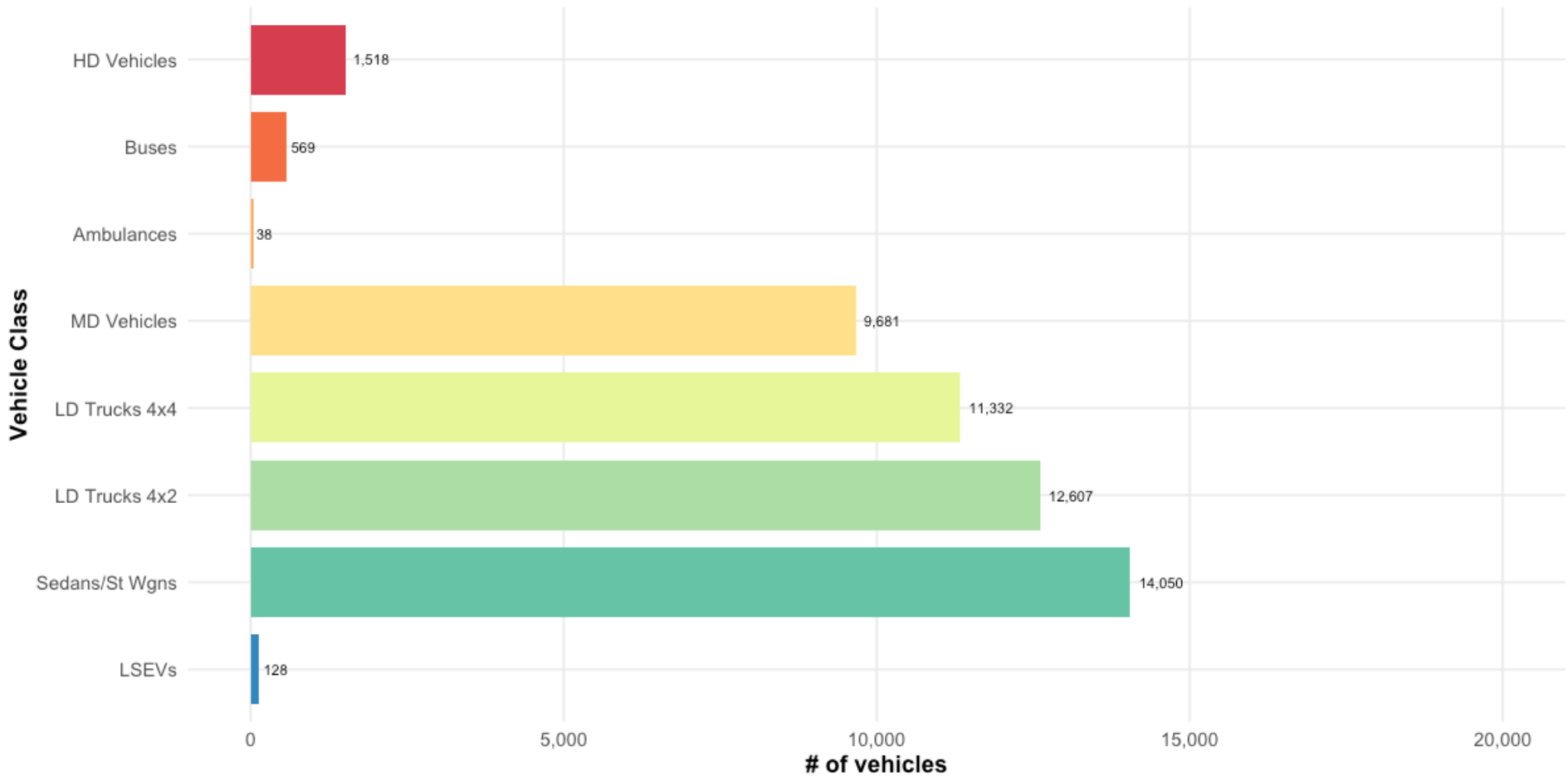
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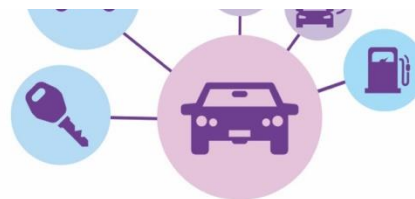


FY 2018 Fleet Data Overview

Federal Vehicle Disposals
FY 2018 Disposals by Vehicle Class



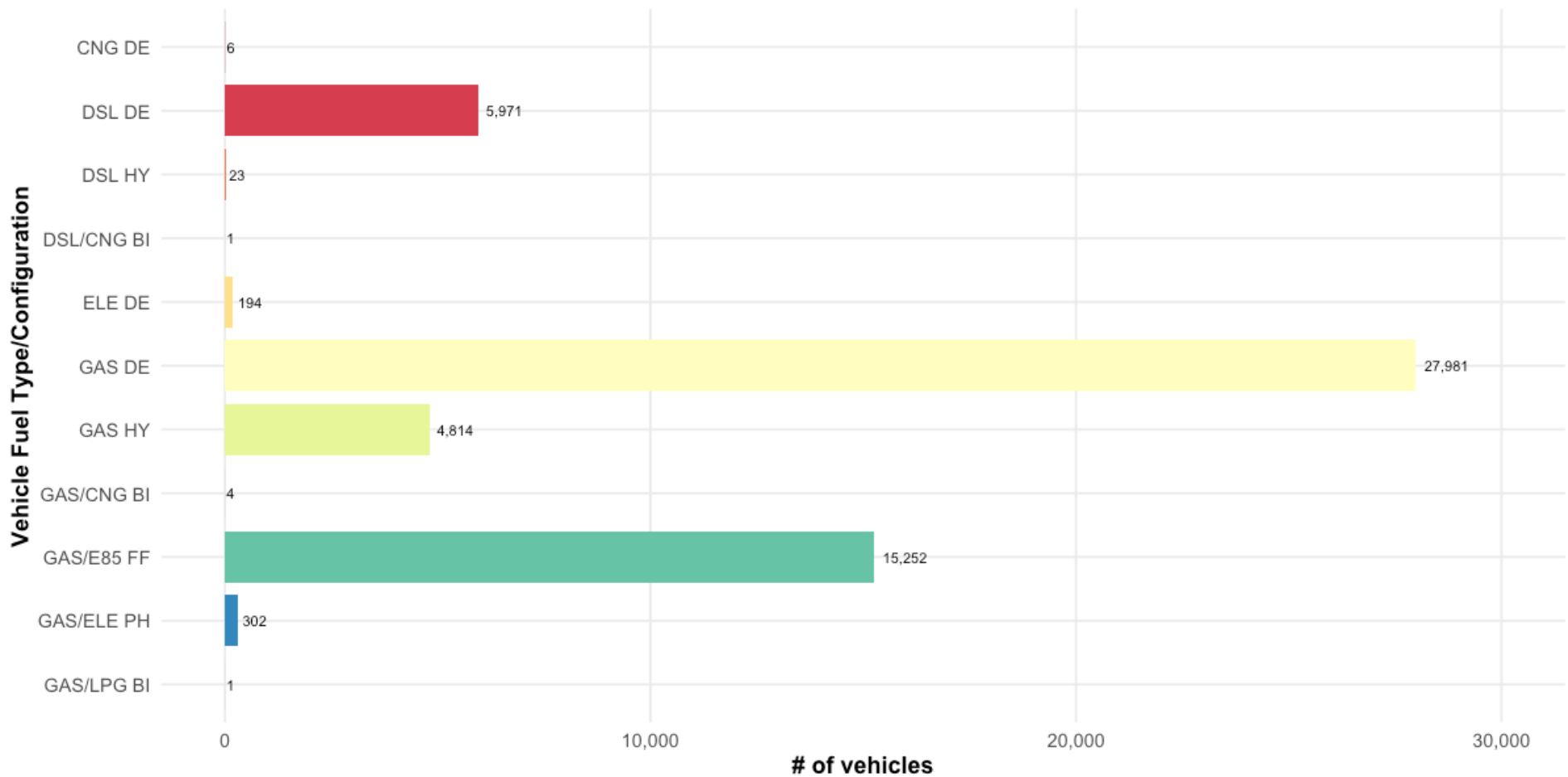
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FY 2018 Fleet Data Overview

