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Federal Automotive Statistical Tool (FAST)
Federal Vehicle Fleet Data Collection

Ron Stewart
FAST Team

FedFleet 2021
The Federal Vehicle Fleet
FAST: Federal Vehicle Fleet Data Collection

- Collaborative project funded / managed by
  - GSA Office of Government-wide Policy
  - DOE Federal Energy Management Program

- Collects federal vehicle fleet information
  - Vehicles & operational data (costs, miles, fuel)
  - Fleet budget & planning data
  - Fueling infrastructure / EVSE data

- Primary federal fleet information source
  - Fleet data FY 2000 to present
FY 2020 Federal Fleet Dataset

- 49 organizations
- 704K vehicles
- 1.1M fuel records

## Federal Fleet: Recent Trends – FY 2020

<table>
<thead>
<tr>
<th>Metrics</th>
<th>FY 2020 Data</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory</td>
<td>658K</td>
<td>+1.9%</td>
</tr>
<tr>
<td>Miles</td>
<td>4.16B</td>
<td>-7.1%</td>
</tr>
<tr>
<td>Fuel</td>
<td>372M GGE</td>
<td>-3.8%</td>
</tr>
<tr>
<td>Cost</td>
<td>$4.22B</td>
<td>-3.4%</td>
</tr>
</tbody>
</table>

Cost figures include only operating costs (lease, maintenance, accident repair, fuel, indirect costs, depreciation) and do not include costs associated with vehicle acquisition or disposal.
Federal Fleet: Recent Trends - Inventory

FAST FY 2020 Dataset: Vehicle Inventory by Class

Federal Fleet: Recent Trends - Acquisitions

FAST FY 2020 Dataset: Vehicle Acquisitions by Fuel Type & Configuration

Federal Fleet: Recent Trends – Fuel

Federal Fleet: Recent Trends - Fuel

Federal Fleet: Recent Trends – Miles

Federal Fleet: Recent Trends – Miles

FAST FY 2020 Dataset: Vehicle Miles by Class

Federal Fleet: Recent Trends – Miles

Current Challenges
Current Challenges: Data Quality

• Is the quality of the fleet dataset improving?
  • It depends on how we look at it...

• We need a simple way to discuss quality of the dataset...
  • ... that is easy to understand
  • ... that allows comparisons along different axes (time, ownership, agency)
  • ... that helps agencies find and fix causes of quality concerns
Current Challenges: Data Quality – Review Process

• **Agency Submission Review Process**
  - Agency data validated by FAST during submission
  - Agency designates submission as complete
  - FAST team reviews agency submission; provides written feedback
  - Agencies respond to identified areas of concern
  - Agencies granted window to submit corrections

![Pie chart showing FAST FY 2020 Dataset: Dataset Review](chart.png)

**FAST FY 2020 Dataset: Dataset Review**
- No significant issues noted: 19
- Issues: No response: 2
- Issues: No corrections: 10
- Corrections: No significant improvement: 8
Current Challenges: Data Quality – Improving?

FAST FY 2019 Dataset: Dataset Review

- No significant issues noted: 15
- Issues: No response: 10
- Issues: No corrections: 9
- Corrections: No significant improvement: 4
- Corrections: Improvement: 12

FAST FY 2020 Dataset: Dataset Review

- No significant issues noted: 19
- Issues: No response: 10
- Issues: No corrections: 8
- Corrections: No significant improvement: 2
- Corrections: Improvement: 10

FedFleet 2021
Current Challenges: Data Quality – Improving?

• Yes? Larger group of agencies w/o significant issues
  • 19 agencies in FY 2020 vs 4 in FY 2019
  • More agencies participating in review / feedback / correction process

• No? Agencies with issues had more issues
  • More issues identified in the dataset as a whole
  • Driven by challenges of FY 2020?

• We want a clearer way to characterize quality
Current Challenges: Data Quality – A Metric

- **Data quality metric:** Quality Concerns per Vehicle (CpV)

- **Aggregates concerns across multiple areas**
  - Year-to-year continuity of reporting
  - Reasonability of key vehicle attributes
  - Completeness of data (e.g., missing vehicles, presence of “placeholder” attributes)

- ... divided by # of vehicles

- Easy to understand and compare
Current Challenges: Data Quality – A Metric


Agencies have been anonymized
Current Challenges: Data Quality – A Metric

Agencies have been anonymized
Current Challenges: Data Quality – A Metric

FAST FY 2020 Dataset: Quality Concerns by Concern Class

Agencies have been anonymized
Current Challenges: Data Quality – Placeholders

FAST FY 2020 Dataset: Vehicle Fuel Volume and Miles

Current Challenges: Data Quality – Placeholders

FAST FY 2020 Dataset: Vehicle Fuel Volume and Miles

- Diagonal “banding” (identical fuel efficiencies)
- Vertical “banding” (identical miles with varying fuel volumes)

Current Challenges: Data Quality – Placeholders

Fast FY 2020 Dataset: Vehicle Fuel Volume and Miles

Future Directions
Future Directions

• Continued emphasis on quality of fleet data
  • Assessing
  • Understanding
  • Improving

• Increased interest in fleet data
Future Directions

• Streamlining / accelerating / simplifying fleet data collection and reporting
  • Better source data
    • Expanded use of vehicle telematics
    • Expanded integration of systems/processes upstream of fleet MISs

• Shorter reporting / review / feedback timelines
  • Maturing reporting processes and tools within agencies
  • Improved feedback to agencies
  • Virtuous impact of improved data quality: improving quality simplifies reporting
  • Automation of reporting?
Contacts & Resources

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