City of Dallas

1500 Marilla Street,
Council Chambers, 6th Floor
Dallas, Texas 75201

Public Notice

211102

Environment and Sustainability Committee

January 3, 2022

9:00 AM

The Environment and Sustainability Committee will be held by videoconference and in the City Hall Council Chambers (6th Floor).

Members of the public are encouraged to attend the meeting virtually. However, City Hall is available for those wishing to attend the meeting in person following all current pandemic-related public health protocols.

The meeting will be broadcast live on Spectrum Cable Channel 16 and online at https://bit.ly/cityofdallastv.

The public may also listen to the meeting as an attendee at the following videoconference link.

2021 CITY COUNCIL APPOINTMENTS

COUNCIL COMMITTEE	
ECONOMIC DEVELOPMENT Atkins (C), Arnold (VC), McGough, Narvaez, Resendez, West, Willis	**ENVIRONMENT AND SUSTAINABILITY** Blackmon(C), Ridley (VC), Arnold, Bazaldua, Resendez, Schultz, West
GOVERNMENT PERFORMANCE AND FINANCIAL MANAGEMENT Mendelsohn (C), Willis (VC), Atkins, Bazaldua, McGough, Ridley, West	**HOUSING AND HOMELESSNESS SOLUTIONS** Thomas (C), Moreno (VC), Arnold, Blackmon, Mendelsohn, Ridley, Schultz
PUBLIC SAFETY McGough (C), Mendelsohn (VC), Atkins, Moreno, Resendez, Thomas, Willis	**QUALITY OF LIFE, ARTS, AND CULTURE** Bazaldua (C), West (VC), Arnold, Blackmon, Narvaez, Ridley, Thomas
TRANSPORTATION AND INFRASTRUCTURE Narvaez (C), Atkins (VC), Bazaldua, Mendelsohn, Moreno, Schultz, Willis	**WORKFORCE, EDUCATION, AND EQUITY** Schultz (C), Thomas (VC), Blackmon, McGough, Moreno, Narvaez, Resendez
AD HOC JUDICIAL NOMINATING COMMITTEE Resendez (C), Arnold, Bazaldua, Ridley, Thomas,West, Willis	**AD HOC LEGISLATIVE AFFAIRS** Atkins (C), McGough, Mendelsohn, Narvaez, Willis
AD HOC COMMITTEE ON COVID-19 RECOVERY AND ASSISTANCE Thomas (C), Atkins, Mendelsohn, Moreno, Ridley	**AD HOC COMMITTEE ON GENERAL INVESTIGATING & ETHICS** Mendelsohn (C), Atkins, Blackmon, McGough, Schultz

(C) – Chair, (VC) – Vice Chair

Handgun Prohibition Notice for Meetings of Governmental Entities

"Pursuant to Section 30.06, Penal Code (trespass by license holder with a concealed handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a concealed handgun."

"De acuerdo con la sección 30.06 del código penal (ingreso sin autorización de un titular de una licencia con una pistola oculta), una persona con licencia según el subcapítulo h, capítulo 411, código del gobierno (ley sobre licencias para portar pistolas), no puede ingresar a esta propiedad con una pistola oculta."

"Pursuant to Section 30.07, Penal Code (trespass by license holder with an openly carried handgun), a person licensed under Subchapter H, Chapter 411, Government Code (handgun licensing law), may not enter this property with a handgun that is carried openly."

"De acuerdo con la sección 30.07 del código penal (ingreso sin autorización de un titular de una licencia con una pistola a la vista), una persona con licencia según el subcapítulo h, capítulo 411, código del gobierno (ley sobre licencias para portar pistolas), no puede ingresar a esta propiedad con una pistola a la vista."

"Pursuant to Section 46.03, Penal Code (places weapons prohibited), a person may not carry a firearm or other weapon into any open meeting on this property."

"De conformidad con la Sección 46.03, Código Penal (coloca armas prohibidas), una persona no puede llevar un arma de fuego u otra arma a ninguna reunión abierta en esta propiedad."

Note: A quorum of the Dallas City Council may attend this Council Committee meeting.

Call to Order

MINUTES

A. 22-279 Approval of the December 7, 2021 Committee Minutes

Attachments: Minutes

BRIEFING ITEMS

B. 22-280 Sidewalk Plan Update
[Jenny Nicewander, Assistant Director, Department of Public Works, and Efrain Trejo, Senior Program Manager, Department of Public Works]

Attachments: Presentation

C. 22-281 Fleet Conversion Plan Update
[Donzell Gibson, Director, Equipment and Fleet Management Department and Ken Kelly, Chief Engineer, Commercial Vehicle Electrification Center for Integrated Mobility Sciences National Renewable Energy Laboratory]

Attachments: Presentation

D. 22-282 Environment Commission Update
[Kathryn Bazan, Vice-Chair, Environmental Commission]

BRIEFING MEMORANDUM

E. 22-283 Leaf Blower Update Memo
[Susan Alvarez, Assistant Director, Environmental Quality & Sustainability]

Attachments: Memorandum

ADJOURNMENT

EXECUTIVE SESSION NOTICE

A closed executive session may be held if the discussion of any of the above agenda items concerns one of the following:

1. seeking the advice of its attorney about pending or contemplated litigation, settlement offers, or any matter in which the duty of the attorney to the City Council under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with the Texas Open Meetings Act. [Tex. Govt. Code §551.071]

2. deliberating the purchase, exchange, lease, or value of real property if deliberation in an open meeting would have a detrimental effect on the position of the city in negotiations with a third person. [Tex. Govt. Code §551.072]

3. deliberating a negotiated contract for a prospective gift or donation to the city if deliberation in an open meeting would have a detrimental effect on the position of the city in negotiations with a third person. [Tex. Govt. Code §551.073]

4. deliberating the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; or to hear a complaint or charge against an officer or employee unless the officer or employee who is the subject of the deliberation or hearing requests a public hearing. [Tex. Govt. Code §551.074]

5. deliberating the deployment, or specific occasions for implementation, of security personnel or devices. [Tex. Govt. Code §551.076]

6. discussing or deliberating commercial or financial information that the city has received from a business prospect that the city seeks to have locate, stay or expand in or near the city and with which the city is conducting economic development negotiations; or deliberating the offer of a financial or other incentive to a business prospect. [Tex Govt. Code §551.087]

7. deliberating security assessments or deployments relating to information resources technology, network security information, or the deployment or specific occasions for implementations of security personnel, critical infrastructure, or security devices. [Tex Govt. Code §551.089]

City of Dallas

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Agenda Information Sheet

File #: 22-279 **Item #:** A.

Approval of the December 7, 2021 Committee Minutes

Environment and Sustainability Committee
Meeting Record

The Environment and Sustainability Committee meetings are recorded. Agenda materials are available online at www.dallascityhall.com.

Meeting Date: December 7, 2021 **Convened:** 9:01 a.m. **Adjourned:** 11:12 a.m.

Committee Members Present:
Paula Blackmon, Chair
Paul E. Ridley, Vice Chair
Carolyn King Arnold
Adam Bazaldua
Jaime Resendez
Jaynie Schultz
Chad West

Committee Members Absent:

Other Council Members Present:

Presenters:
Susan Alvarez, Assistant Director, Office of Environmental Quality & Sustainability
Pharr Andres, Sr. Climate Coordinator, Environmental Quality & Sustainability
Lori Clark, Program Manager, DFW Clean Cities Coordinator
Celina Bonugli, Associate, Clean Energy Innovation, World Resources Institute

AGENDA

Call to Order (9:01 a.m.)

A. Approval of the November 1, 2021 Environmental and Sustainability Committee Minutes
Presenter(s): Paula Blackmon, Chair
Action Taken/Committee Recommendation(s): A motion was made to approve the minutes for the November 1, 2021 Environmental and Sustainability Committee meeting.

Motion made by: Jaynie Schultz
Item passed unanimously: X
Item failed unanimously:

Motion seconded by: Chad West
Item passed on a divided vote:
Item failed on a divided vote:

B. Analysis of Electric Vehicle Charging Infrastructure in the City of Dallas
Presenter(s): Lori Clark, Program Manager, DFW Clean Cities Coordinator
Action Taken/Committee Recommendation(s): The Committee discussed: Multifamily units, provision of electric charging facilities at places of employment. Strategy to incentivize or educate about possible benefits of building charging stations. Rule on how many outlets are needed per 1,000 vehicles. Overlays to parking requirements to increase the number of charging ports. Marketing of these infrastructure investments. Possible incentives for lower-income residents with the acquisition of electric vehicles. Pricing on public accessible charging stations.

Motion made by: Paul E. Ridley
Item passed unanimously: X

Motion seconded by: Jaynie Schultz
Item passed on a divided vote:

Item failed unanimously: Item failed on a divided vote:

C. Leaf Blower Regulations

Presenter(s): Susan Alvarez, Assistant Director, Office of Environmental Quality & Sustainability

Action Taken/Committee Recommendation(s): The Committee discussed: Status of the Environmental Commission. Investigation of alternative or electric-powered leaf blowers with regards to their practical use. Ordinances against leaf blowers that are outright bans on two-cylce motors in other cities. Pilot program and the requirement for business owners to invest in new equipment. Feedback from landscape workers. Other lawn equipment that could possibly be considered within these proposed regulations. Educational campaign for homeowners regarding the benefits of adopting the use of electric equipment. Enforcement mechanisms if ordinance was to go into effect. Possible inefficiencies inherent with electric equipment might reduce the effectiveness of various departments, such as Parks, with regards to general park maintenance and other landscaping projects. The crafting of an ordinance that does not unduly add to the responsibilities of DPD or Code with regards to enforcement. A motion was made to send the proposal back to the Environmental Commission to consider all two-cycle lawn equipment and revisiting the discussion in September 2022 QOALC Committee meeting.

Motion made by: Adam Bazaldua — Motion seconded by: Jaynie Schultz
Item passed unanimously: X — Item passed on a divided vote:
Item failed unanimously: — Item failed on a divided vote:

D. Policy Utility Commission Power Market Re-Design Comments

Presenter(s): Celina Bonugli, Associate, Clean Energy Innovation, World Resources Institute and Susan Alvarez, Assistant Director, Office of Environmental Quality & Sustainability

Action Taken/Committee Recommendation(s): The Committee discussed: The responsibility of ERCOT to ensure that cities with rolling blackouts are occurring on an equitable basis and that status updates pertaining to the blackouts is provided. A motion was made to approve the collection of comments and sending on behalf of the Ciyt of Dallas.

Motion made by: Adam Bazaldua — Motion seconded by: Jaynie Schultz
Item passed unanimously: X — Item passed on a divided vote:
Item failed unanimously: — Item failed on a divided vote:

E. TCEQ Texas Volkswagen Environmental Mitigation Program Grant Summary Memo

Presenter(s): Pharr Andres, Sr. Climate Coordinator, Environmental Quality & Sustainability

Action Taken/Committee Recommendation(s): The Committee discussed:

Motion made by: — Motion seconded by:
Item passed unanimously: — Item passed on a divided vote:
Item failed unanimously: — Item failed on a divided vote:

Adjourn (11:12 a.m.)

APPROVED BY:
Paula Blackmon, Chair
Environment & Sustainability Committee

ATTESTED BY:
Juan Garcia, Committee Coordinator
Environment & Sustainability Committee

City of Dallas

1500 Marilla Street
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Agenda Information Sheet

File #: 22-280 **Item #:** B.

Sidewalk Plan Update
[Jenny Nicewander, Assistant Director, Department of Public Works, and Efrain Trejo, Senior Program Manager, Department of Public Works]

City of Dallas

Dallas Sidewalk Master Plan (DSWMP) Update

Environment & Sustainability
January 3, 2022

Jennifer Nicewander, P.E., Assistant Director
Efrain Trejo, Senior Program Manager
Department of Public Works
City of Dallas

Dallas Sidewalk Master Plan (DSWMP)

- Background
- Purpose
- Goals and Objectives
- Prioritization
- Focus Areas
- Action Plan
- Discussion / Questions

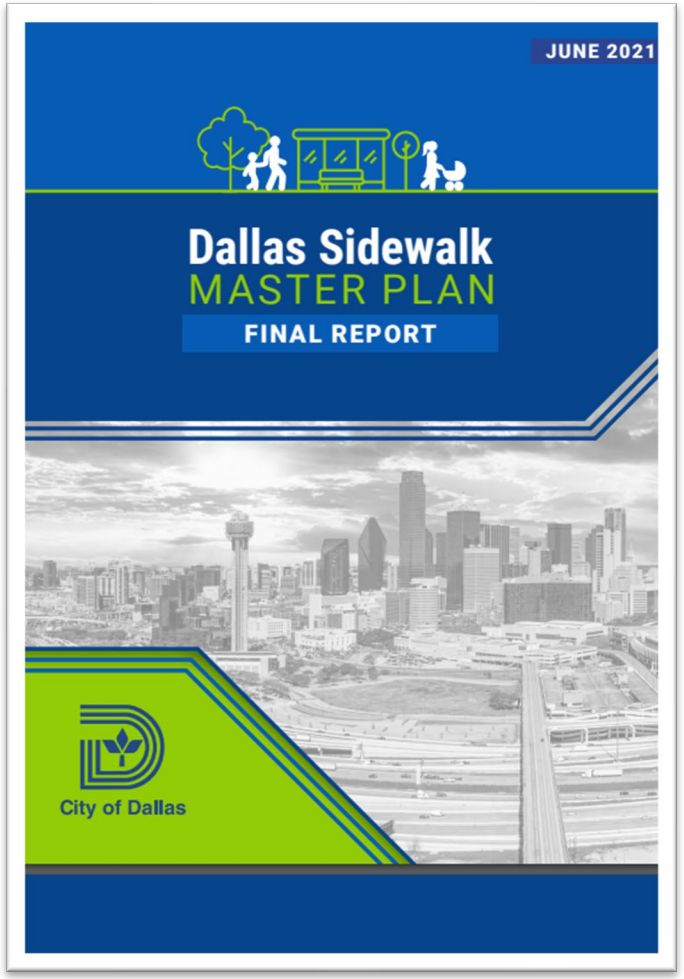
Background

- On August 26, 2021, City Council authorized a contract with Kimley Horn and Associates, Inc. for the development of the City of Dallas' first Sidewalk Master Plan.
- Through six driving principles, the intent of the Sidewalk Master Plan was to developed a data-driven system to identify the most impactful projects to increase accessibility for pedestrians and improve safety for all residents throughout the City.

Background

- During development of the Sidewalk Master Plan, the Department of Public Works provided the following updates:
  - Briefing
    - TRNI Committee on April 19, 2021
  - City Council Memorandums
    - August 21, 2020
    - October 23, 2020
    - February 12, 2021

Background



- In June 2021, the Department of Public Works in collaboration with Kimley-Horn, consultant completed the Dallas Sidewalk Master Plan.
- The Department of Public Works briefed the City Council on July 16, 2021, and November 16, 2021.

Purpose

- The Dallas Sidewalk Master Plan (DSWMP)
  - A Plan to move Dallas forward in improving pedestrian usability.
  - Process to identify and prioritize the most impactful projects from a $2B citywide sidewalk need.
  - Provide guidance for decision makers on budgeting for both new construction and sidewalk repairs.

Goals and Objectives

- This Plan is aligned with the six principles that guided Connect Dallas; the City's latest Strategic Mobility Plan adopted in April 2021.
- Driving Principles
  - Safety
  - **Environmental Sustainability**
  - Equity
  - Economic Vitality
  - Housing
  - Innovation

Goals and Objectives

- Driving Principles

Safety - Improve safety for all modes of transportation.

Environmental Sustainability - Reduce vehicle miles traveled and provide a variety of travel options to encourage residents to travel by transit, biking, or walking, to reduce greenhouse gas emissions.

Equity - Provide safe, affordable access to opportunities for all city residents.

Economic Vitality - Integrate transportation investments with land use and economic priorities to improve quality of life.

Housing - Support the creation of affordable and varied housing options that meet the city's growing needs.

Innovation - Leverage existing and emerging technologies to meet 21st century challenges.

Goals and Objectives

- All six-driving principle were given 1-2 goals and objectives to articulate achievements

ENVIRONMENTAL SUSTAINABILITY

Goals

- Support the Dallas Comprehensive Environmental and Climate Action Plan by reducing the number of trips taken in Single Occupancy Vehicles.

Policy Objectives

- Increase the proportion of the population that walks to work.
- Improve walk access to transit including high-speed rail.

Prioritization

- A system of prioritization was used to ensure that the areas with the highest needs are being addressed first:
  - Activity Areas
  - Pedestrian Safety
  - Citizen Request
  - Street Classification
  - Equity
  - Places of Public Accommodation

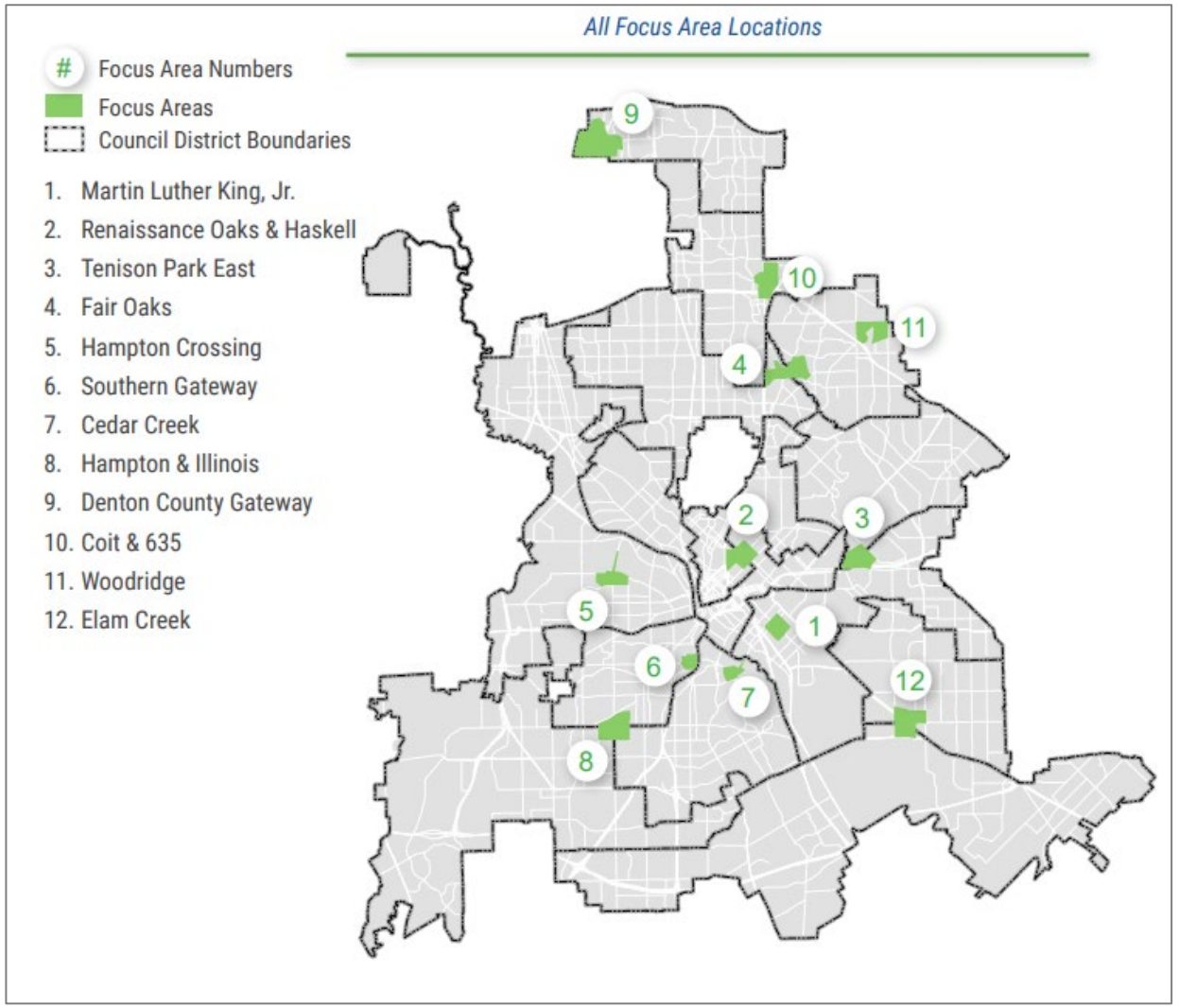
Prioritization

- Core Methodologies

- Places of Public Accommodation - 20%
- Equity - 20%
- Street Classification - 10%
- Citizen Request - 10%
- Pedestrian Safety - 10%
- Activity Areas - 30%

Focus Areas

- Using the established weighted criteria, the Dallas Sidewalk Master Plan identified 12 Focus Areas with $30M of priority sidewalk projects.
- These projects are the most impactful and would address the highest amount of needs.