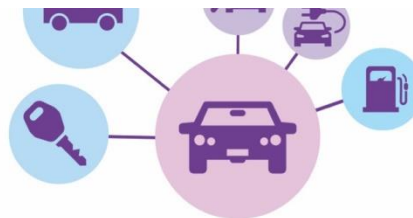
Federal Vehicle Acquisitions

FY 2018 Acquisitions by Vehicle Fuel Type/Configuration



Source: FAST, final data as of 2019-03-21

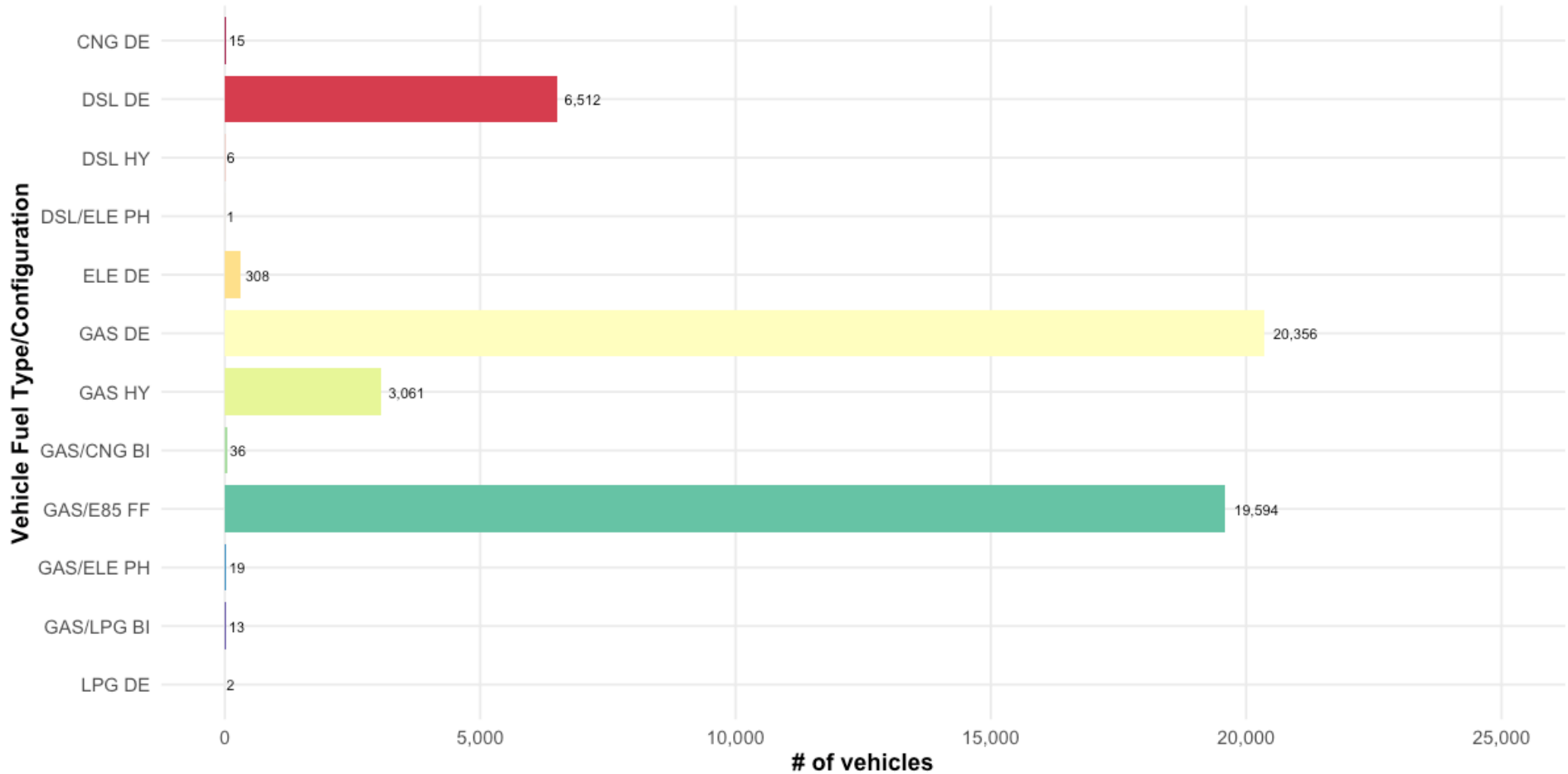
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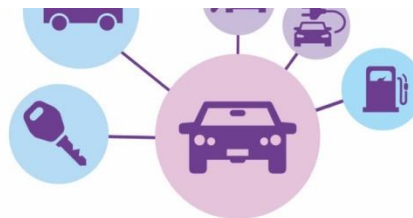
Federal Vehicle Disposals

FY 2018 Disposals by Vehicle Fuel Type/Configuration



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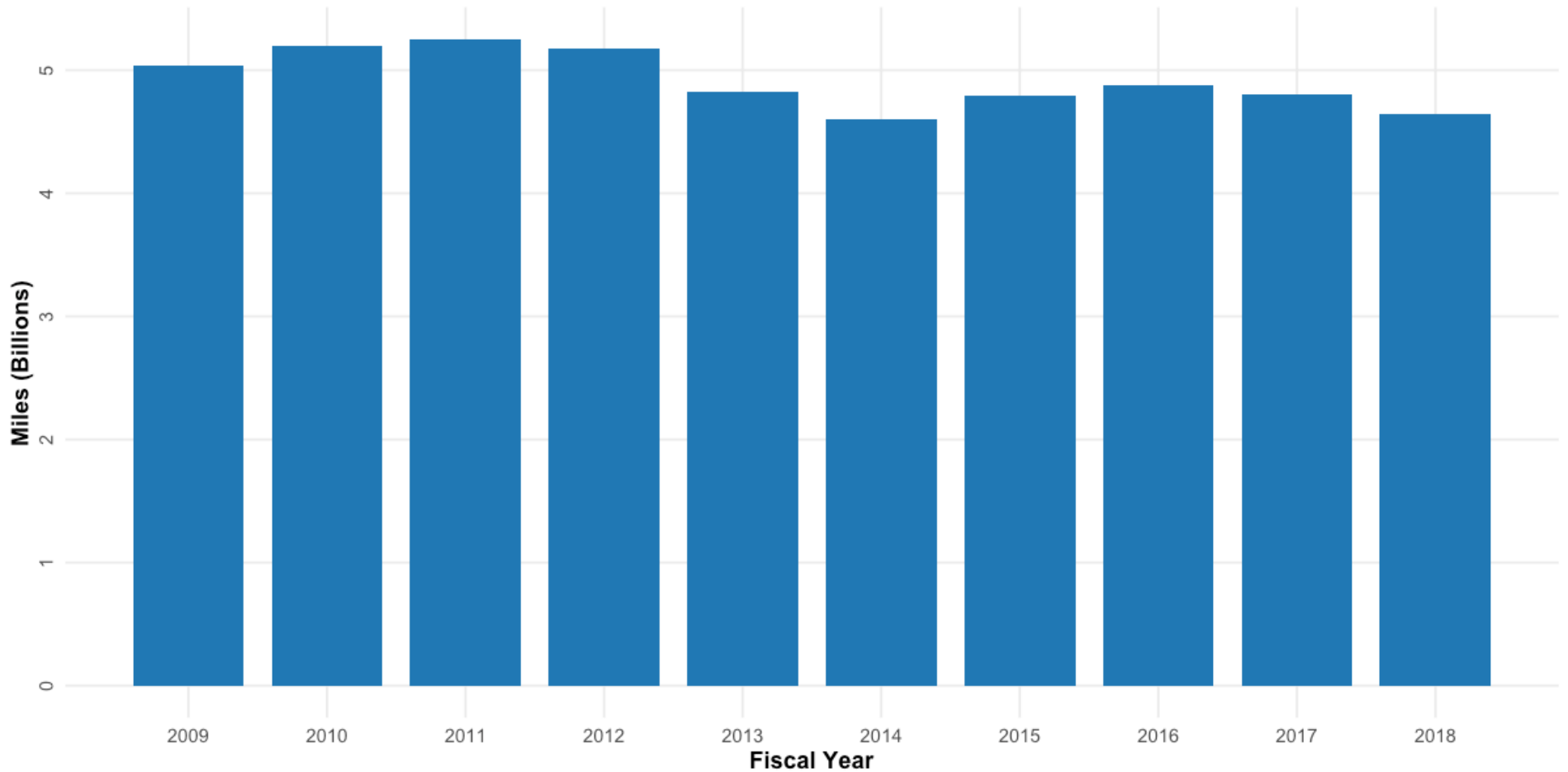
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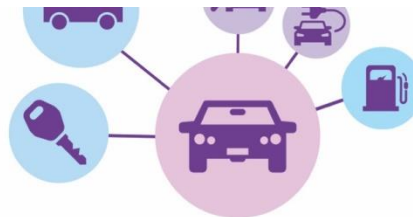
Federal Vehicle Miles

Miles by Fiscal Year



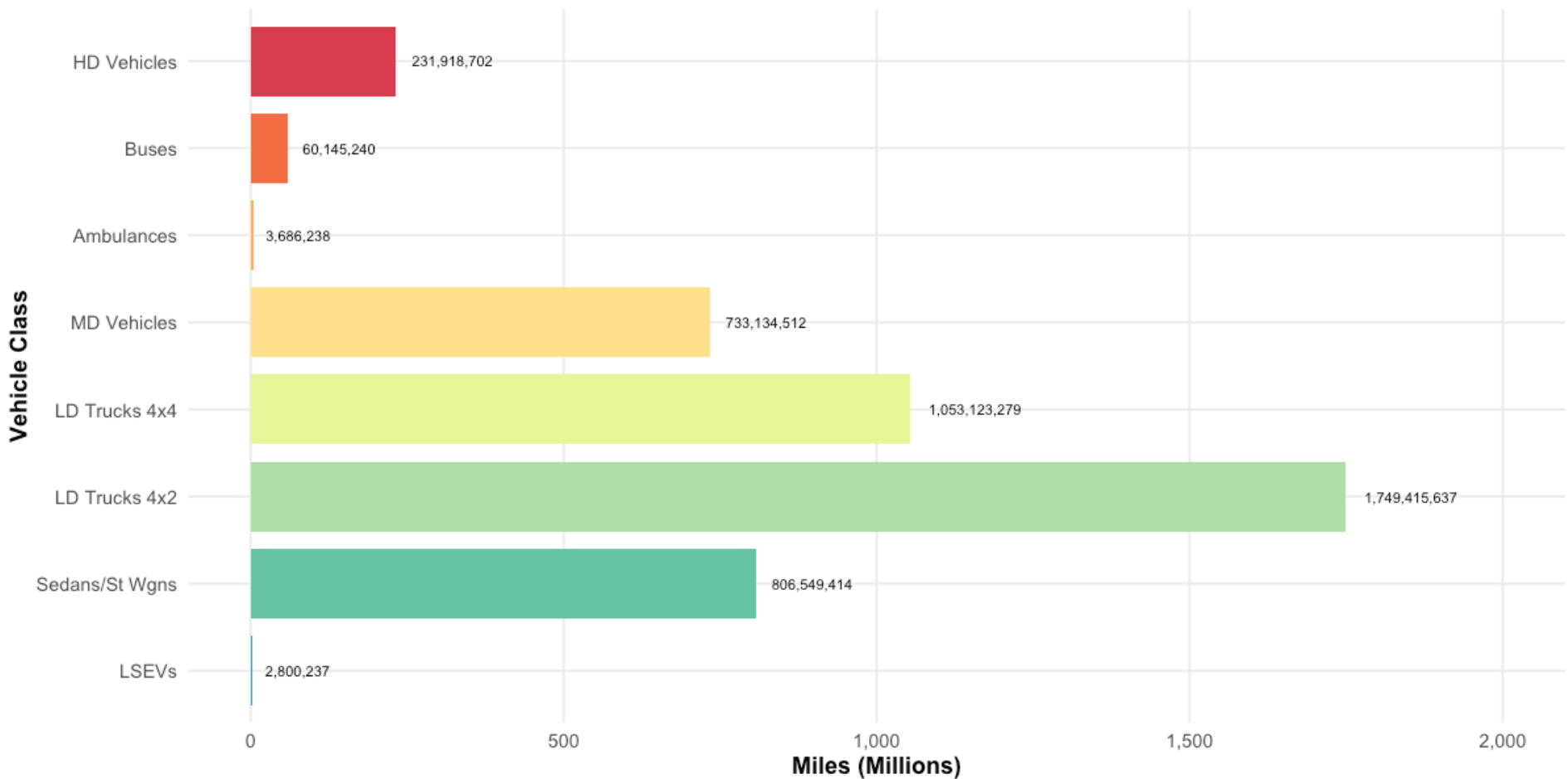
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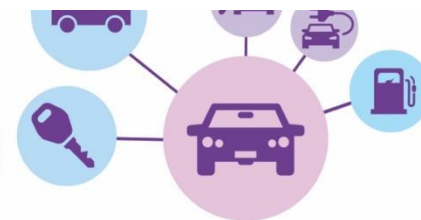
FY 2018 Fleet Data Overview

Federal Vehicle Miles
FY 2018 Miles by Vehicle Class



Source: FAST, final data as of 2019-03-21

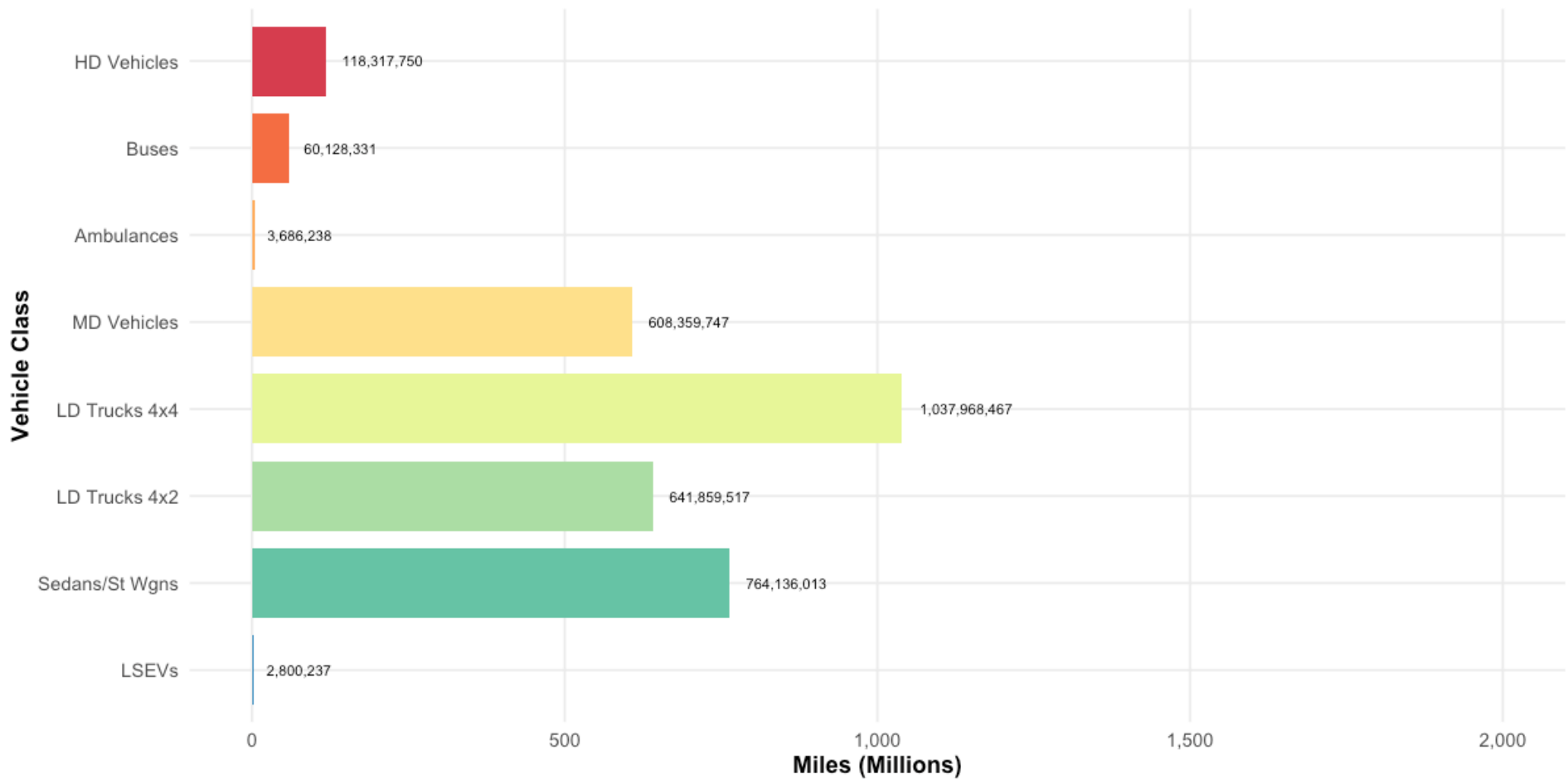
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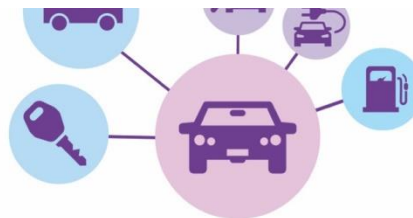
Federal Vehicle Miles (excluding USPS)