Action Plan

- Over three years (FY21-23), a total of $14.7M will be allocated towards the Sidewalk Master Plan's 12 Focus Areas.
  - As part of the action plan, Public Works has planned 41priority projects to deliver approximately 33 miles of sidewalk improvements.
  - The 41 projects will include works in all 14 City Council Districts and all 12 Focus Areas.

Action Plan

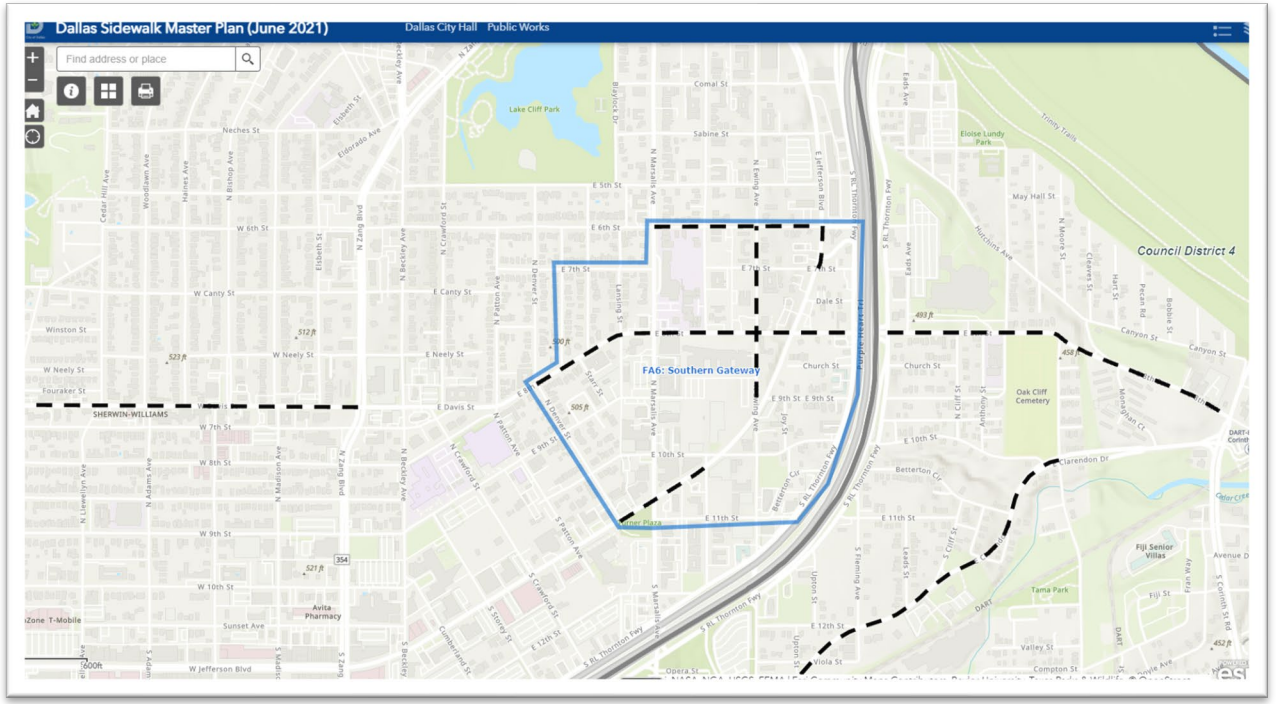
- Additional future funding will go towards the remaining $30M inventory identified in the Sidewalk Master Plan's 12 Focus Areas.
- In FY21, Public Works programmed $4.7M to implement the Sidewalk Master Plan; and the adopted and planned budgets for FY2022 and FY2023 include $10M.

Action Plan

- The budget for FY22 includes $5M, which equates to approximately 13 miles of sidewalk improvements focused on priority projects included in the Sidewalk Master Plan's 12 Focus Areas.
- As part of the implementation process, a five-year plan has programmed $27.5M to deliver roughly 57 miles of sidewalk improvements.
- This is a living document that will be updated as the initial $30M of projects are completed.

Action Plan

- Dallas Sidewalk Master Plan – Project Website Application
  - Project tracking system showing sidewalk improvement projects



https://dallasgis.maps.arcgis.com/apps/webappviewer/index.html?id=7420defba9314eba94ab55641b895196

Discussion / Questions

City of Dallas

Dallas Sidewalk Master Plan (DSWMP) Update

Environment & Sustainability
January 3, 2022

Jennifer Nicewander, P.E., Assistant Director
Efrain Trejo, Senior Program Manager
Department of Public Works
City of Dallas

Agenda Information Sheet

File #: 22-281 **Item #:** C.

Fleet Conversion Plan Update
[Donzell Gibson, Director, Equipment and Fleet Management Department and Ken Kelly, Chief Engineer, Commercial Vehicle Electrification Center for Integrated Mobility Sciences National Renewable Energy Laboratory]

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

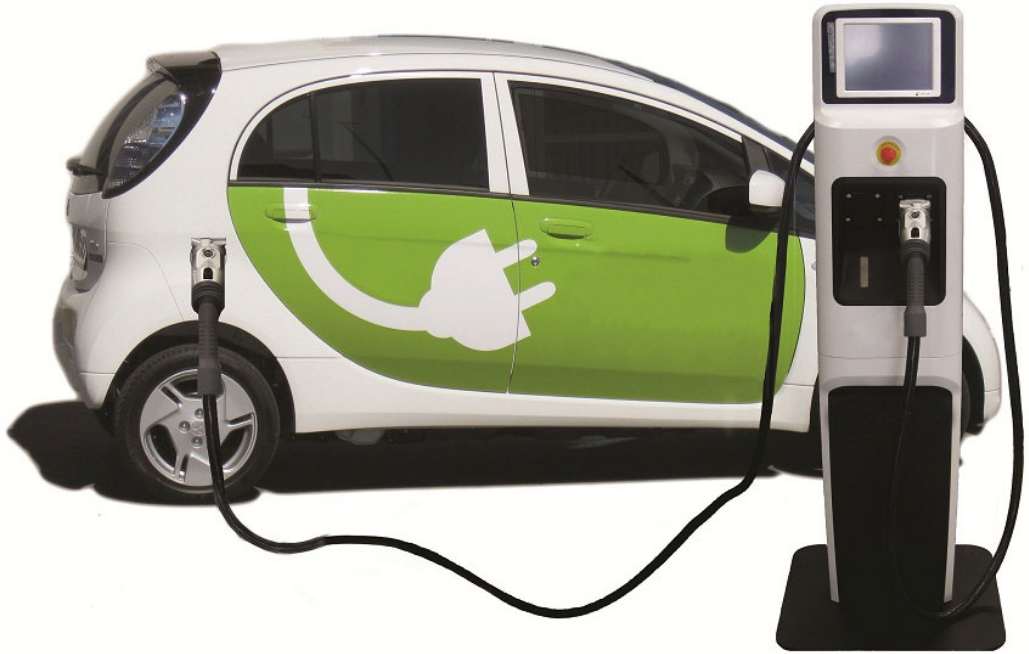
City of Dallas
Fleet Electrification Analysis Update

National Renewable Energy Laboratory
Ken Kelly, Cory Sigler, Matt Jeffers

January 3, 2022

Photo by Gabriel Tovar on Unsplash

Presentation Overview



- Update on City Fleet Electrification Study
- CECAP Action T1 - Supporting Fleet Electrification
- FY 20-21 - Budget Amendment to support CECAP Implementation ($200,000)
- NREL Contract – Council Approval in May 2021
- Project Kickoff in August 2021

NREL at a Glance

2,050

Employees,
plus more than
400
early-career researchers
and visiting scientists

World-class
facilities, renowned
technology experts

nearly
820

Partnerships
with industry,
academia, and
government

Campus
operates as a
living laboratory

NREL Center for Integrated Mobility Sciences

https://www.nrel.gov/transportation/research.html

Hydrogen and Fuel Cells

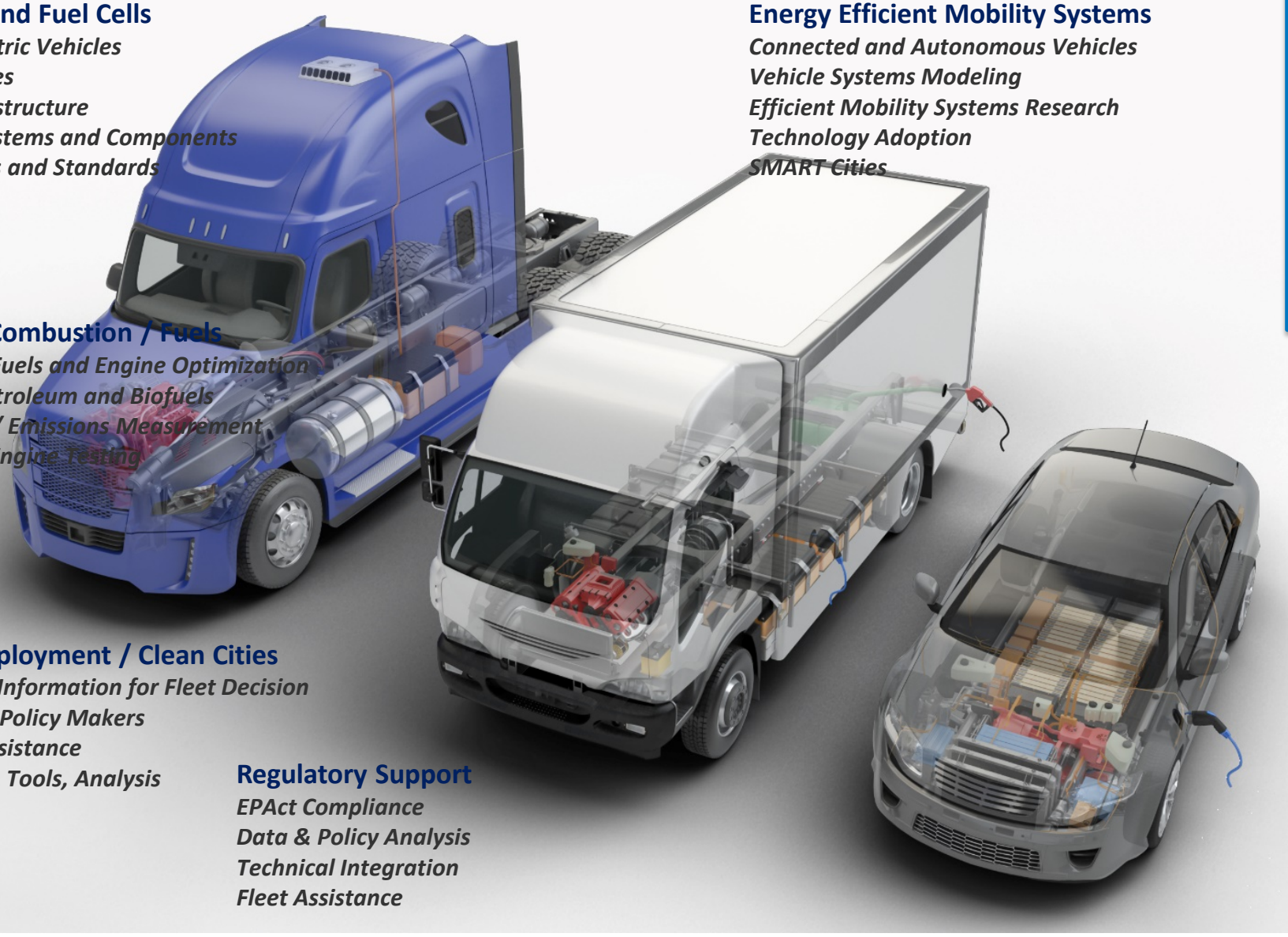
Fuel Cell Electric Vehicles
Fuel Cell Buses
Fueling Infrastructure
Hydrogen Systems and Components
Safety, Codes and Standards

Energy Efficient Mobility Systems

Connected and Autonomous Vehicles
Vehicle Systems Modeling
Efficient Mobility Systems Research
Technology Adoption
SMART Cities

Advanced Combustion / Fuels

CoOptima – Fuels and Engine Optimization
Advanced Petroleum and Biofuels
Combustion / Emissions Measurement
Vehicle and Engine Testing



Vehicle Deployment / Clean Cities

Guidance & Information for Fleet Decision Makers and Policy Makers
Technical Assistance
Online Data, Tools, Analysis

Regulatory Support

EPAct Compliance
Data & Policy Analysis
Technical Integration
Fleet Assistance

Commercial Vehicle Technologies

Technology Field Testing & Analysis
Big Data Collection, Storage & Analysis
Vehicle Systems Modeling
Super Truck and 21st Century Truck
Truck Platooning and Automation
Vehicle Thermal Management

EV Grid Integration

Extreme Fast Charging – 1+ MW
Vehicle-to-Grid Integration
Integration with Renewables
Charging Equipment & Controls
Fueling Stations & Equipment

Mobility Infrastructure & Impacts Analysis

Hydrogen & Energy Storage Analysis
Integrated Transportation & Energy Systems Analysis

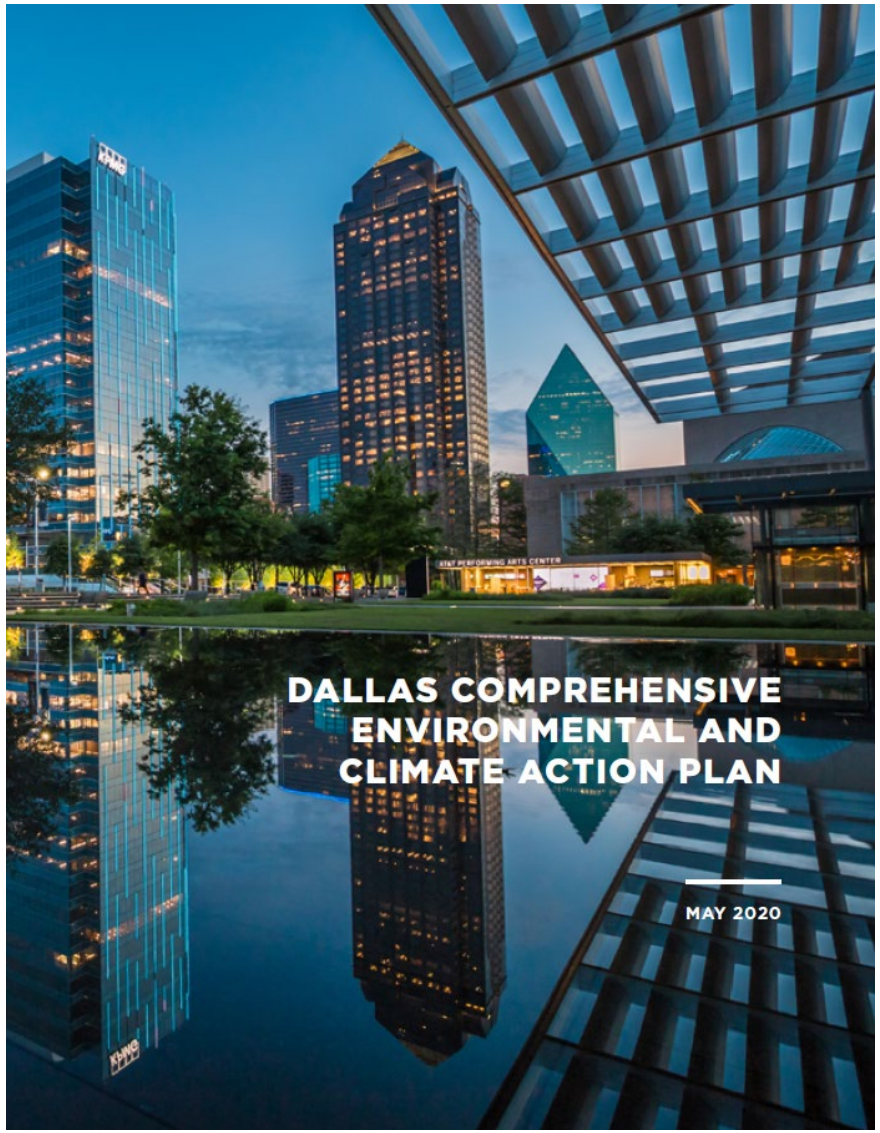
Advanced Energy Storage

Thermal Characterization / Management
Life/Abuse Testing and Modeling
Computer Aided Engineering
Electrode Material Development

Advanced Power Electronics and Electric Motors

Thermal Management
Advanced Heat Transfer
Thermal Stress and Reliability

Dallas Fleet Electrification Goals



- The Intergovernmental Panel on Climate Change (IPCC) recommends **reducing GHG emissions to net zero by 2050** to limit the increase in global temperatures to below 1.5°C.
- The City of Dallas is **committed to meeting the international emission reduction targets** set by the Paris Agreement in 2016.
- The 2015 greenhouse gas (GHG) inventory reported that **35% of Dallas' GHG emissions come from transportation sector.**
- The CECAP provides a roadmap for the City to improve quality of life, **to reduce greenhouse gas emissions**, to prepare for the impacts of climate change, and to create a healthier and more prosperous community.