FY 2018 Miles by Vehicle Class



Source: FAST, final data as of 2019-03-21

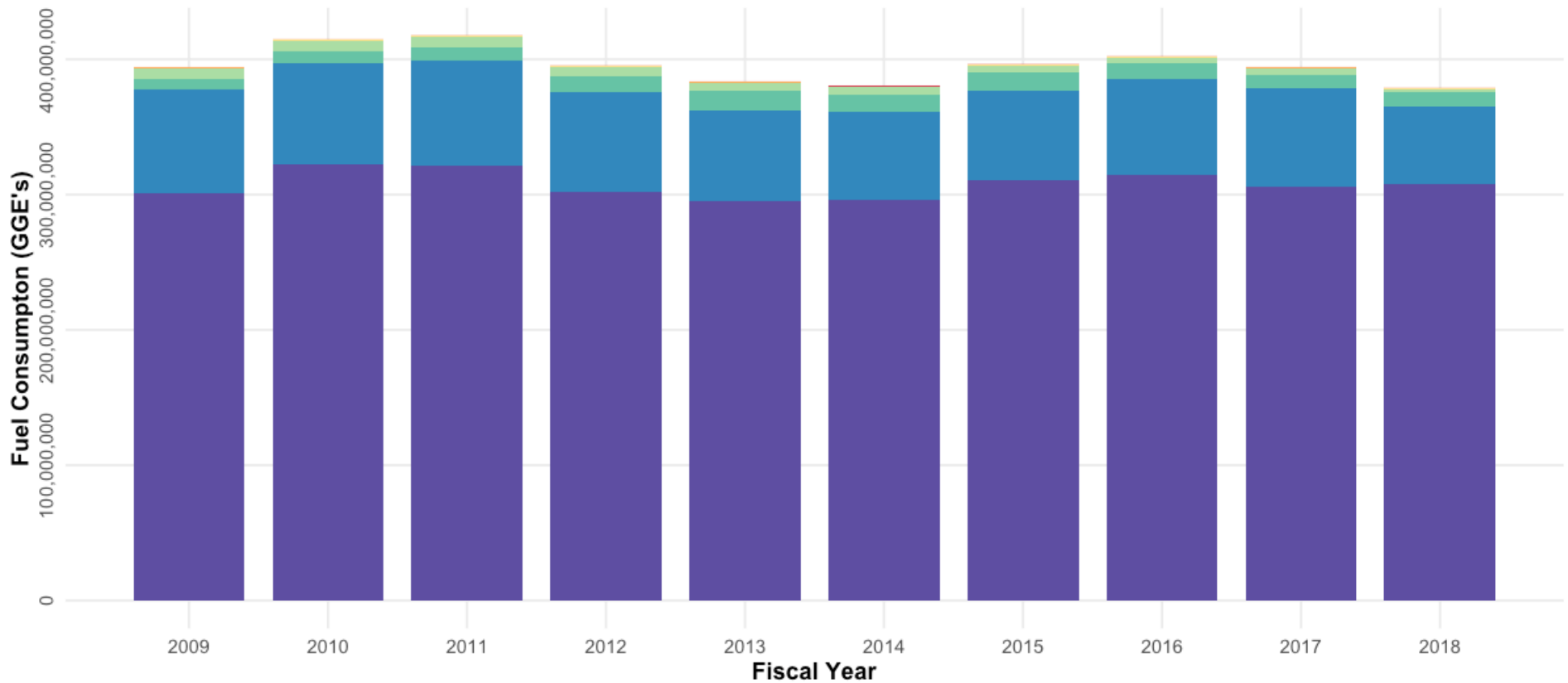
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FY 2018 Fleet Data Overview

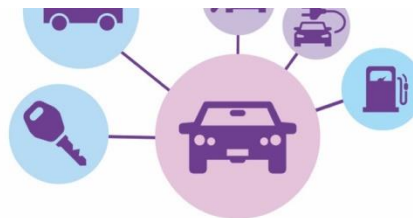
Federal Vehicle Fuel Consumption

Fuel Consumption by Fiscal Year and Fuel Type



Source: FAST, final data as of 2019-03-21

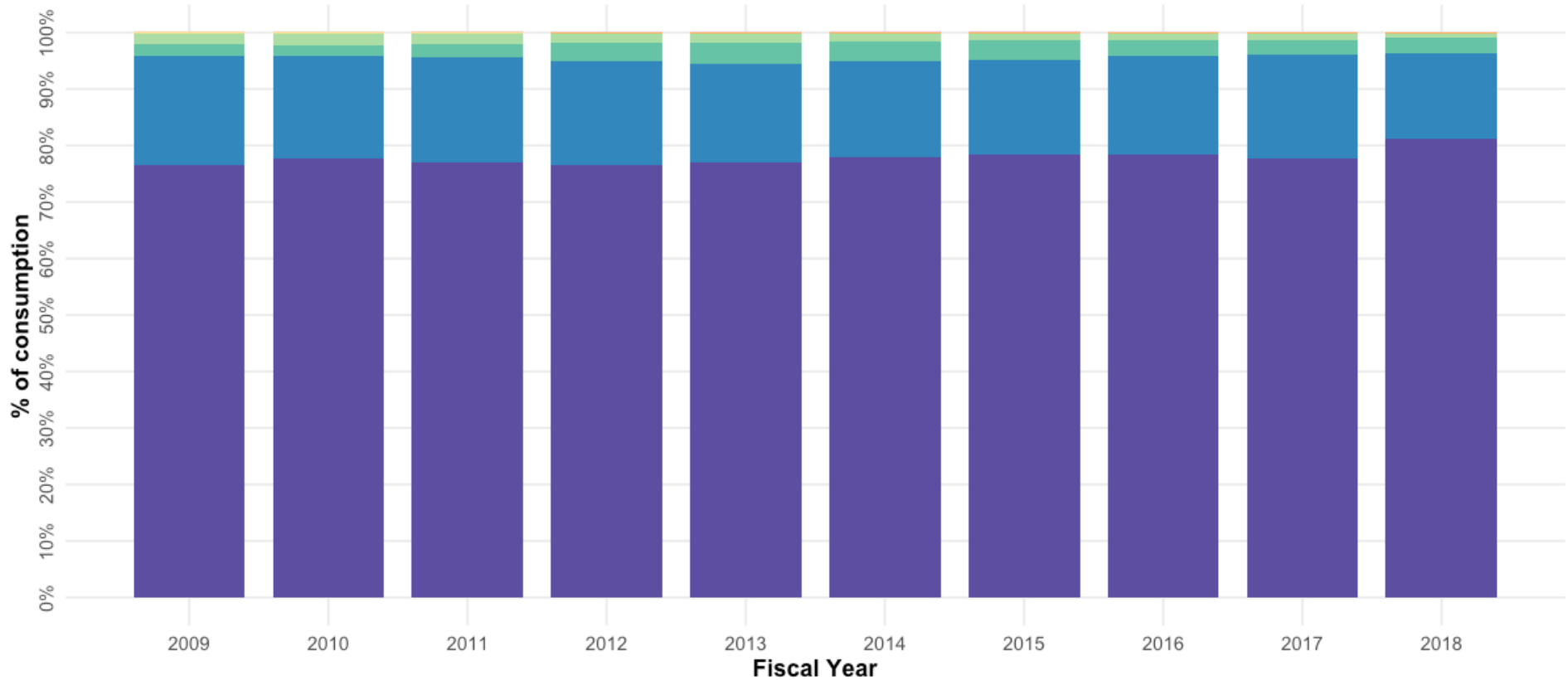
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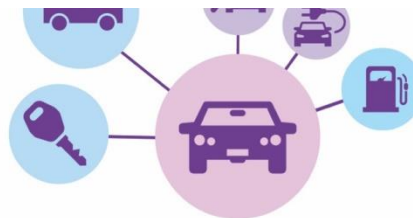
Federal Vehicle Fuel Consumption

% Fuel Consumption by Fiscal Year and Fuel Type



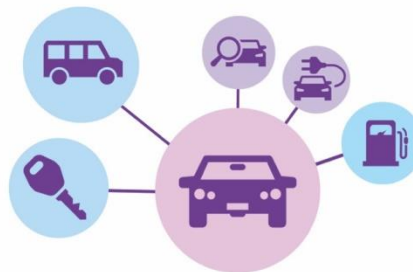
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DATA QUALITY

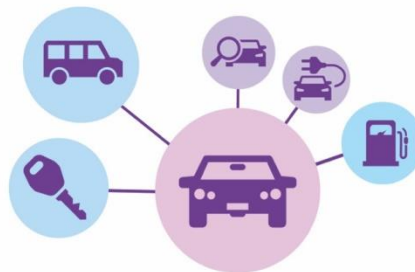
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Data Quality

- Lots of interest in vehicle-level data
- How good is it?
 - *“It’s complicated...”*

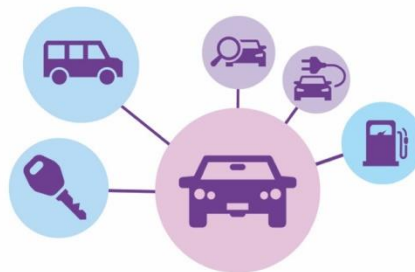
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3 Questions

- What are the problems?
- How do we find them?
- What do we do about them?