Dallas Fleet Electrification Goals

TARGETS

INSTALL 1,500 EV CHARGING OUTLETS TO SUPPORT 39,000 VEHICLES THROUGHOUT THE CITY BY 2030.

ALL NEW TRANSIT BUSES AND LIGHT DUTY VEHICLES PURCHASED BY THE CITY, DALLAS SCHOOLS, AND DART AFTER 2030 TO BE FULLY ELECTRIFIED, AND THEN FULL FLEET TRANSITION BY 2040.

SINGLE OCCUPANT VEHICLE TRAVEL MODE SHIFT FROM 88% TO 79% IN 2030 AND 88% TO 62% IN 2050.

SHIFT THE SURFACE TRANSPORTATION SYSTEM TO MOVE PEOPLE AND GOODS IN FUEL-EFFICIENT VEHICLES.

T1. WORK WITH CITY OF DALLAS, DISD, AND DART TO TRANSITION THE BUS AND LIGHT DUTY FLEET TO 100% ELECTRIC BY 2040.

ACTION TYPE
Partnership

ACTION SOURCE
New Action

PRIMARY BENEFIT

Mitigation

CO-BENEFITS

Air Quality

Cost Savings

The City and DART will continue shifting the regional bus and light duty vehicle fleets to 100% EV, transitioning the fleet through new procurement policies and retrofitting older infrastructure and assets to accommodate charging stations on route. The City will work with partners to ensure all new transit buses and light duty vehicles purchased after 2030 will be fully electrified, and then full fleet transition by 2040.

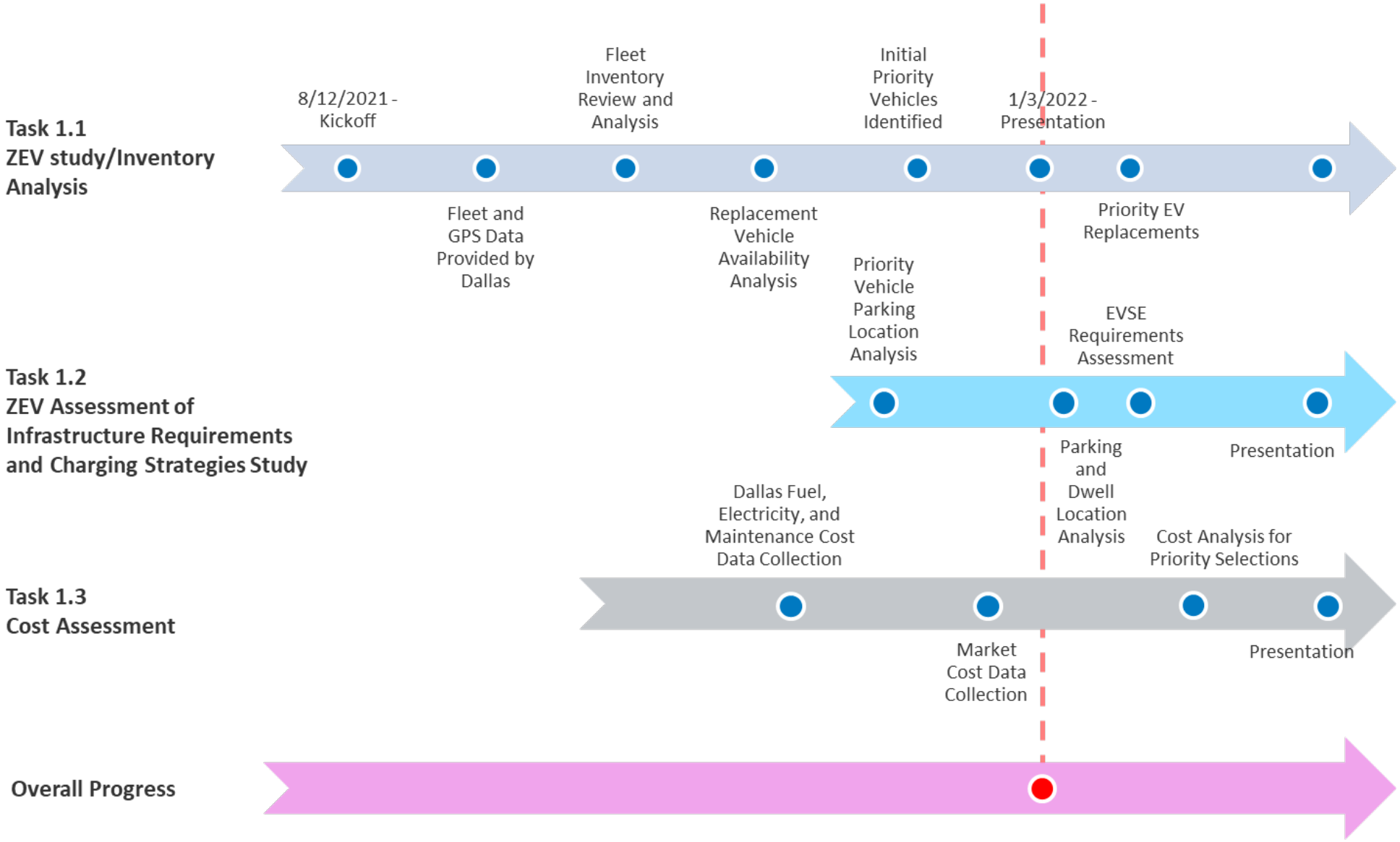
EQUITY CONSIDERATIONS

- This action provides the potential for improved air quality and noise reduction in neighborhoods and communities with more dense and frequent transit service.

Fleet Electrification Considerations

- What are the overall goals of the fleet electrification plan?
- Where are the best opportunities for fuel reduction and emissions reduction?
- Which vehicle duty cycles are suitable for electrification?
- Which vehicles are eligible for electrification (i.e., non-emergency response or special purpose vehicles)
- Which vehicles are nearing retirement or overdue for replacement?
- Which vehicles have an electric model that's commercially available today?
- Which vehicles have dedicated parking spots suitable for charging equipment?
- Which communities or regions of the city stand to benefit the most from lower emissions and improved air quality?

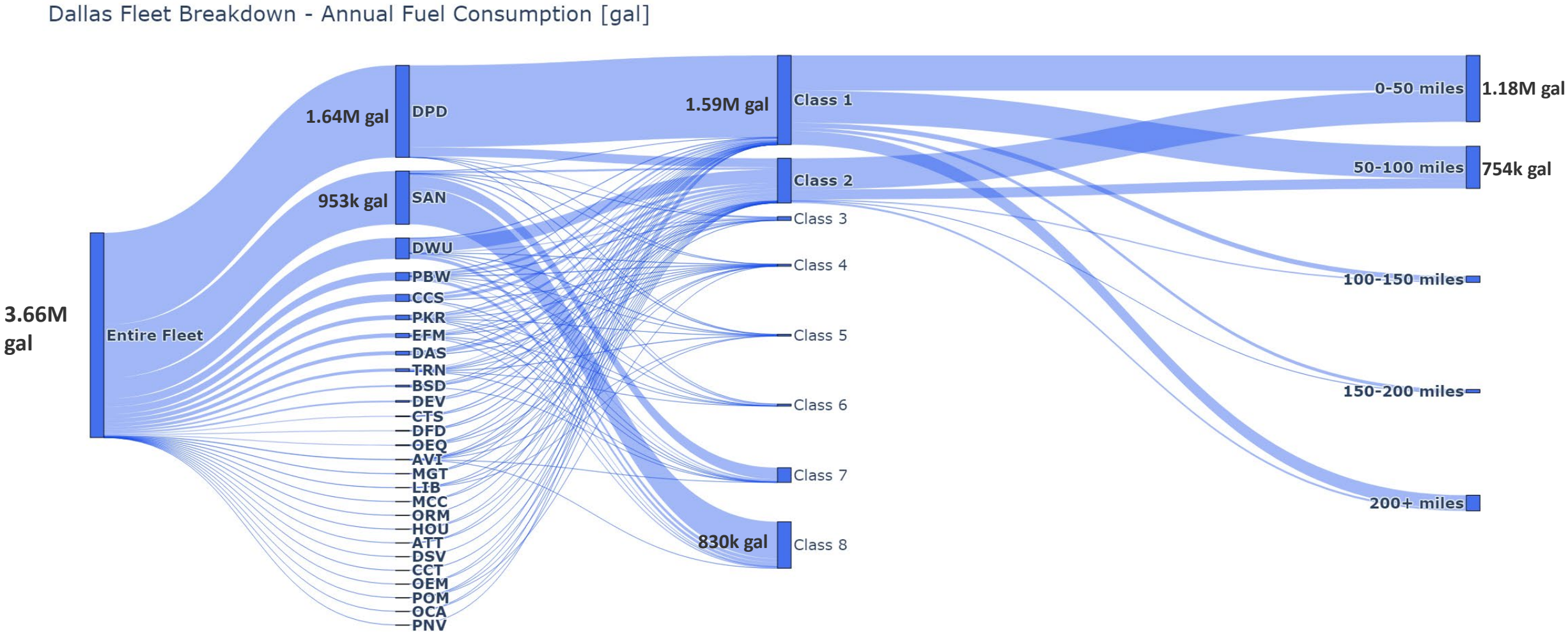
Project Timeline



Dallas Fleet and EV Analysis Summary

Dallas Vehicle Inventory - Sankey Diagram

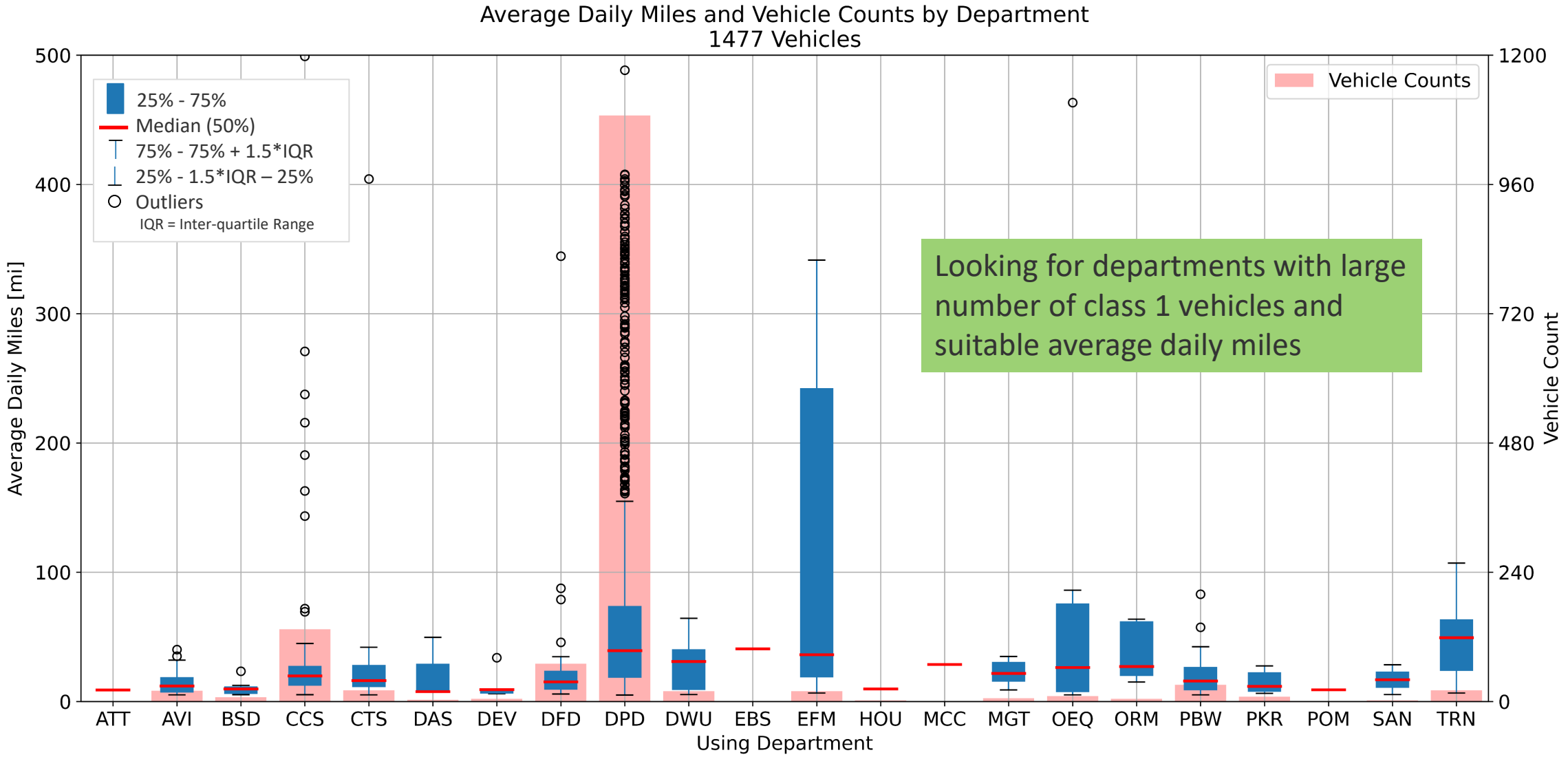
Fleet Breakdown by Annual Fuel Consumption w/ Miles



Open interactive version in browser

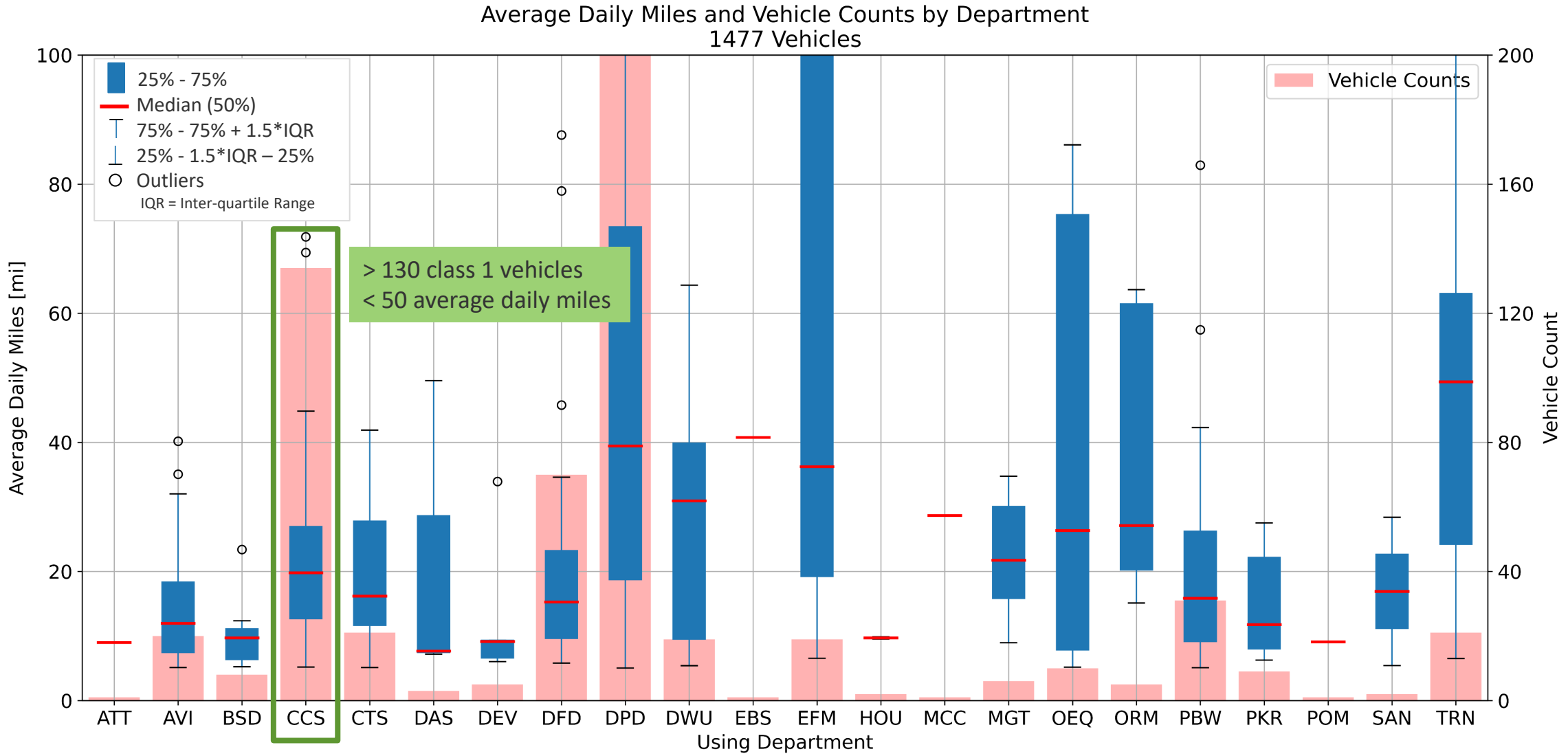
Daily Miles and Vehicle Counts by Department

Class 1



Daily Miles and Vehicle Counts by Department

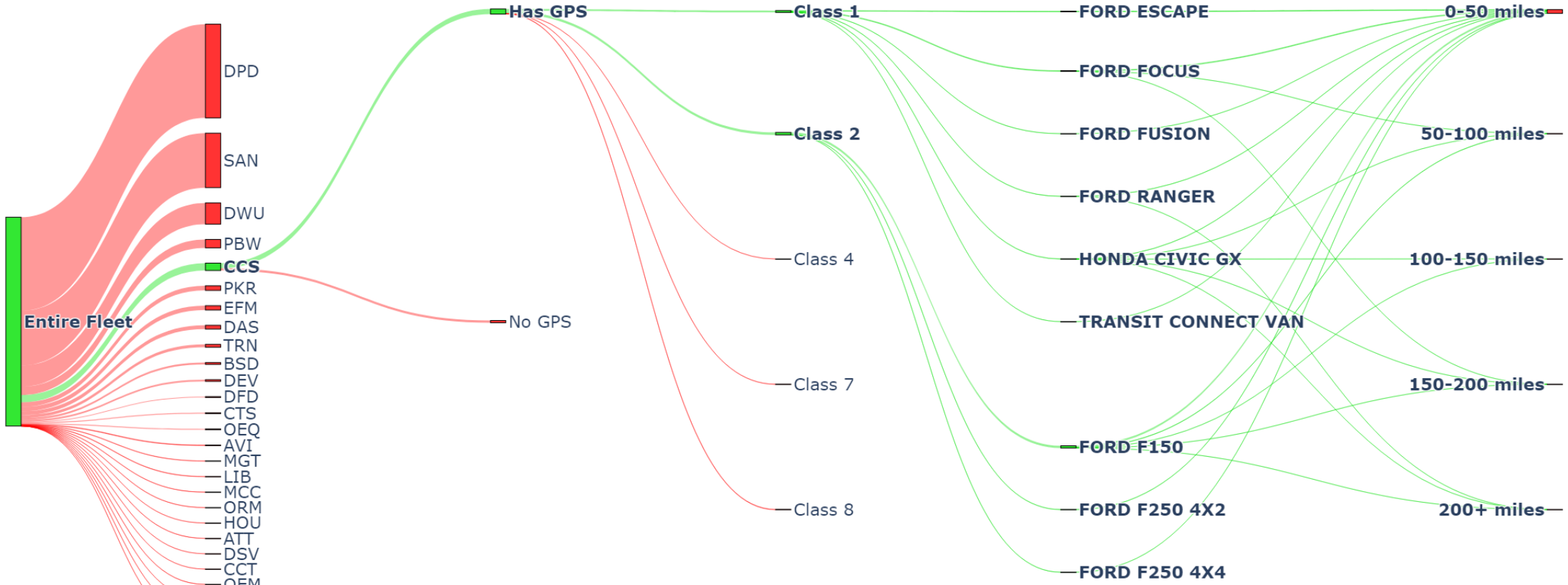
Class 1 - ZOOMED



Dallas Vehicle Inventory - Sankey Diagram

Example Process by Annual Fuel Consumption

Single Department Analysis (CCS) - Annual Fuel Usage [gal]



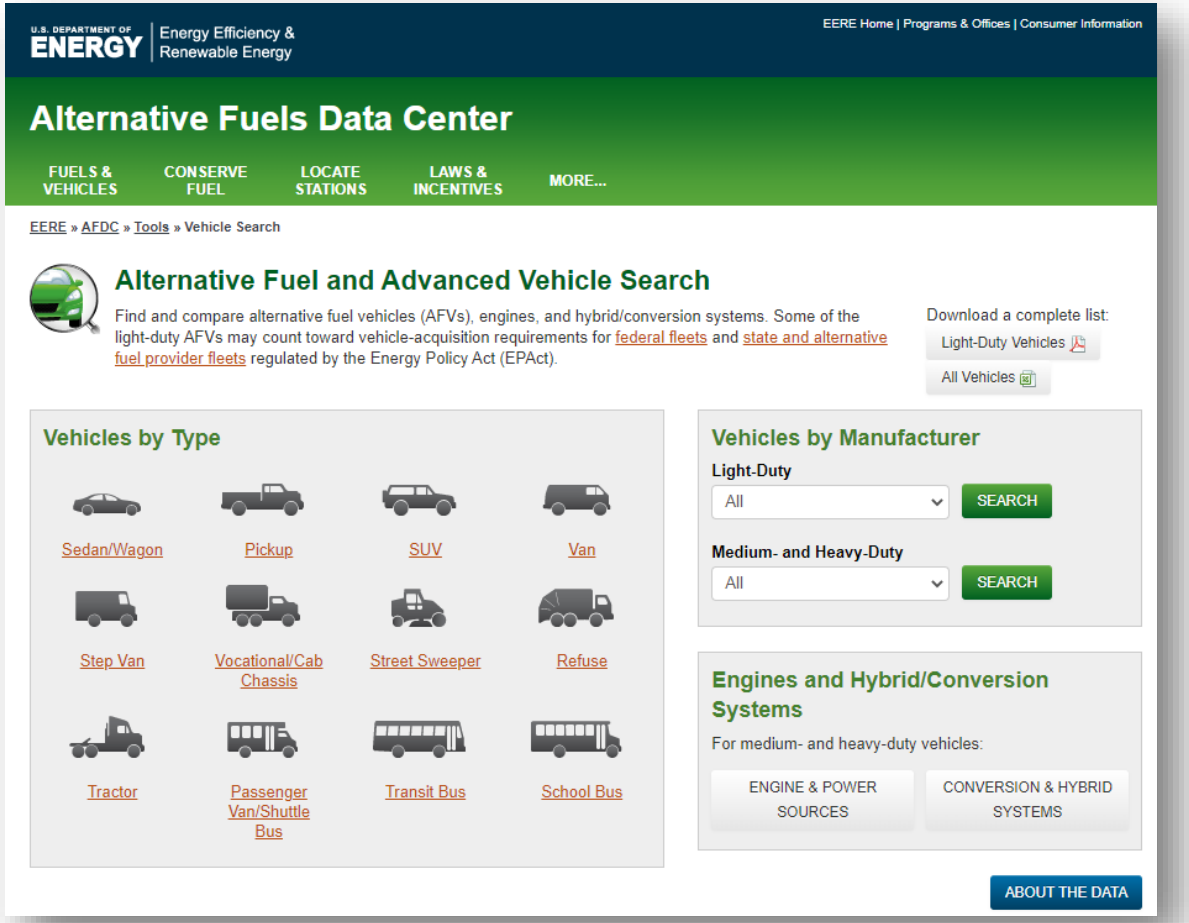
CCS

- Class 1: 128 vehicles, 32,500 gallons
- Class 2: 71 vehicles, 45,100 gallons

Open interactive version in browser

Commercially Available EVs

- Utilized Alternative Fuels Data Center (AFDC) Advanced Vehicle Search tool to find EVs currently on the market
- Filtered list for
  - All-electric (EV)
  - Plug-in hybrid electric (PHEV)



https://afdc.energy.gov/vehicles/search/

AFDC – Electric Vehicles

Sample of EVs available in auto market today

- Class 1 and class 2 vehicles
- EVs and PHEVs
- Excluded high-cost luxury and performance vehicles
- Excluded new and non-mainstream vehicle manufacturers

https://afdc.energy.gov/vehicles/search/

All-Electric (EV)				
Category	**Manufacturer**	**Model**	**Model Years**	**All Electric Range (mi)**
Sedan/Wagon	BMW	I3	2020-2021	153
Sedan/Wagon	Chevrolet	Bolt EV	2020-2022	247-259
Sedan/Wagon	Ford	Mustang Mach-E	2021	211-305
Sedan/Wagon	Hyundai	Ioniq Electric	2020-2021	170
Sedan/Wagon	Kia	Nero Electric	2020-2022	239
Sedan/Wagon	Mini	Cooper SE	2020-2022	110-114
Sedan/Wagon	Nissan	Leaf	2020-2022	149-226
Sedan/Wagon	Tesla	Model 3	2020-2021	220-353
Sedan/Wagon	Volkswagen	e-Golf	2020	123
SUV	Audi	e-tron	2020-2021	218-222
SUV	Hyundai	Kona Electric	2020-2022	258
SUV	Volkswagen	ID.4	2021	250-260
SUV	Volvo	XC40 Recharge	2021-2022	208-223
Van	Ford	Transit (cargo)*	2020	60-120
Van	Ford	Transit (passenger)*	2020	60-120

Plug-in Hybrid Electric (PHEV)				
Category	**Manufacturer**	**Model**	**Model Years**	**All Electric Range (mi)**
Pickup	Ford	F-150*	2020	
Pickup	Ford	Super Duty F-250*	2020	
Sedan/Wagon	Ford	Fusion	2020	26
Sedan/Wagon	Honda	Clarity	2020-2021	48
SUV	Ford	Escape PHEV	2020-2021	37-38
Van	Chysler	Pacifica Hybrid	2020-2021	32

**available with power train developed and installed by an approved qualified vehicle modifier (QVM)*

Emerging Electric Vehicles

Other EV make/models on “watch list”, production models coming soon

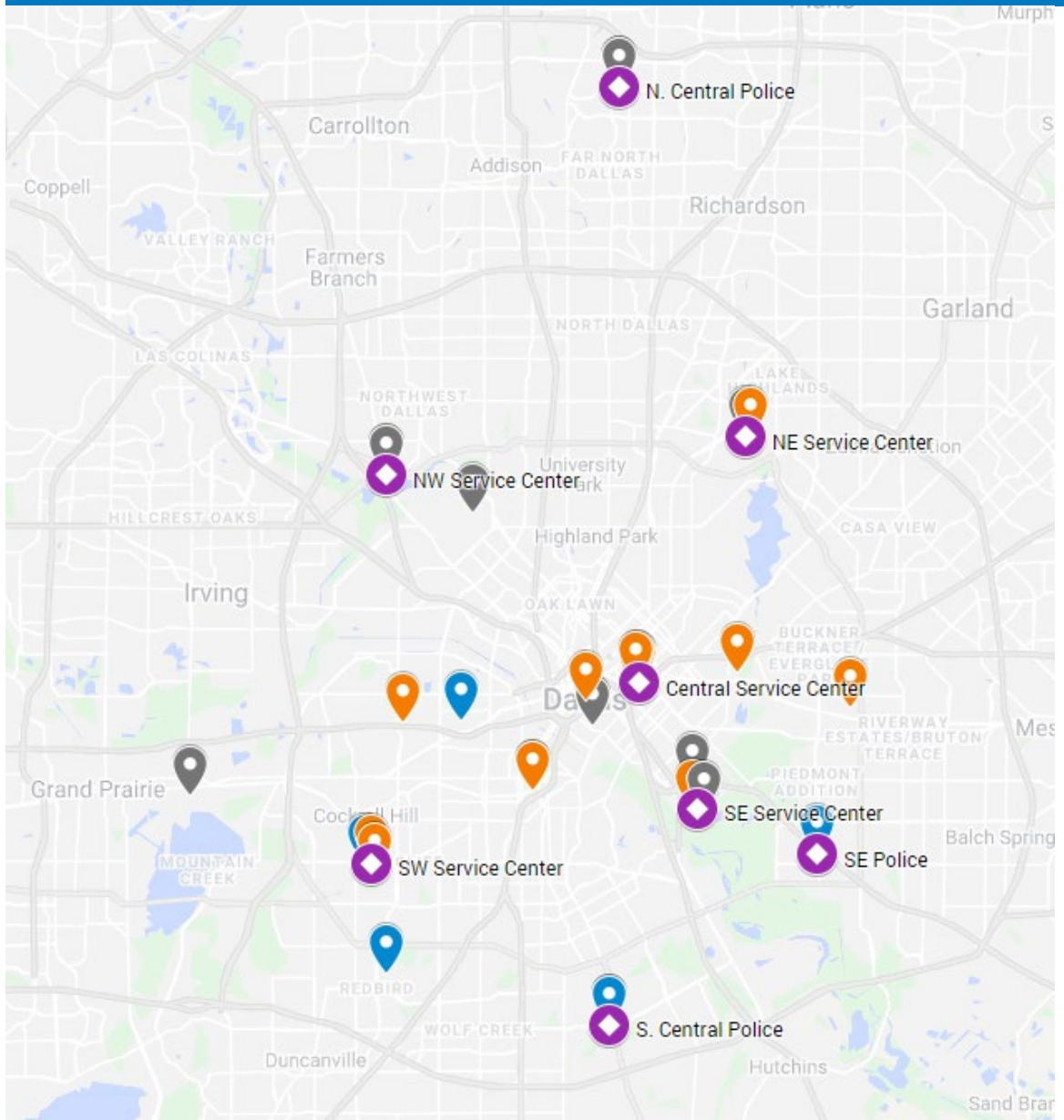
- Ford F150 Lightning EV pickup truck
- Nikola Badger EV pickup truck
- Ford Transit electric van
- Rivian electric van
- GM EV600 electric van

Heavy-Duty EV / PHEV

Heavy-Duty EV / PHEV
- Freightliner eM2
- BYD Refuse Hauler
- Mack LR Refuse Hauler
- Pierce Volterra Pumper

Transit
- Proterra
- BYD
- New Flyer
- Gillig

Charging Infrastructure – Parking & Fueling Locations

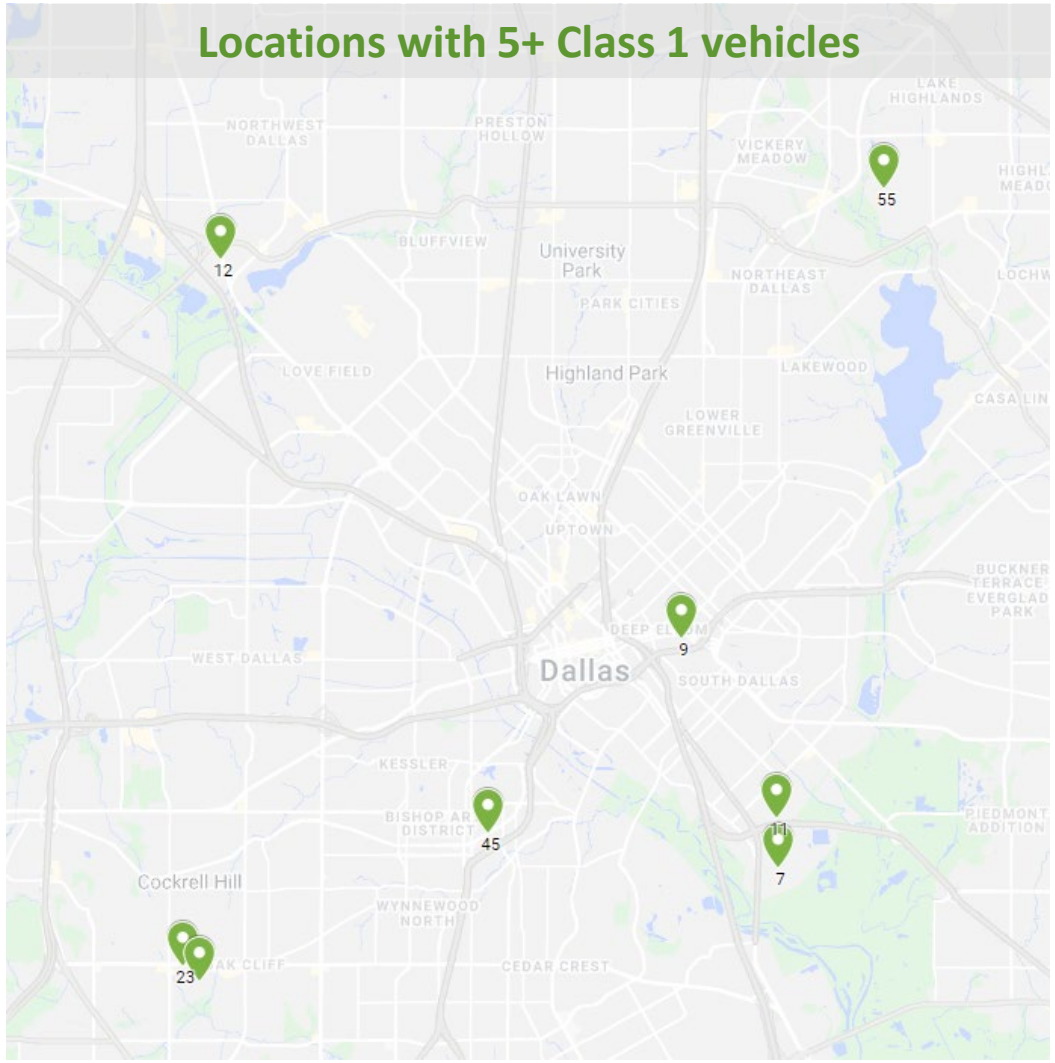


- Reviewed fuel island locations and all parking locations listed in vehicle inventory
  - Identified locations with 5 or more class 1 vehicles
  - Separated PDP locations
  - Following up to refine list and identify duplicate locations

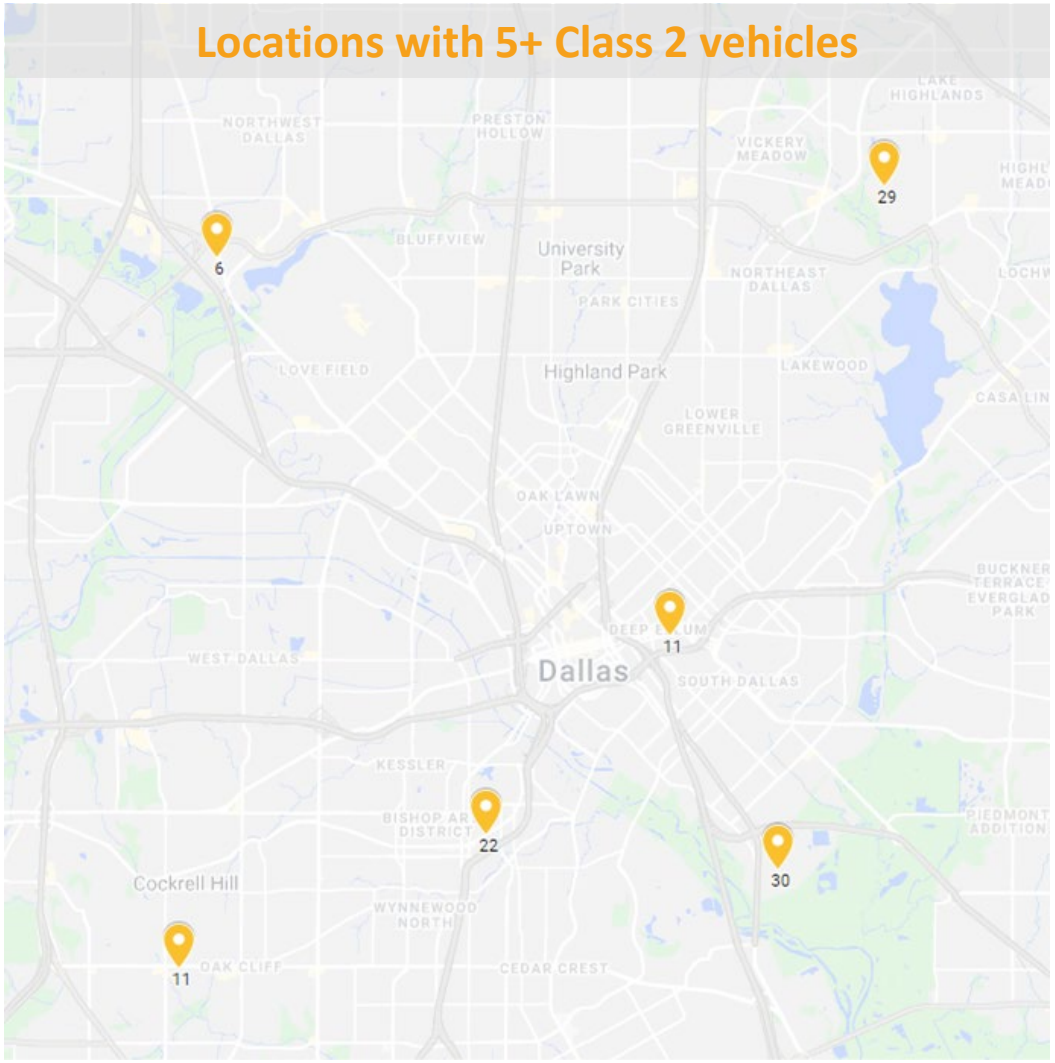
Purple pins – Fueling locations
Blue pins – PDP parking locations
Orange pins – all non-PDP parking locations
Gray pins – other parking (need additional info)