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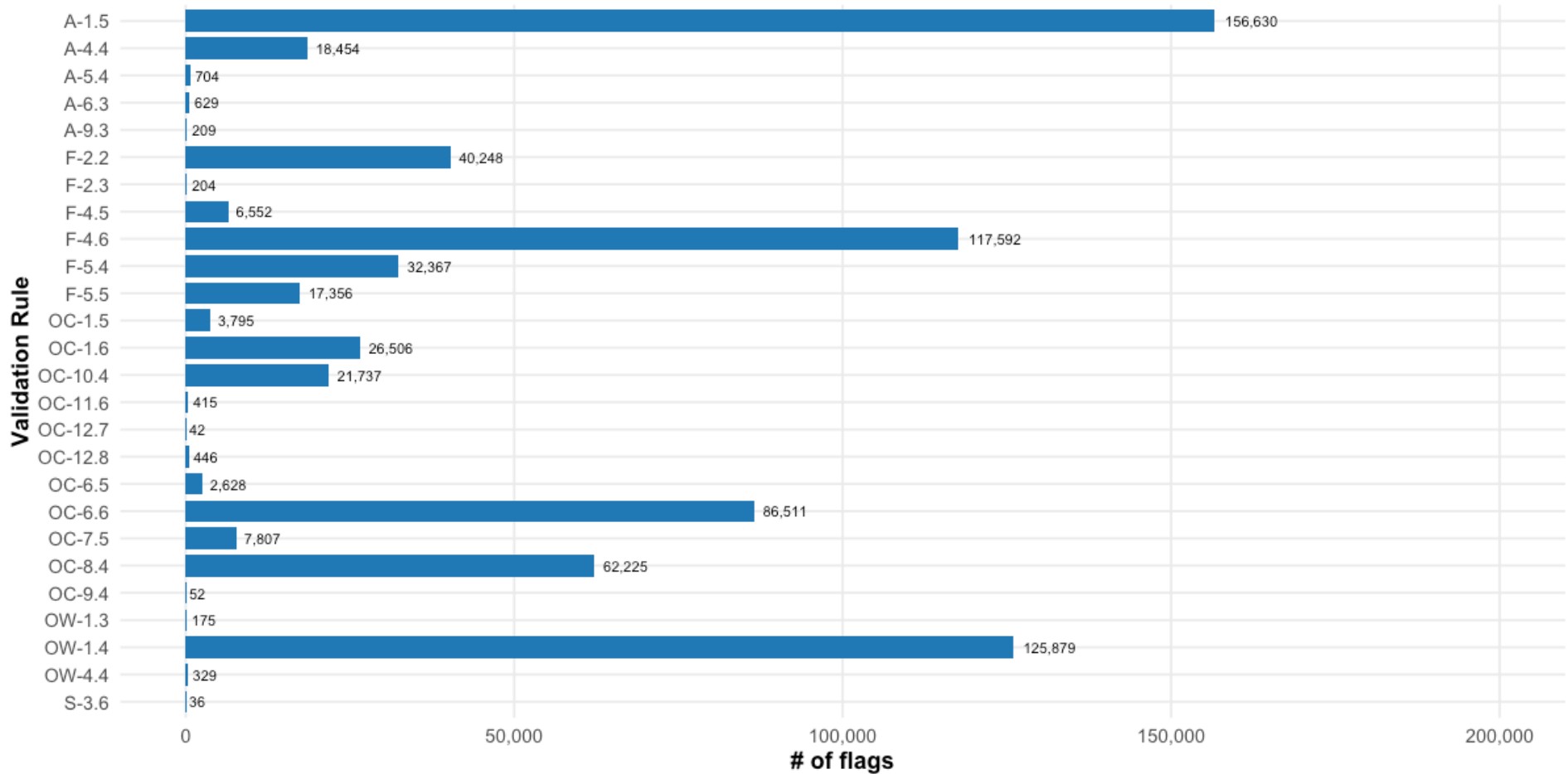
Problem Areas



Problem Areas

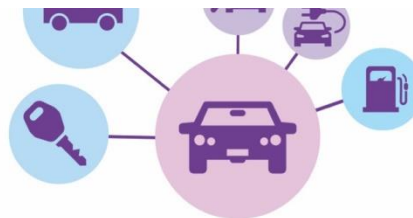
VLD Validation Flags

FY 2018 Agency Submissions



Source: FAST, final data as of 2019-03-21

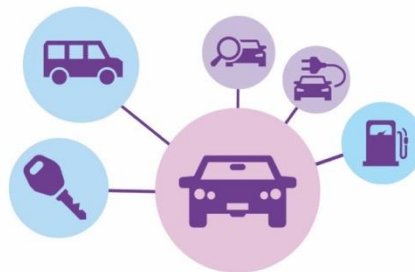
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1) Year-to-Year Consistency

- Inconsistent vehicle ID's from prior year
- Missing vehicles?
 - Reported prior year, missing this year
 - Missing in prior year, reported this year
- Unexpected changes to vehicles reported in both years

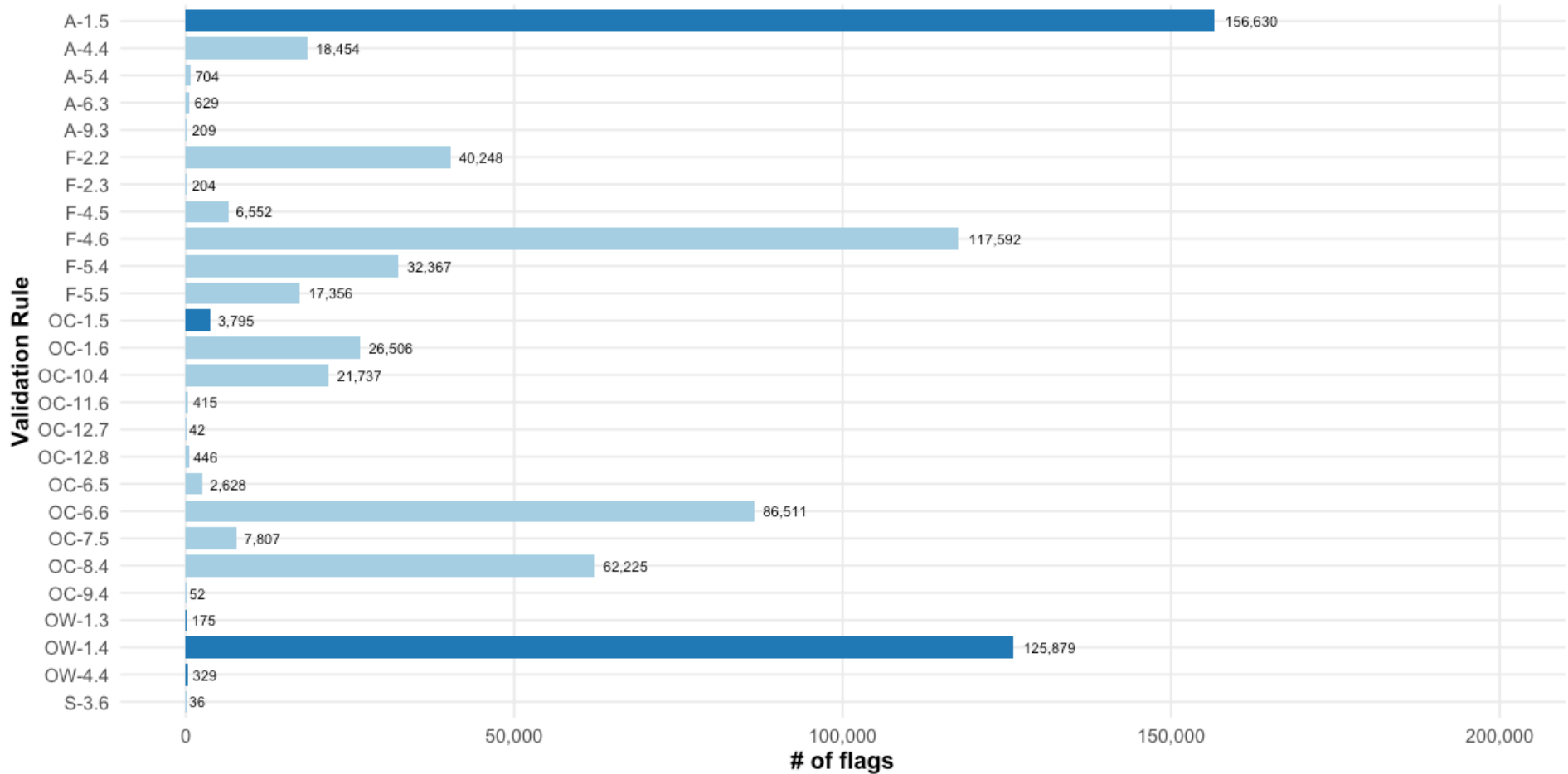
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1) Year-to-Year Consistency

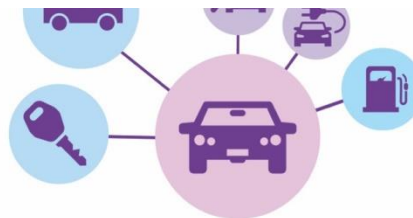
VLD Validation Flags

FY 2018 Submissions: Year-to-Year Consistency Flags



Source: FAST, final data as of 2019-03-21

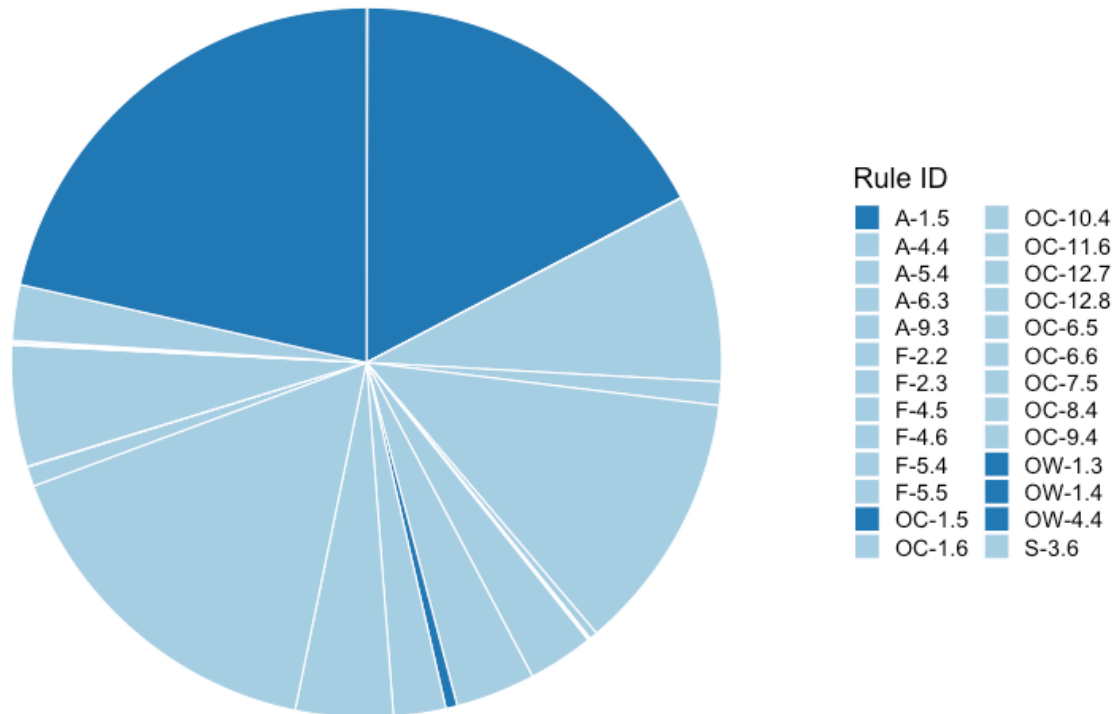
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1) Year-to-Year Consistency

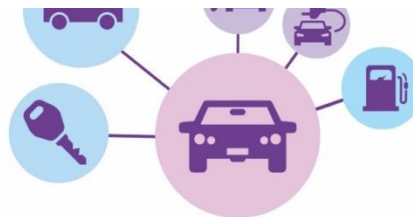
VLD Validation Flags

FY 2018 Submissions: Year-to-Year Consistency Flags



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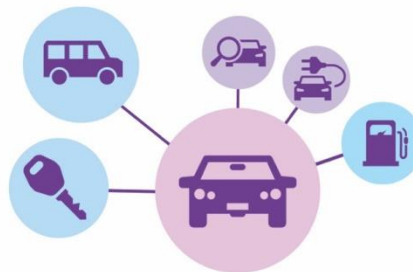
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1) Year-to-Year Consistency

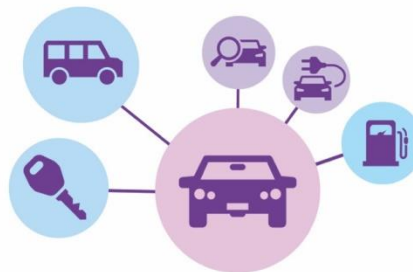
- Why should we care?
 - We can't tell how (in)complete the dataset is
 - Some validation checks can't be run
 - Missing vehicles = missing costs, fuel, miles
 - Impacts on compliance determination

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2) Fuel Consumption Data

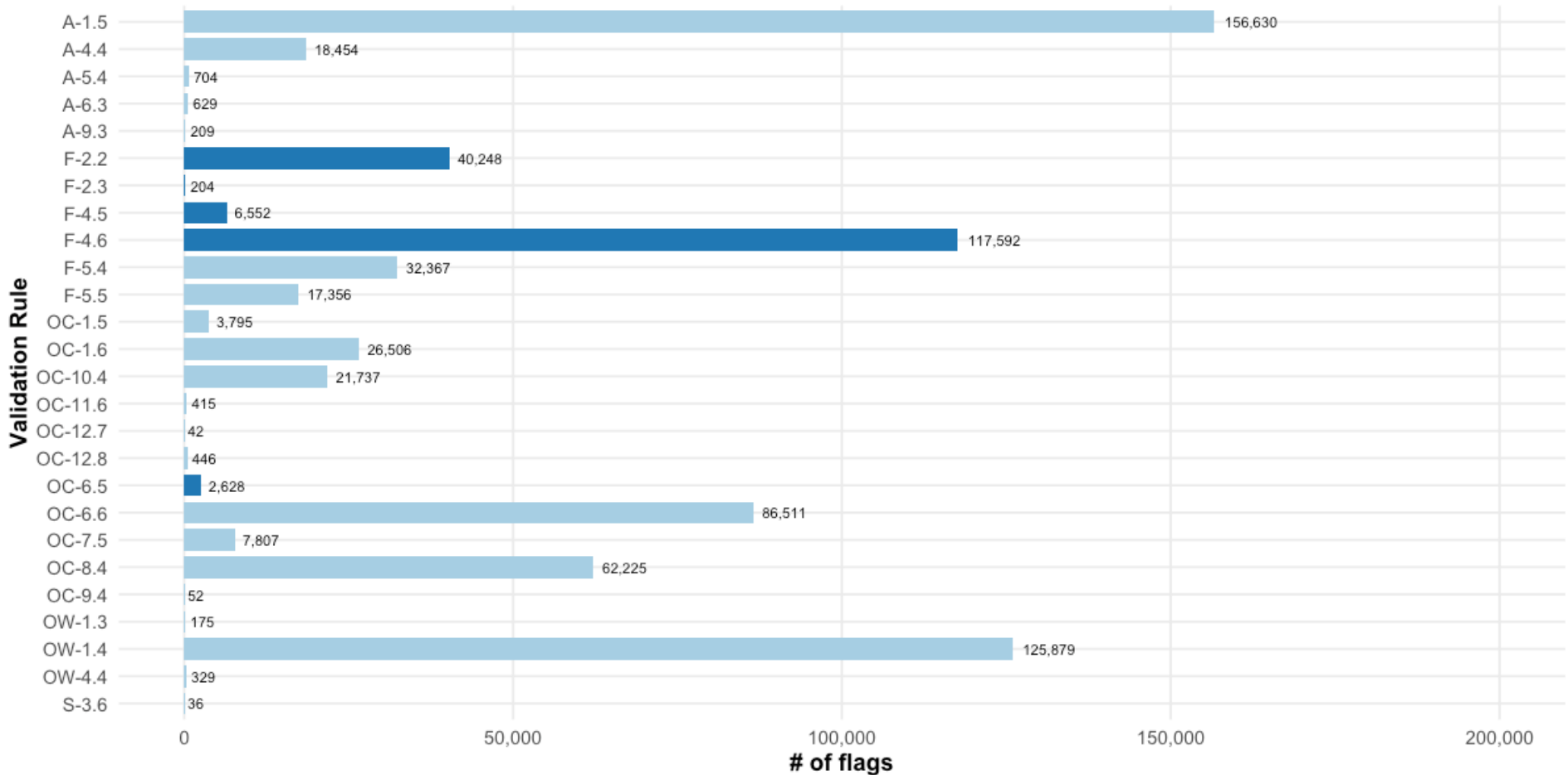
- Inconsistent fuel type reported for vehicle
- Invalid fuel volume
 - Frequent use of “placeholder” for fuel volume
 - Invalid (high) fuel efficiency
 - Under-reporting of consumption
 - ... and possibly fuel cost