CCS Parking Locations – Class 1 & 2

Locations with 5+ Class 1 vehicles



Locations with 5+ Class 2 vehicles



Initial Qualitative Considerations

Light-Duty EV

- Established market, experience, dealer network
- Standardized EVSE – level II , DC Fast Charge, managed charging
- Likely to find matches with existing LDV functions

Medium-Duty EV

- Emerging product offerings, supply network
- Expected to develop/expand in 2-5 year time frame
- Fleet pickups and vans often require specialty “work” functions

Heavy-Duty EV

- Emerging product offerings, supply network
- Expanded EV products expected in 2-5 year time frame
- Higher charging power / infrastructure investment
- Good opportunity for limited demonstration
- Potential lessons learned from transit EV applications

Initial Takeaways

- ***Data-driven approach*** to fleet electrification strategies
- Dallas light-duty fleet appears suitable for electrification
  - Average daily mileage
  - Suitable EV options to replace LDVs
- ***GPS data needed to verify full range of vehicle operation*** for each application
  - Daily mileage – consistent operation; outlier driving days
  - Driving time vs parked time – vehicle idle operation for “hotel loads”
- **MD/HD initial EV options** available for select vehicle types/vocations to **begin piloting**
  - Need to consider specialty equipment needs of MD/HD vehicles
- Near-term **parallel approach**
  - Deploy commercially available LD EVs and chargers
  - Look for opportunities to demonstrate MD/HD
- Seek **lessons learned** from others
  - Clean Cities – Dallas-Fort Worth Clean Cities and DOE National Clean Cities Network
  - Transit Industry – including DART
  - Other municipal fleets

Next Steps

- Analysis of GPS data to evaluate variability of duty cycles – daily miles distributions, dwell times and locations
- Incorporate replacement criteria to inform priority applications
- Compare vehicle make/model combinations and estimated cost of operation vs. incremental cost
- Evaluate charging infrastructure – priority locations
- Identify near-term EV candidates by fleet based on suitability and replacement criteria
- Quantify fuel / GHG reduction potential

Planned Output

Fleet Inventory

Energy Consumption by Vehicle Type

Identify Priority Vehicles

- Department
- Vehicle Type
- Usage Profile
- EV Availability
- Replacement Criteria
- Parking / Charging Locations

Cost / GHG Impact Estimator

- Vehicle incremental cost
- Incentives
- Energy costs
- Annual Mileage
- Estimated GHG impact

Output Matrix

Listing of Near-Term Candidate EV Replacements

Department
Vehicle ID
Make / Model
Replacement Rank
Annual Mileage
Baseline Energy Consumption
Baseline GHG Production
Replacement Cost
Replacement EV Make / Model
Estimated Energy Consumption
EV Est. Cost
EVSE Est Cost
Est Annual Cost Savings
Est. Annual GHG Savings

Questions or Comments?

Appendix Slides:

- Additional Department Sankey Diagrams by fuel and vehicle counts
- Inventory Distributions by Fleet and Vehicle Type
- Annual Consumption Distributions by Fleet and Vehicle Type
- GPS Data Availability
- Additional Details on Code Compliance Fleet

Scope of NREL Mission

Energy Efficiency

- Residential Buildings
- Commercial Buildings
- Personal and Commercial Vehicles

Renewable Energy

- Solar
- Wind and Water
- Biomass
- Hydrogen
- Geothermal

Systems Integration

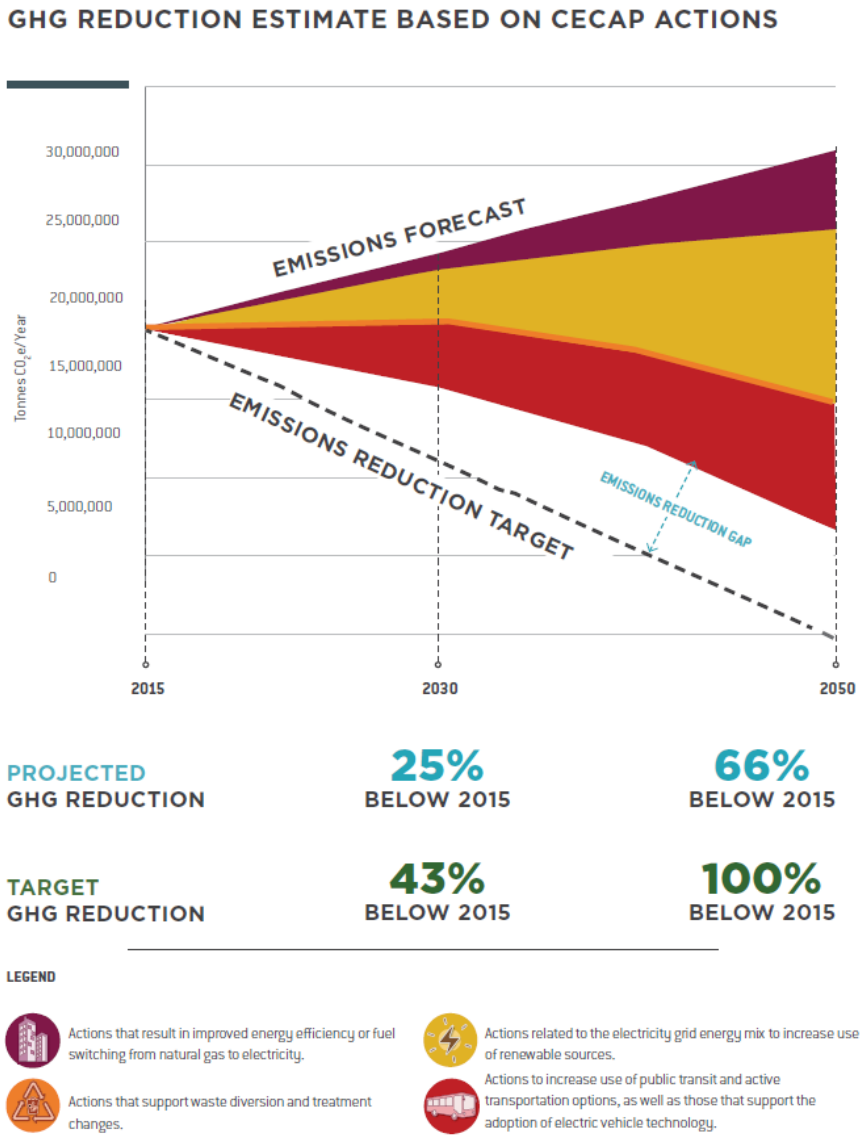
- Grid Infrastructure
- Distributed Energy Interconnection
- Battery and Thermal Storage
- Transportation

Market Focus

- Private Industry
- Federal Agencies
- Defense Dept.
- State/Local Govt.
- International

Dallas Fleet Electrification Goals

- Projected GHG emissions reduction:
  - 25% by 2030
  - 66% by 2050
- Target GHG emissions reduction:
  - 43% by 2030
  - 100% by 2050
- Scenario assumptions
  - Passenger vehicles electrified:
    - 14% by 2030
    - 50% by 2050
  - DART buses electrified:
    - 75% by 2030
    - 100% by 2050
  - ***GHG reductions from federal vehicle fuel efficiency standards:***
    - 2,603,600 MT CO2e/year for 2030
    - 1,536,200 MT CO2e/year for 2050



Dallas Fleet Electrification Goals

- The CECAP comprises 97 actions across eight sectors/goals
  - 45 actions are aimed primarily at reducing GHG emissions
  - 19 actions in transportation sector

WHY TRANSPORTATION MATTERS

- The transportation sector contributes 34% of GHG emissions for the City of Dallas, of which 98% is attributed to on-road transportation.
- Dallas County fails to meet federal air quality standards for ground level ozone, which is a direct result of internal combustion engines, especially gasoline and diesel burning engines.
- **Solutions are aimed at shifting away from single-occupancy commuting, encouraging public transportation, improving vehicle efficiency, and increasing the overall share of electric vehicles.**

WHY AIR QUALITY MATTERS

- Ten counties including Dallas consistently do not meet the 2008 Federal air quality criteria for ground-level ozone.
- Nine counties consistently do not meet the updated 2015 federal standard for ground-level ozone.
- **Reducing pollutants from fossil fuel powered vehicles is likely to have the most impact on poor air quality in Dallas.**

DALLAS' COMMUNITIES HAVE ACCESS TO SUSTAINABLE, AFFORDABLE TRANSPORTATION OPTIONS.

Shift the surface transportation system to move people and goods in fuel-efficient vehicles.

Reduce trips where people drive alone.

Synergize jobs and housing with transportation infrastructure to increase access to walking and biking options, and public transit.

Ensure that walking, biking, public transit, vehicular transportation infrastructure is reliable and safe under all weather conditions.

ALL DALLAS' COMMUNITIES BREATHE CLEAN AIR.

Take a comprehensive approach to addressing air quality at the neighborhood level.

Increase energy efficiency of existing buildings or facilities.

Reduce trips where people drive alone.

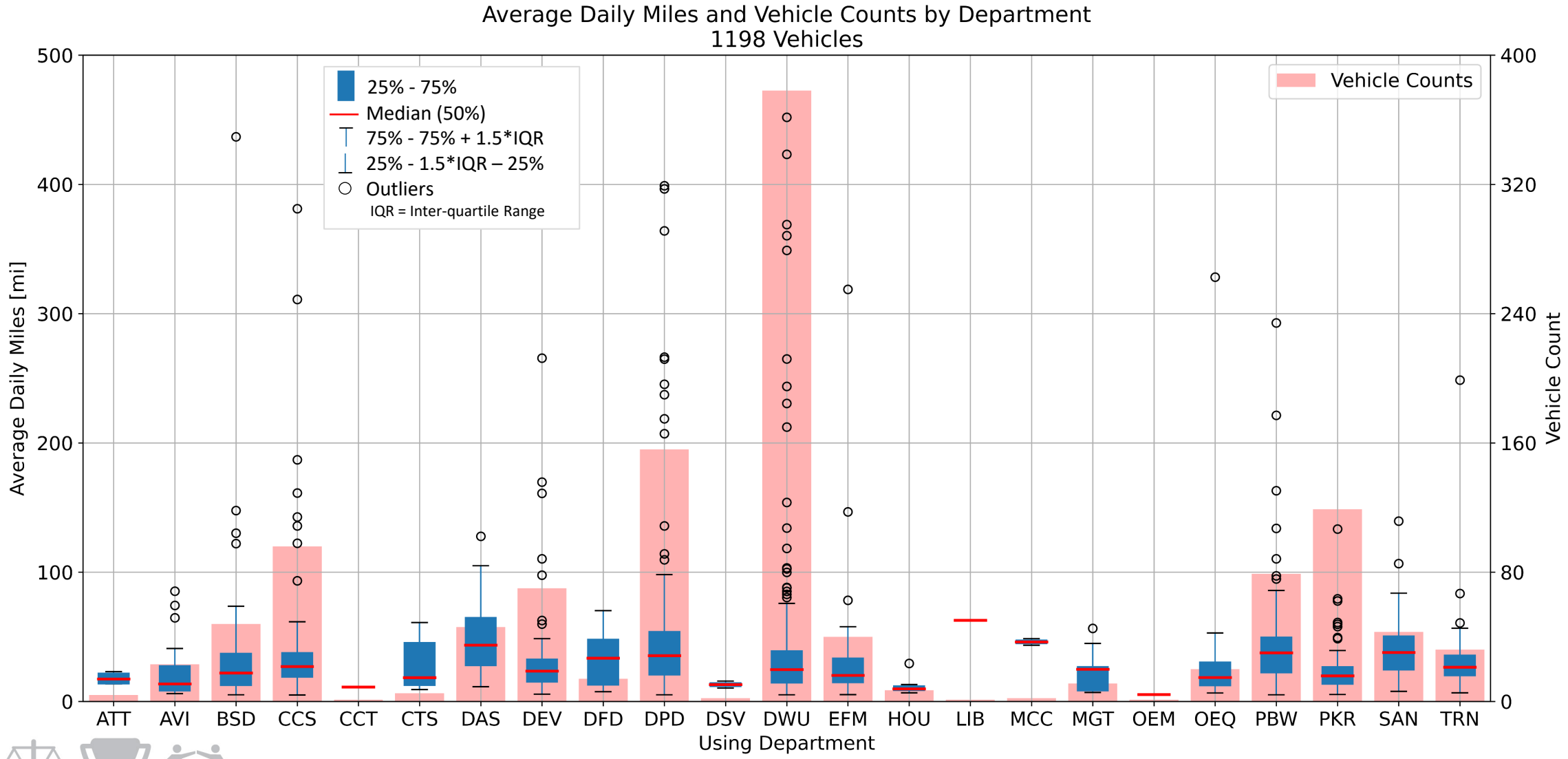
Synergize jobs and housing with transportation infrastructure to increase access to walking and biking options, and public transit.

Increase, enhance and maintain healthy forests, parks, and green spaces, that improve air quality.

Operate a clean, green and efficient waste system.

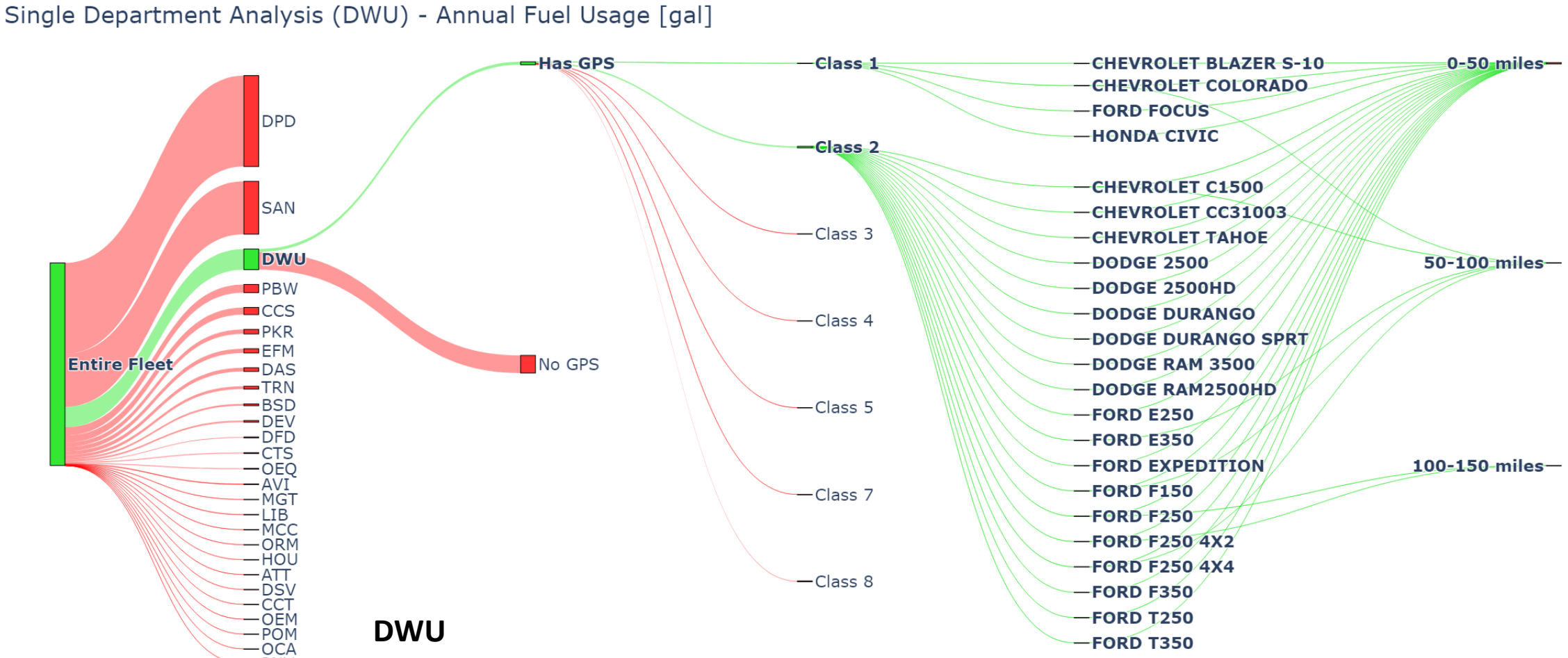
Daily Miles and Vehicle Counts by Department

Class 2



Dallas Vehicle Inventory - Sankey Diagram

Example Process by Annual Fuel Consumption



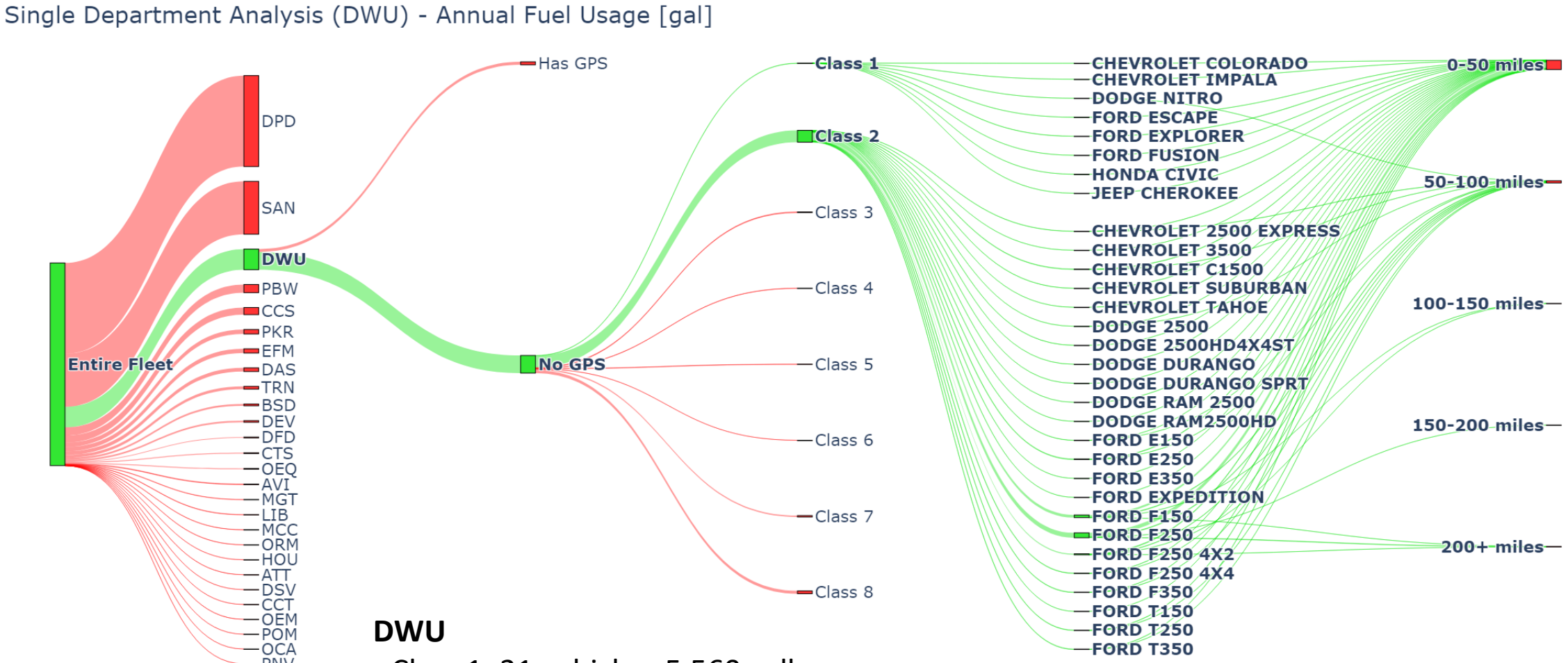
DWU

- Class 1: 6 vehicles, 3,250 gallons
- Class 2: 63 vehicles, 26,600 gallons

Open interactive version in browser

Dallas Vehicle Inventory - Sankey Diagram

Example Process by Annual Fuel Consumption

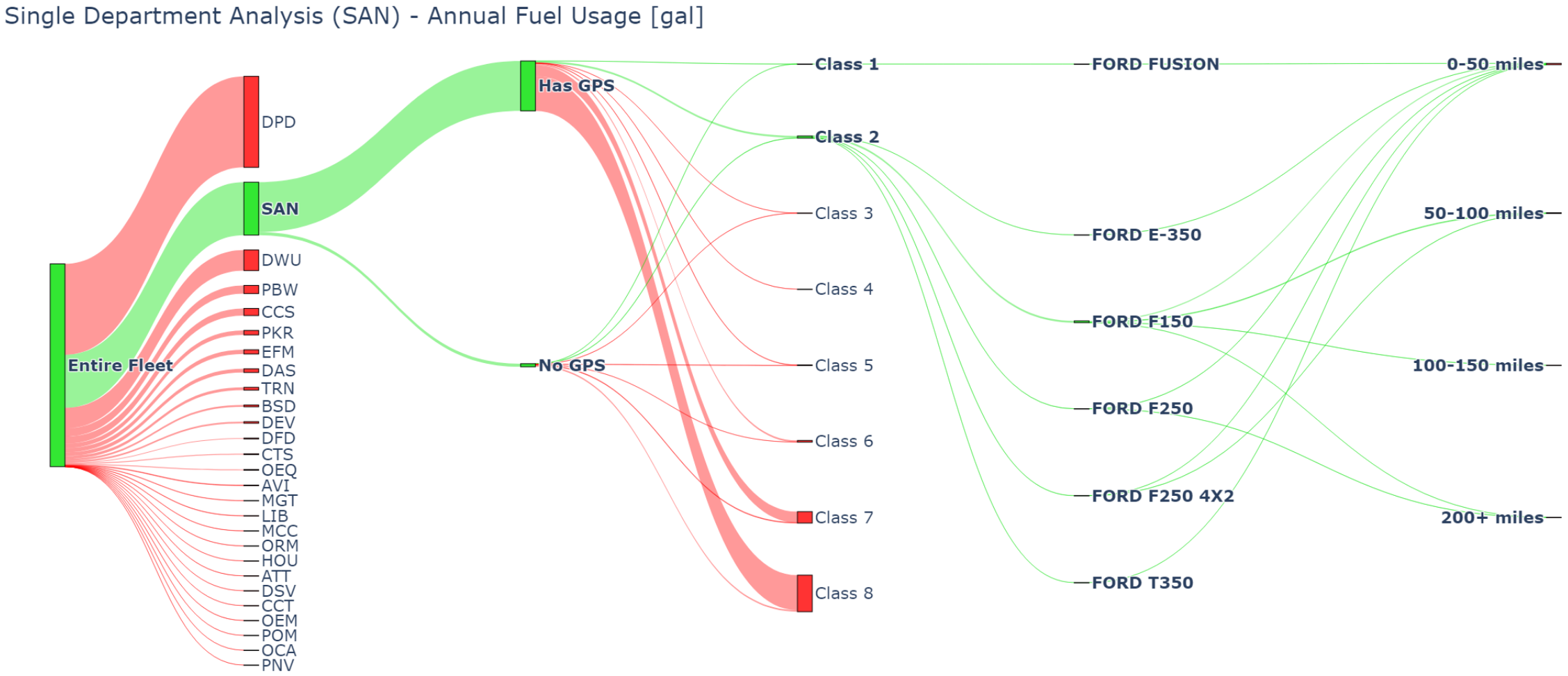


DWU

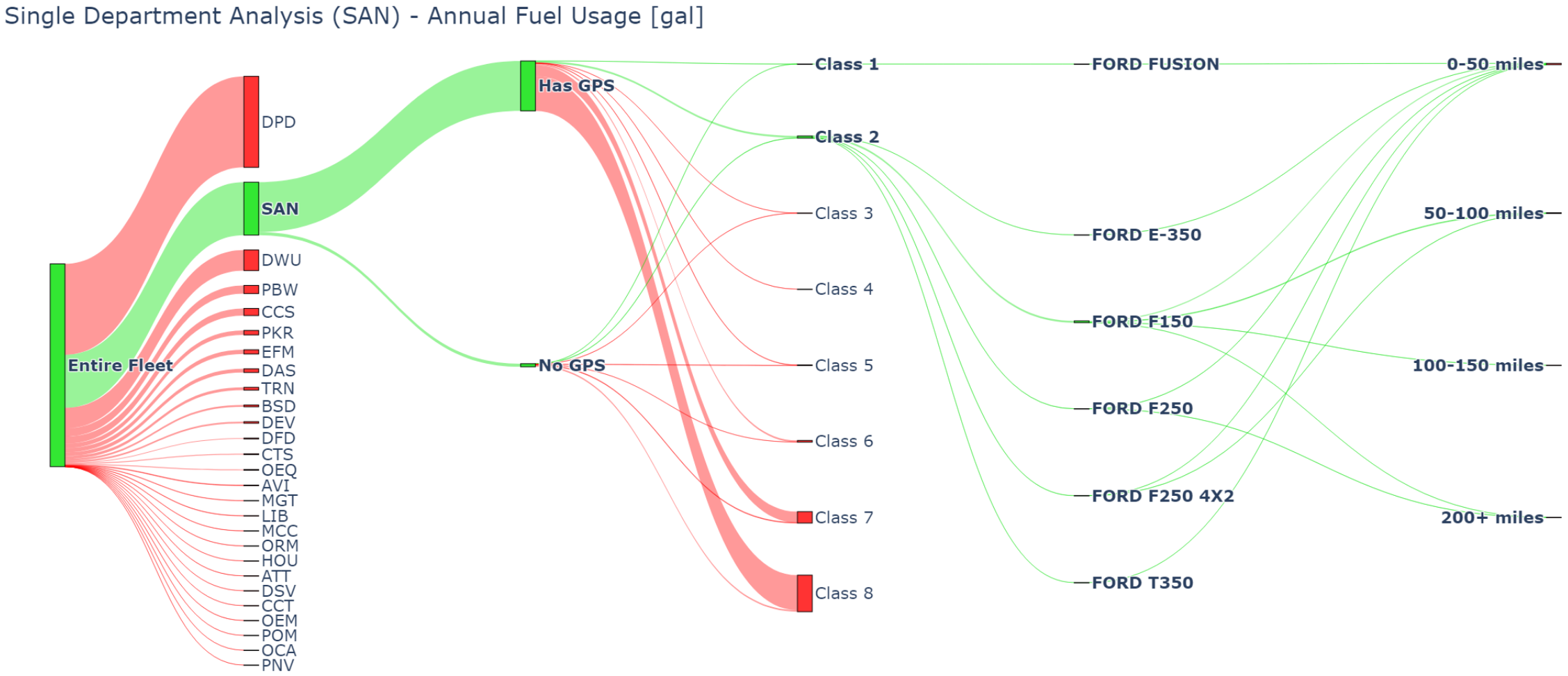
- Class 1: 21 vehicles, 5,560 gallons
- Class 2: 358 vehicles, 213,000 gallons

Open interactive version in browser

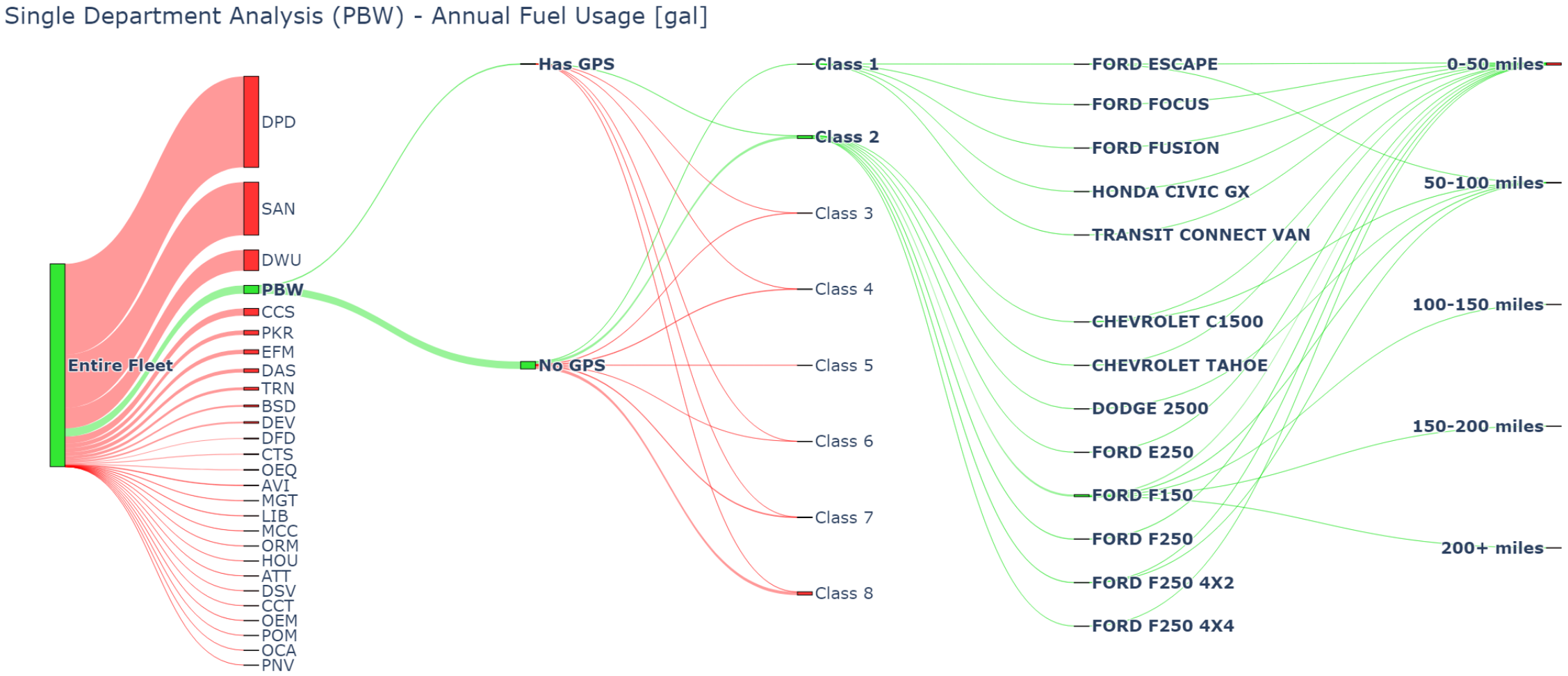
Dallas Vehicle Inventory - Sankey Diagram



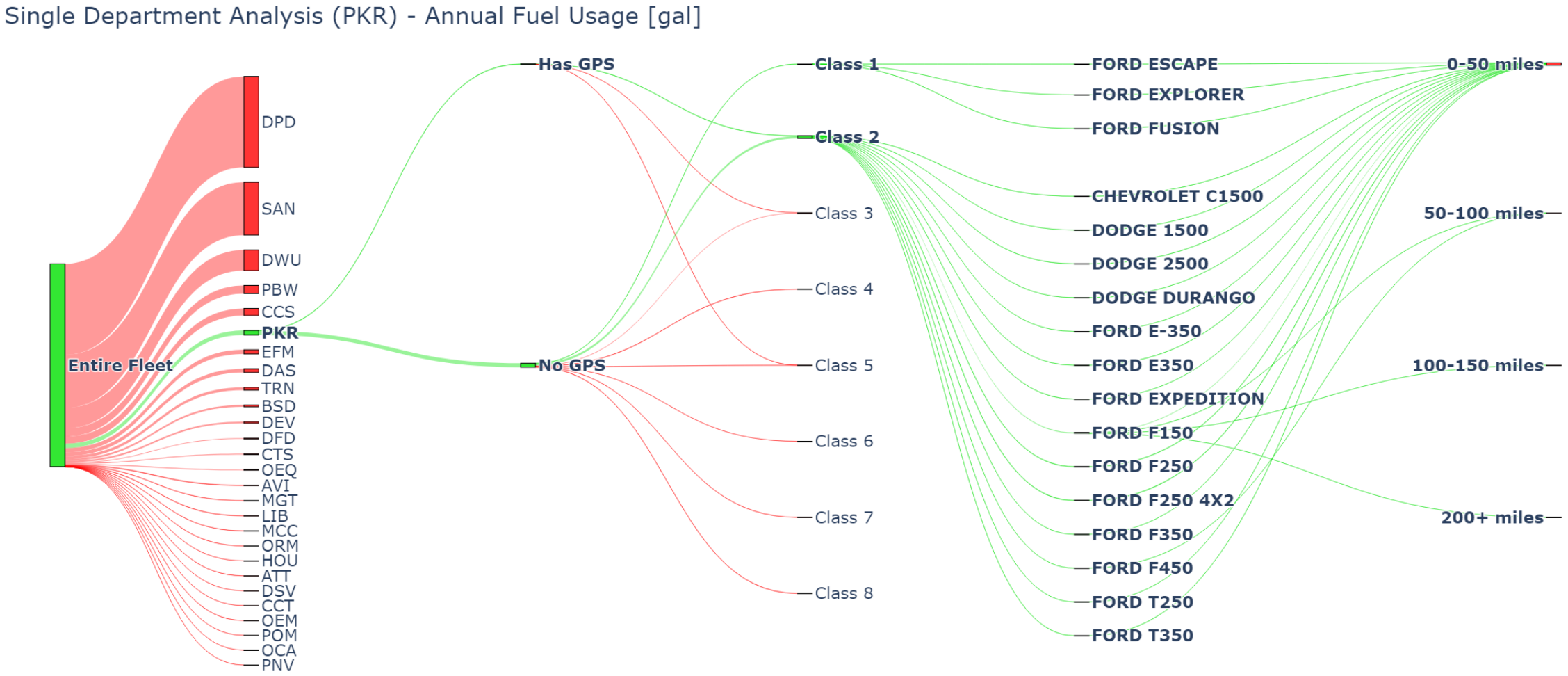
Dallas Vehicle Inventory - Sankey Diagram



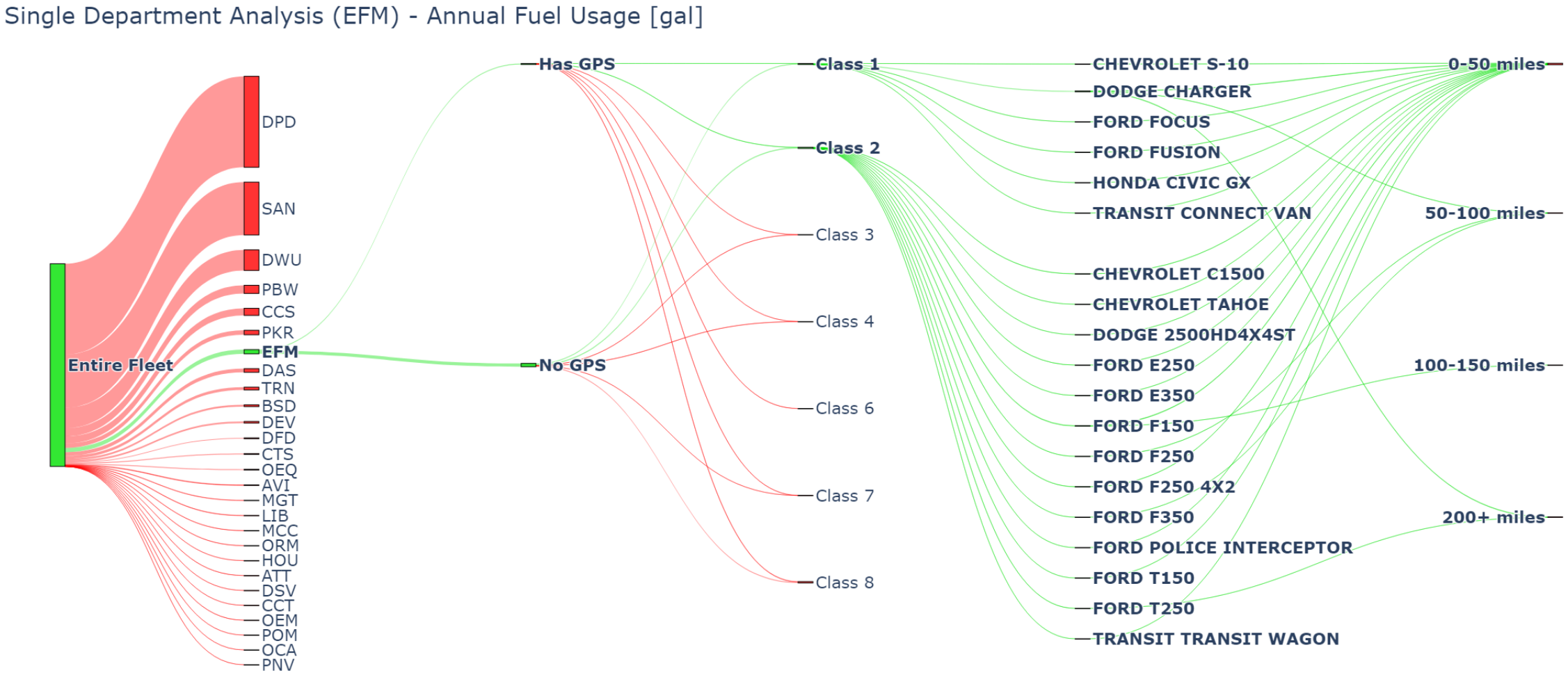
Dallas Vehicle Inventory - Sankey Diagram