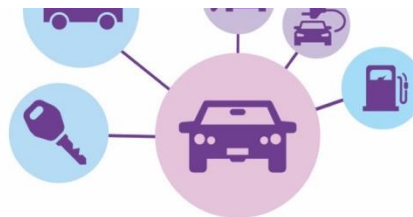
2) Fuel Consumption Data

VLD Validation Flags

FY 2018 Submissions: Fuel Consumption Flags

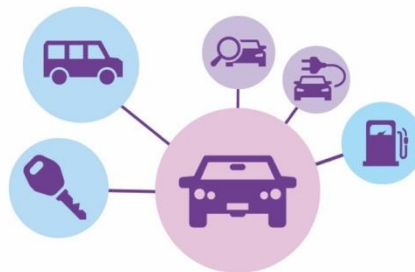


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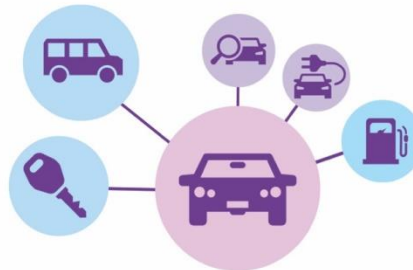
2) Fuel Consumption Data

- Why should we care?
 - Fuel consumption (type and volume) is of interest to lots of stakeholders
 - Fuel efficiency is questionable for many agencies
 - Impacts on compliance determination, performance evaluation



How do we investigate?

- Flagging detail generated during reporting
- FAST query tool: “VLD Validation Flags”
- FAST’s “Vehicle Flagging Rules Summary”
- Post-data call review summary
- FAST technical team



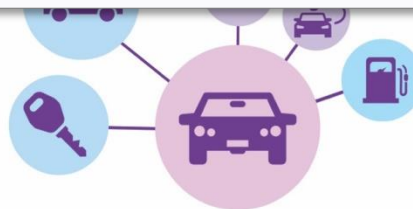
FAST VLD Flagging Rules Summary

Vehicle Flagging Rules Summary:

Organization Overall Score: 96%

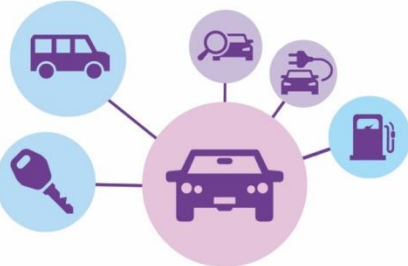
Vehicle Class & Quantity		Business Rule Section					Total
		Vehicle Attributes	Ownership Characteristics	Special Characteristics	Operational & Cost Data	Fuel Data	
LSEVs	1	80%	100%	100%	91%	83%	88%
Sedans/St Wgns	966	98%	82%	100%	98%	96%	96%
Ambulances	45	97%	82%	100%	95%	96%	94%
Buses	190	96%	92%	100%	93%	90%	93%
LD 4x2	3669	97%	79%	100%	98%	98%	96%
LD 4x4	3639	98%	84%	100%	98%	96%	96%
MD	4421	98%	81%	100%	99%	98%	96%
HD	2589	96%	82%	100%	95%	93%	93%
Total	15520	97%	82%	100%	98%	96%	96%

Vehicle Type & Quantity		Business Rule		
		OW-1.3	OW-1.4	OW-4.4
LD SUV 4x2	402	100%	37%	100%
LD Minivan 4x2 (Passenger)	1353	100%	38%	100%
LD Minivan 4x2 (Cargo)	106	97%	72%	96%
LD Van 4x2 (Passenger)	28	100%	39%	100%
LD Van 4x2 (Cargo)	48	100%	44%	100%
LD Pickup 4x2	1732	100%	33%	99%
LD Other 4x2	0	--	--	--



LOOKING FORWARD...

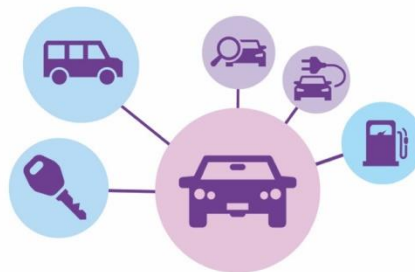
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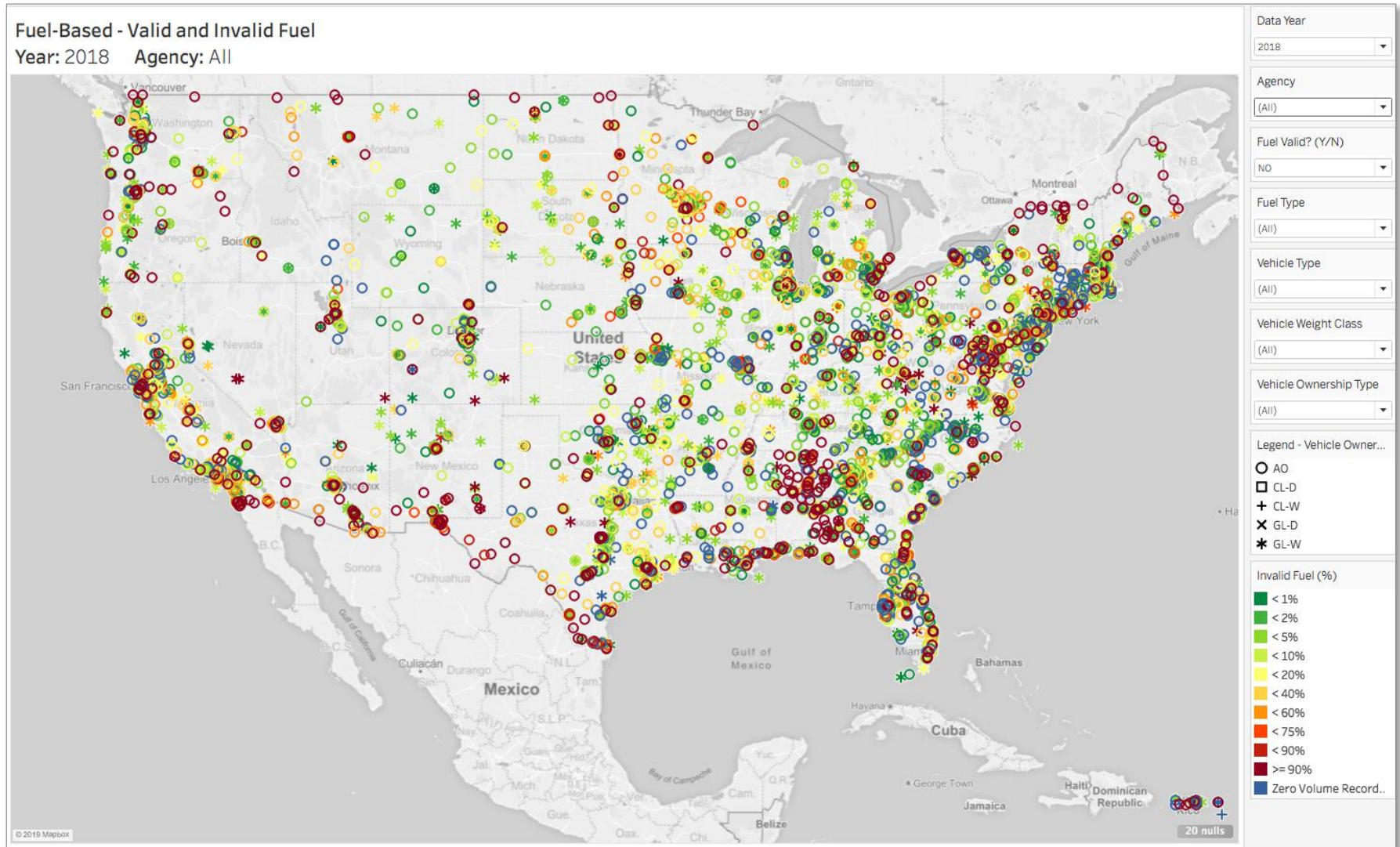
New Review Process

- FY 2018 “baseline” to evaluate changes in quality in future years
- Responses from agencies on how they plan to address problem areas

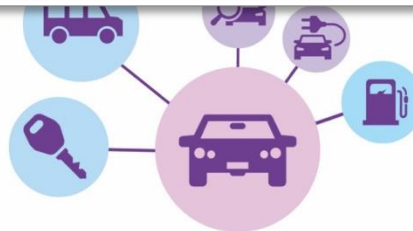
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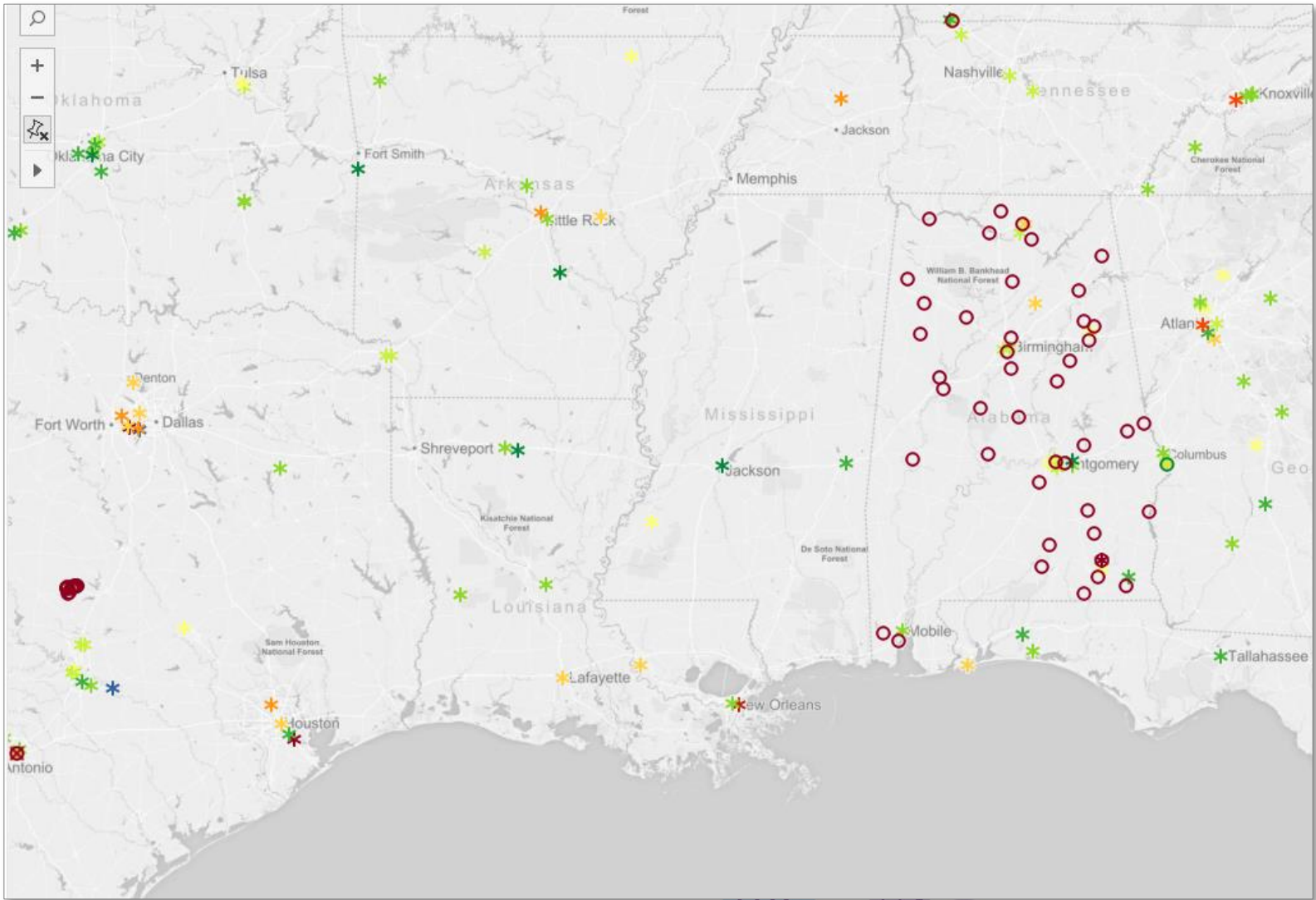
New Ways to Look at Fleet Data



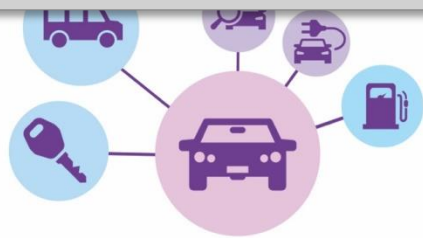
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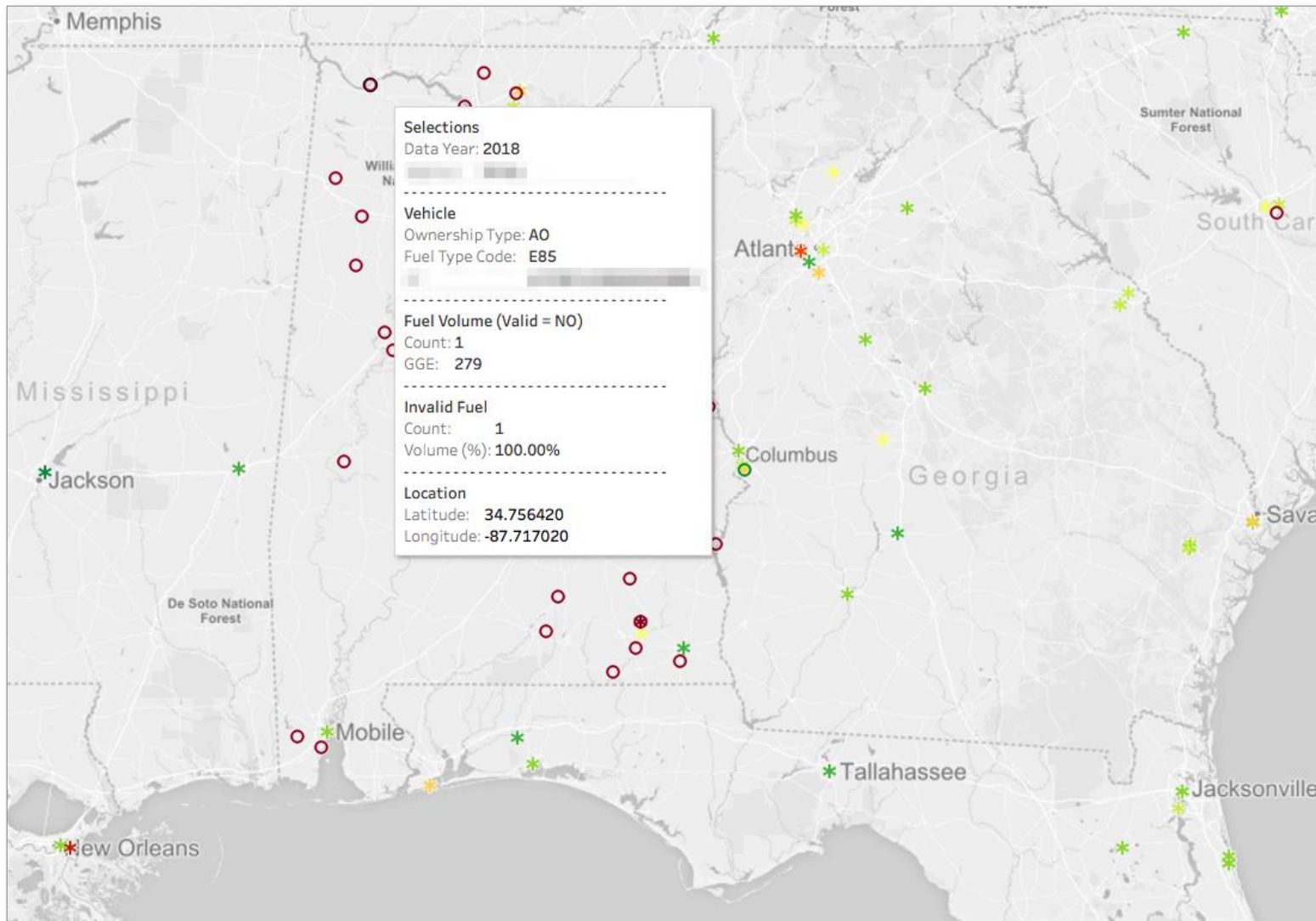
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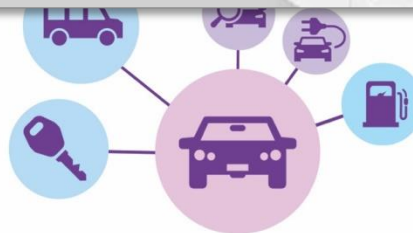
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New Ways to Look at Fleet Data

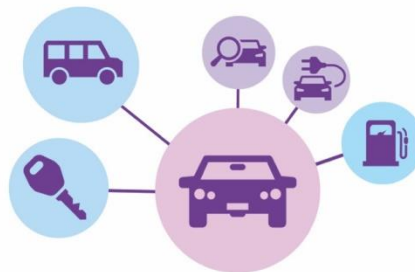


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DISCUSSION

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