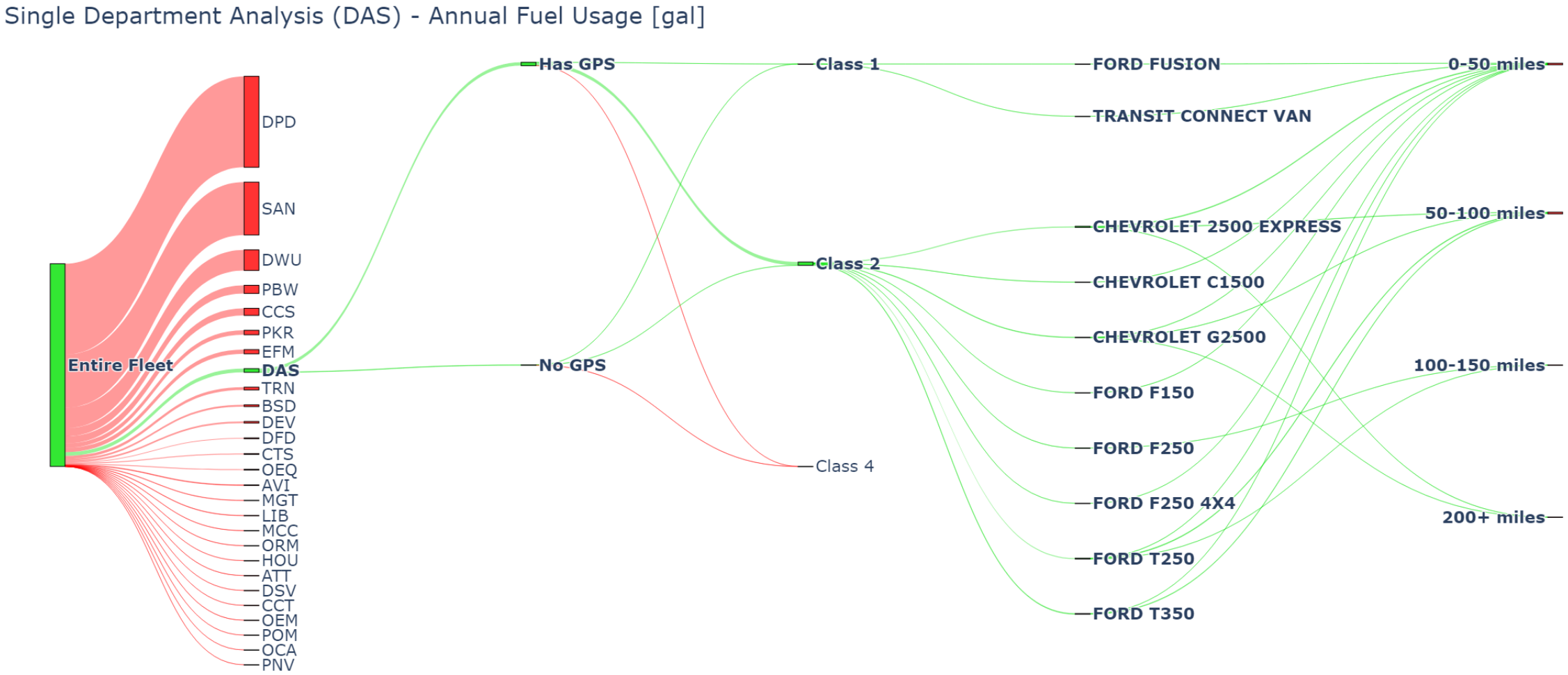
Dallas Vehicle Inventory - Sankey Diagram



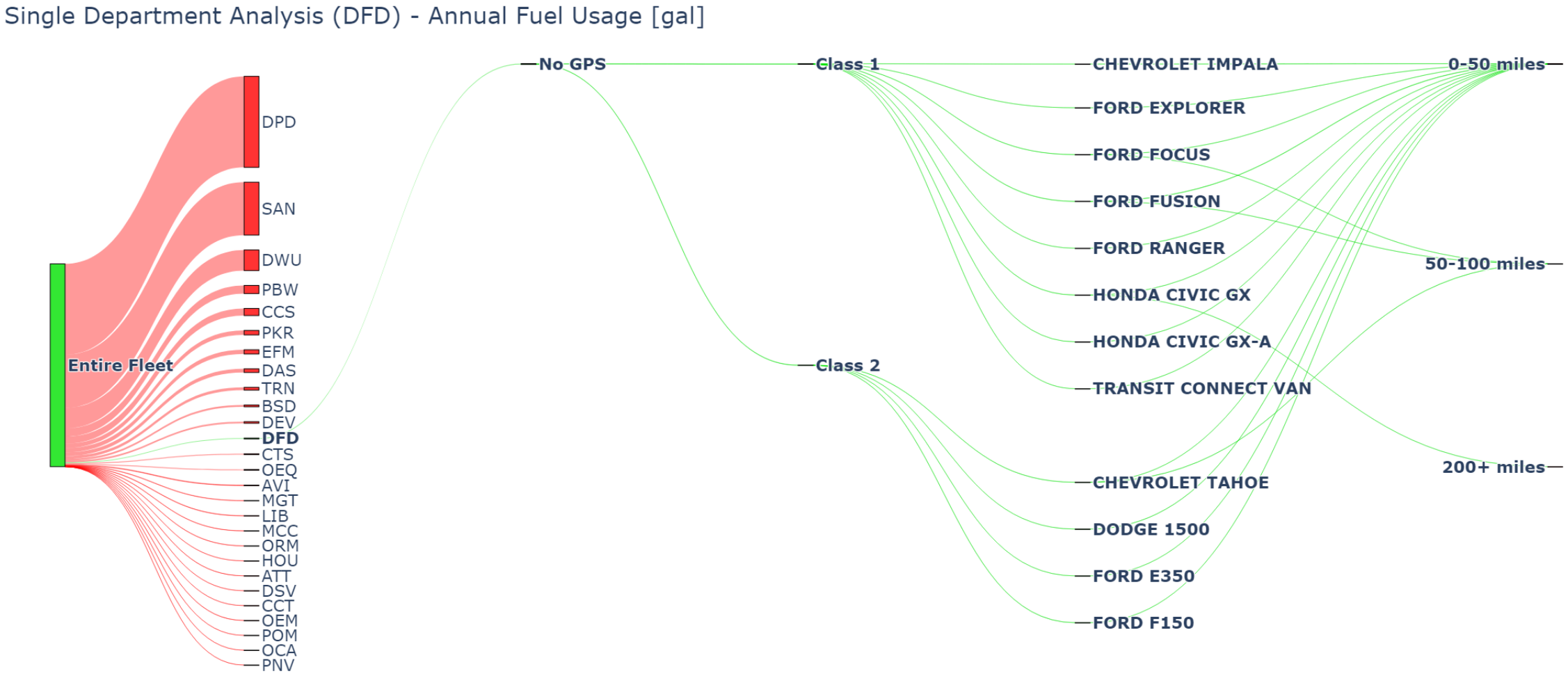
Dallas Vehicle Inventory - Sankey Diagram



Dallas Vehicle Inventory - Sankey Diagram

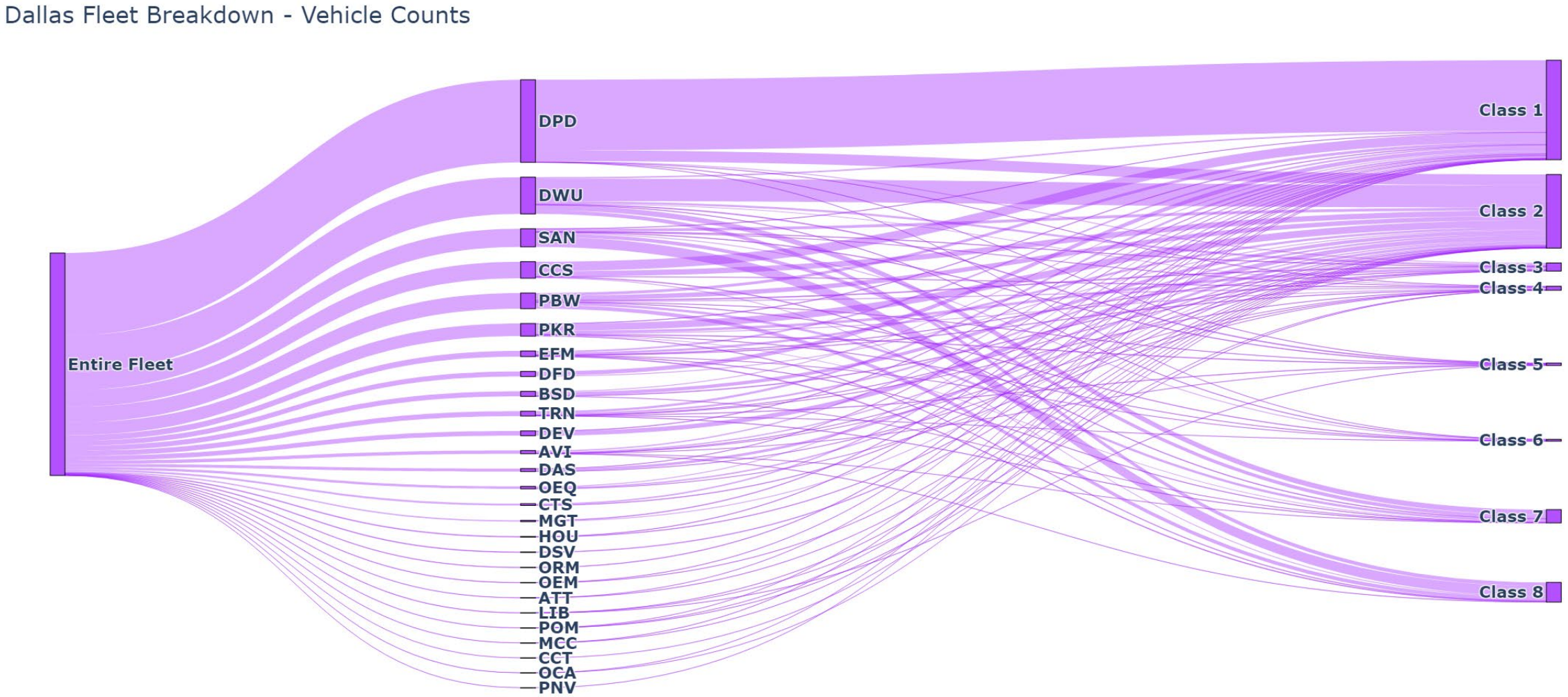


Dallas Vehicle Inventory - Sankey Diagram



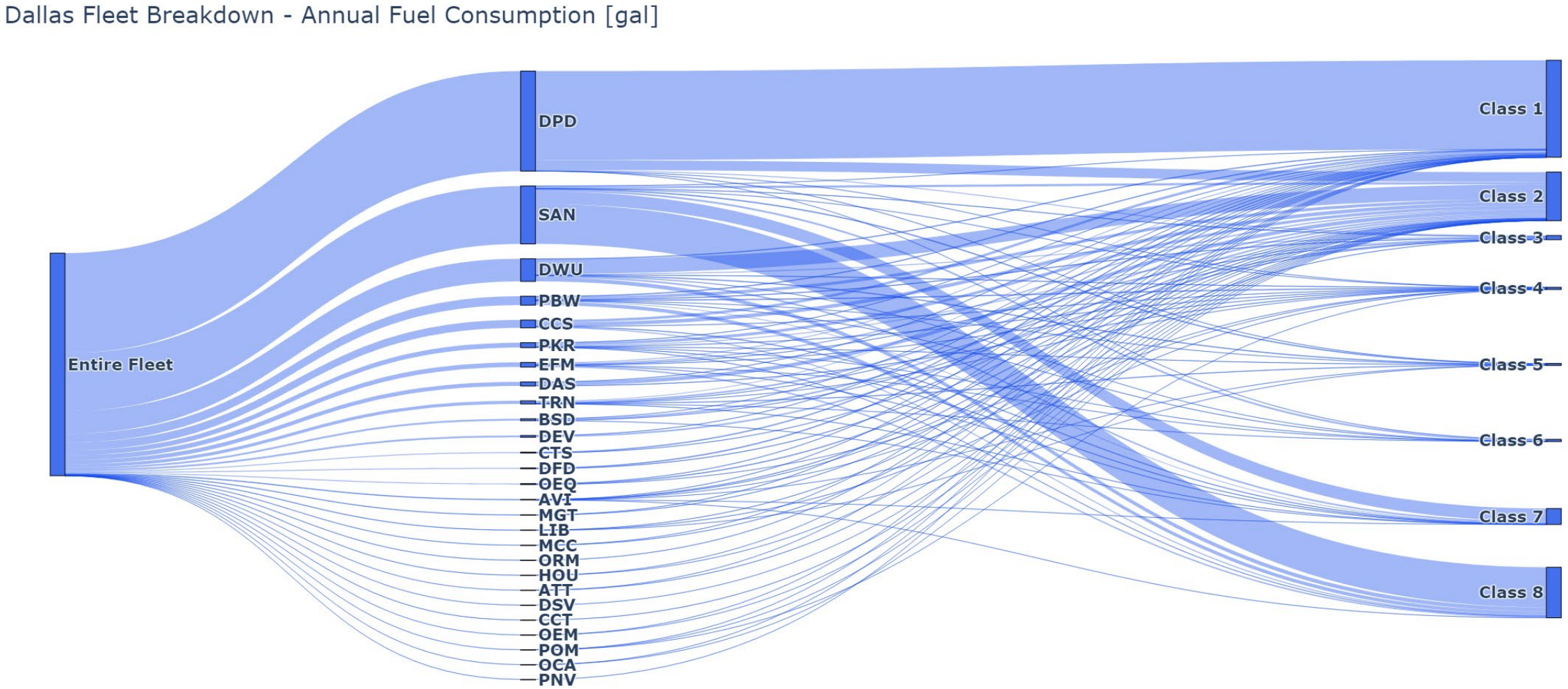
Dallas Vehicle Inventory - Sankey Diagram

Fleet Breakdown by Vehicle Count



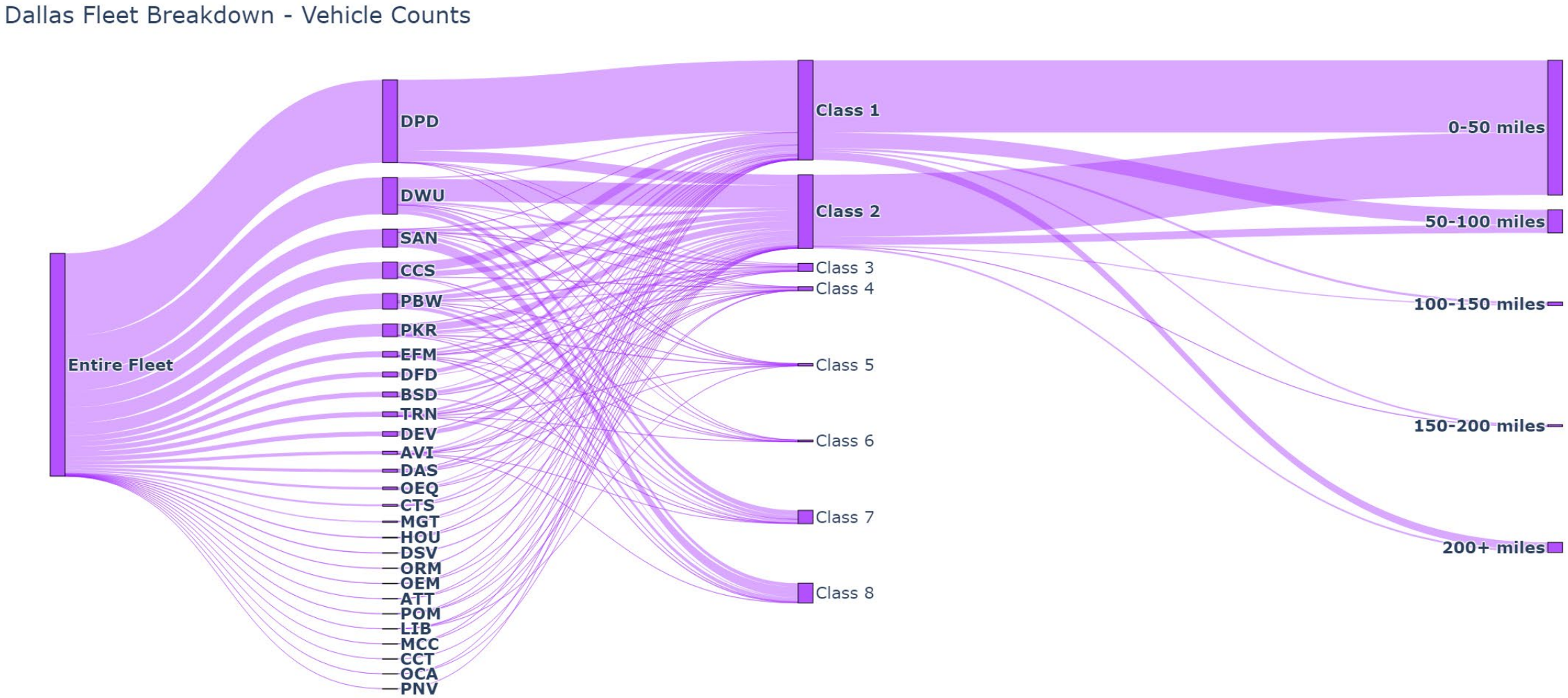
Dallas Vehicle Inventory - Sankey Diagram

Fleet Breakdown by Annual Fuel Consumption



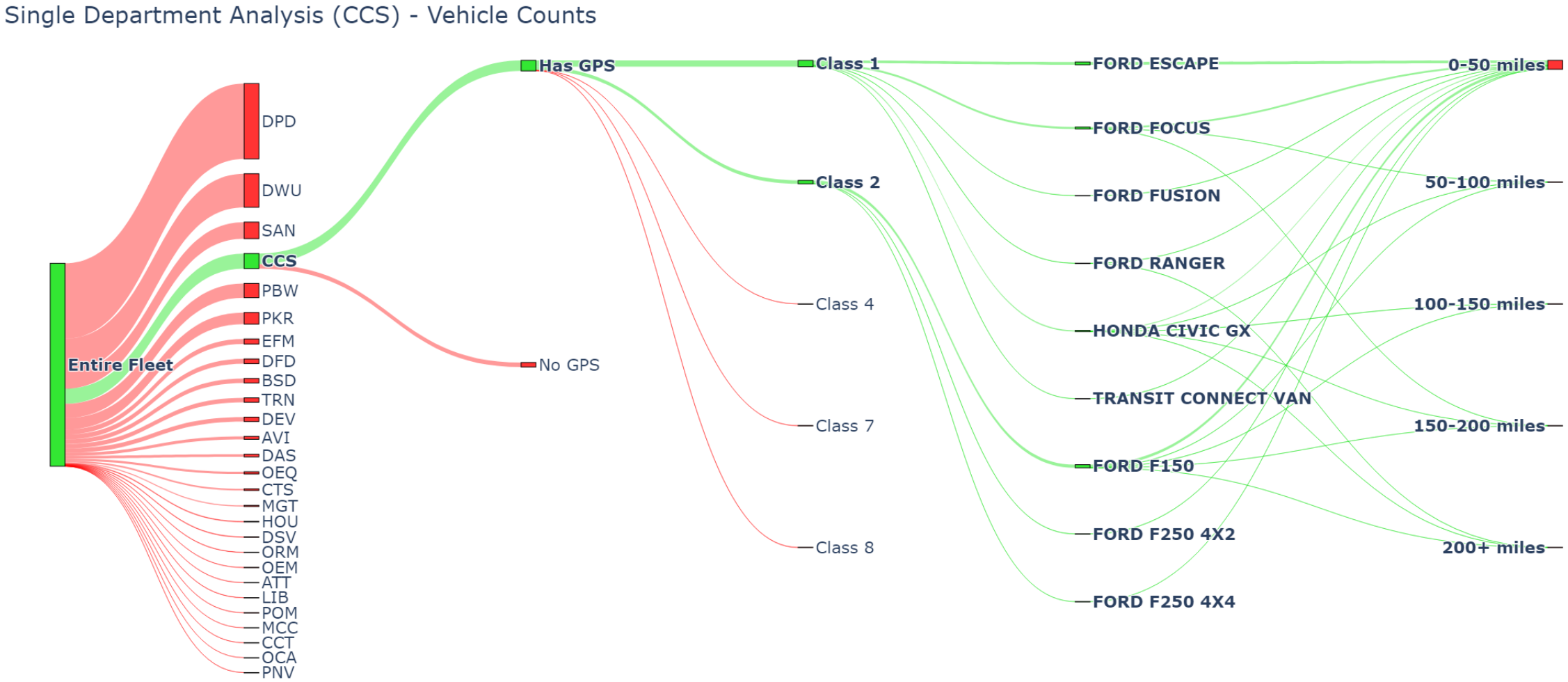
Dallas Vehicle Inventory - Sankey Diagram

Fleet Breakdown by Vehicle Count w/ Miles

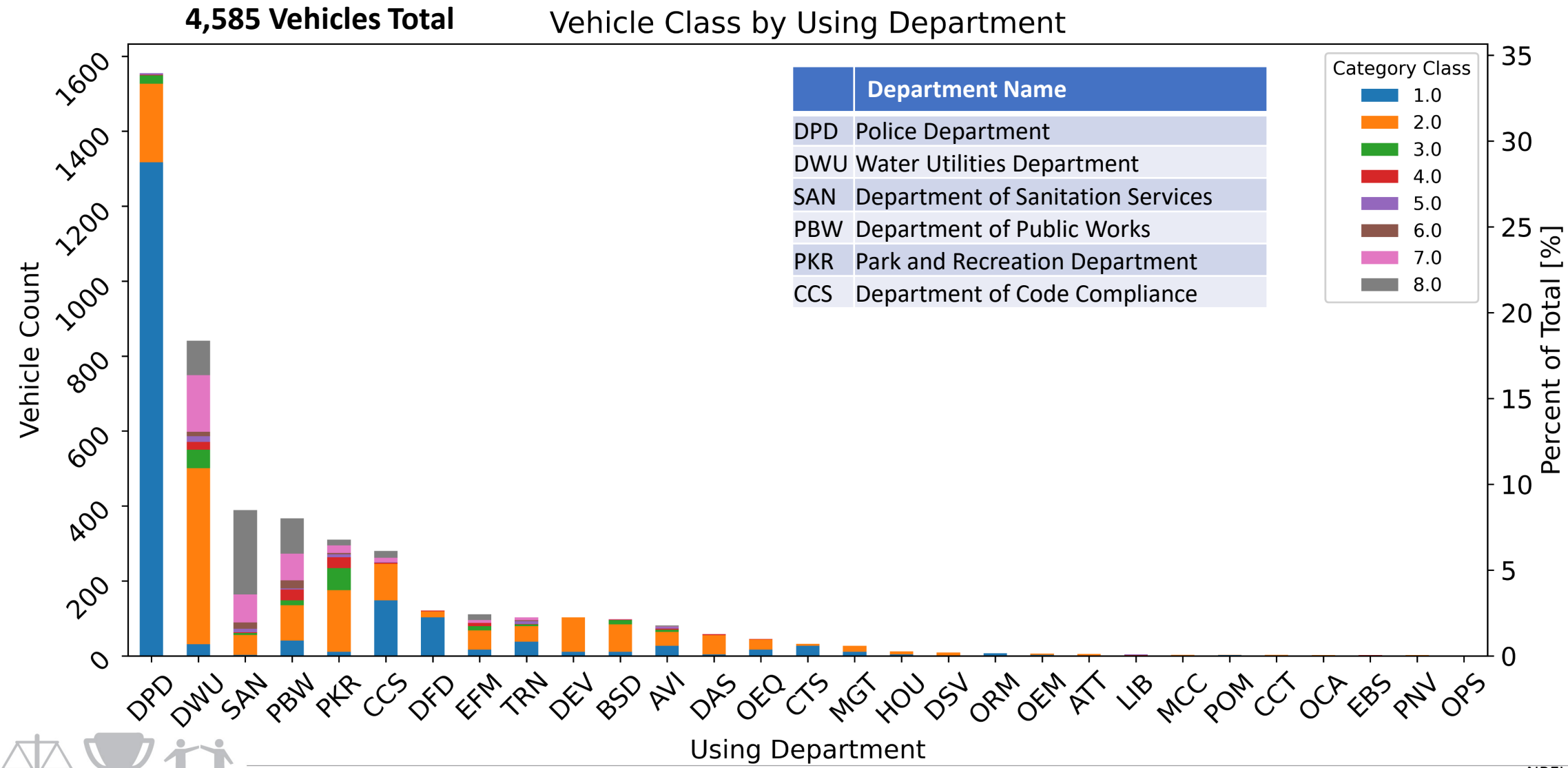


Dallas Vehicle Inventory - Sankey Diagram

Example Process by Vehicle Count

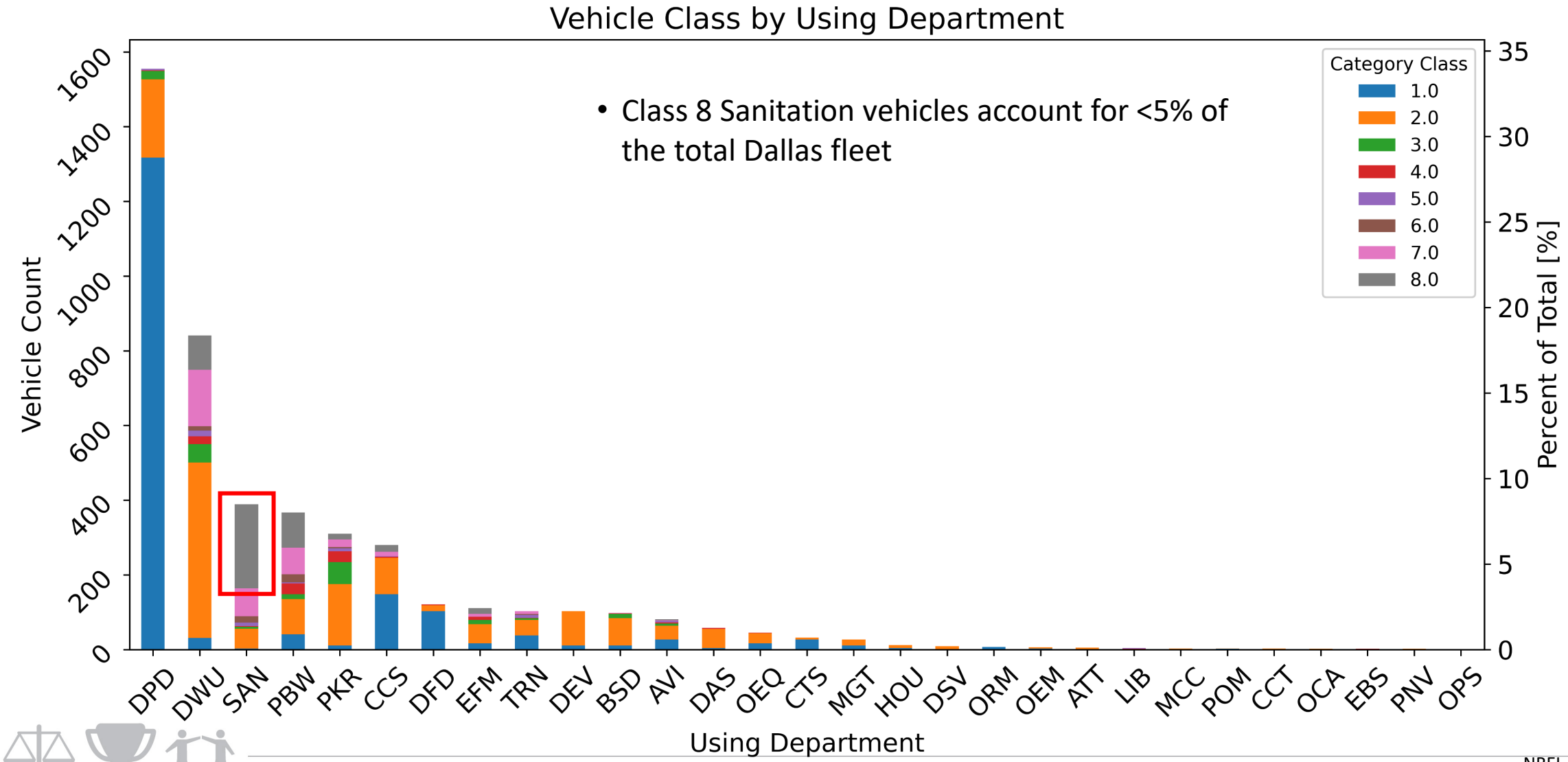


Vehicle Class Distribution by Department



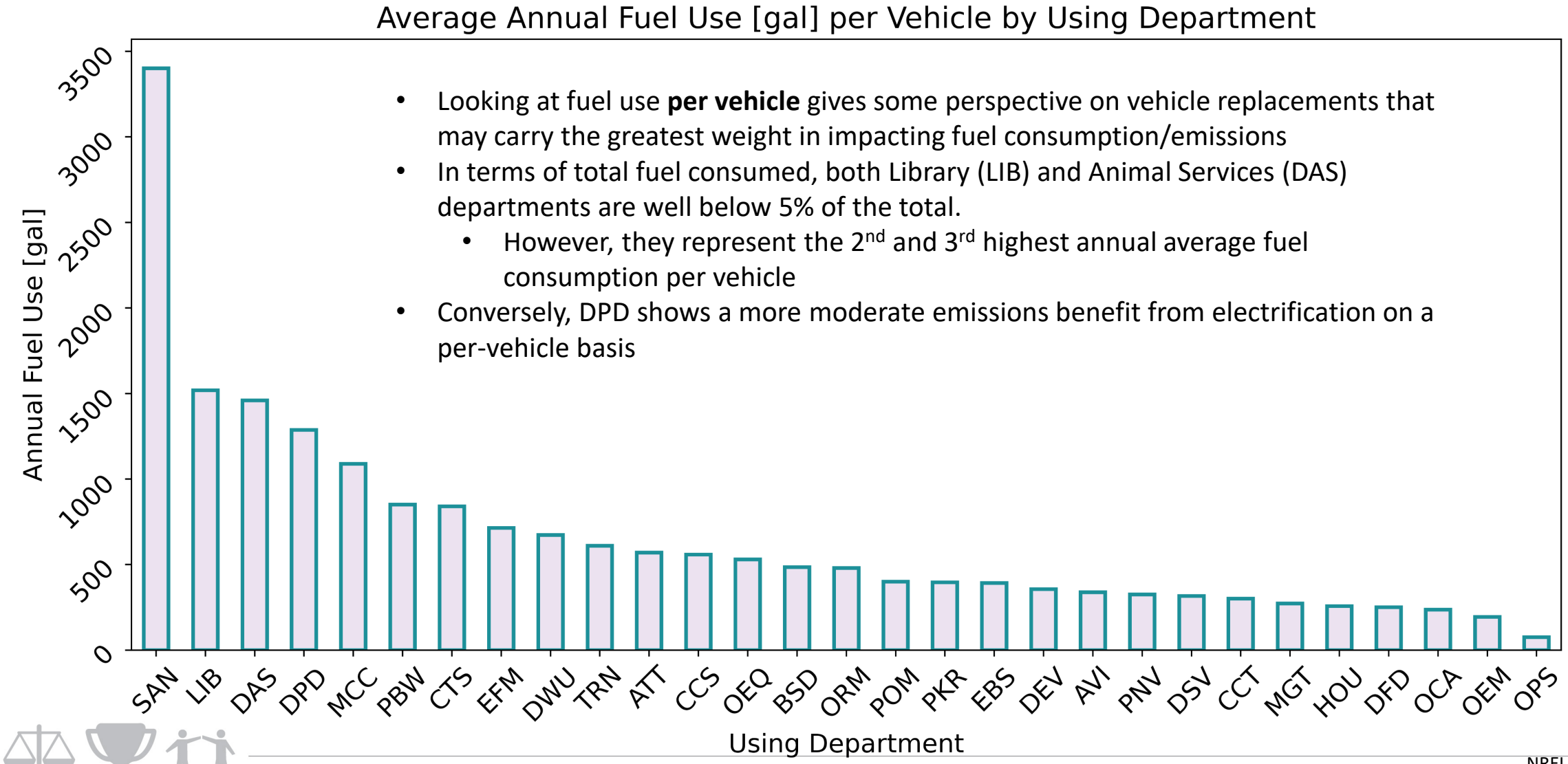
	Department Name
DPD	Police Department
DWU	Water Utilities Department
SAN	Department of Sanitation Services
PBW	Department of Public Works
PKR	Park and Recreation Department
CCS	Department of Code Compliance

Vehicle Class Distribution by Department



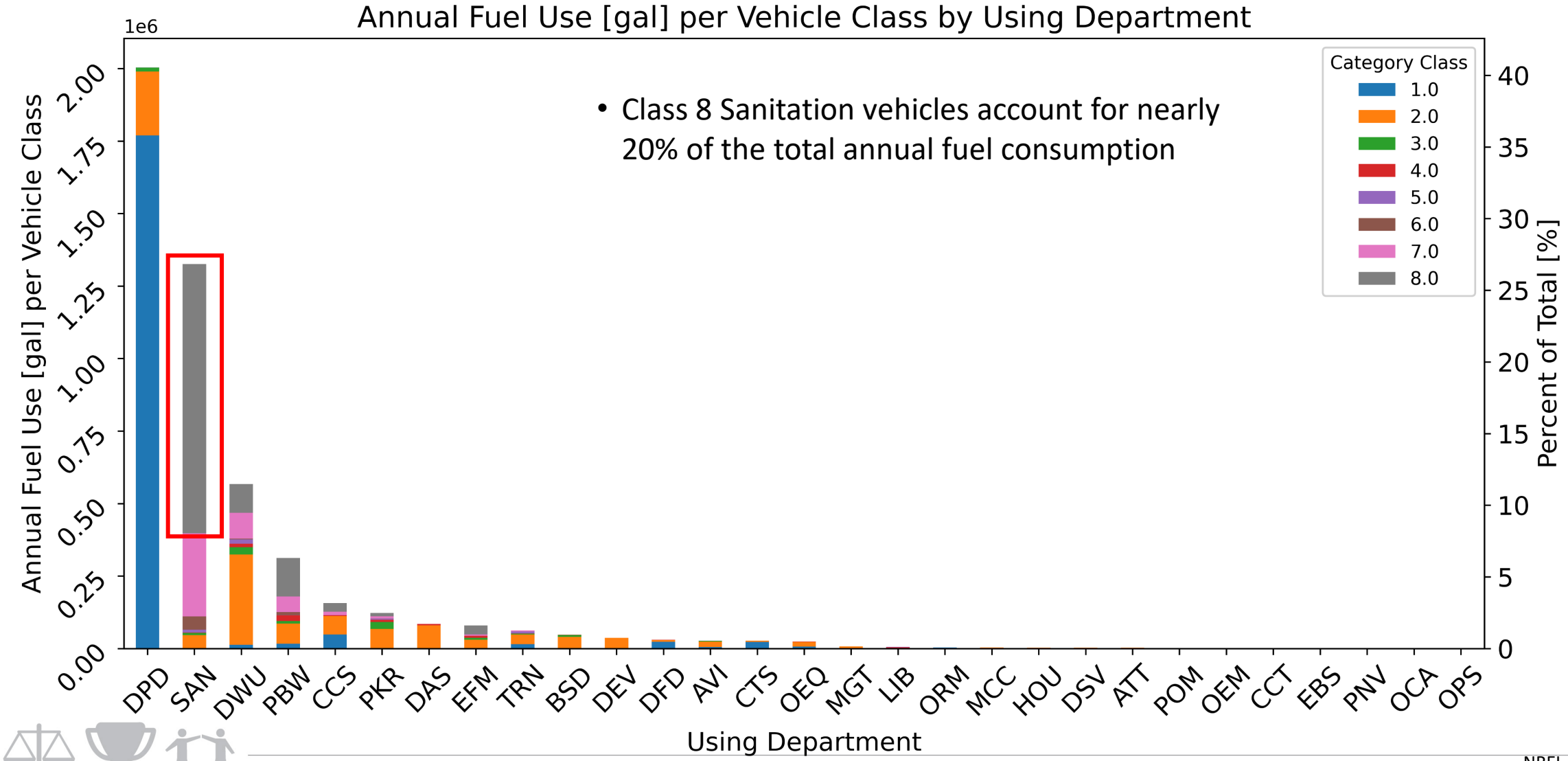
- Class 8 Sanitation vehicles account for <5% of the total Dallas fleet

Annual Fuel Use PER VEHICLE by Dept



- Looking at fuel use **per vehicle** gives some perspective on vehicle replacements that may carry the greatest weight in impacting fuel consumption/emissions
- In terms of total fuel consumed, both Library (LIB) and Animal Services (DAS) departments are well below 5% of the total.
  - However, they represent the 2nd and 3rd highest annual average fuel consumption per vehicle
- Conversely, DPD shows a more moderate emissions benefit from electrification on a per-vehicle basis

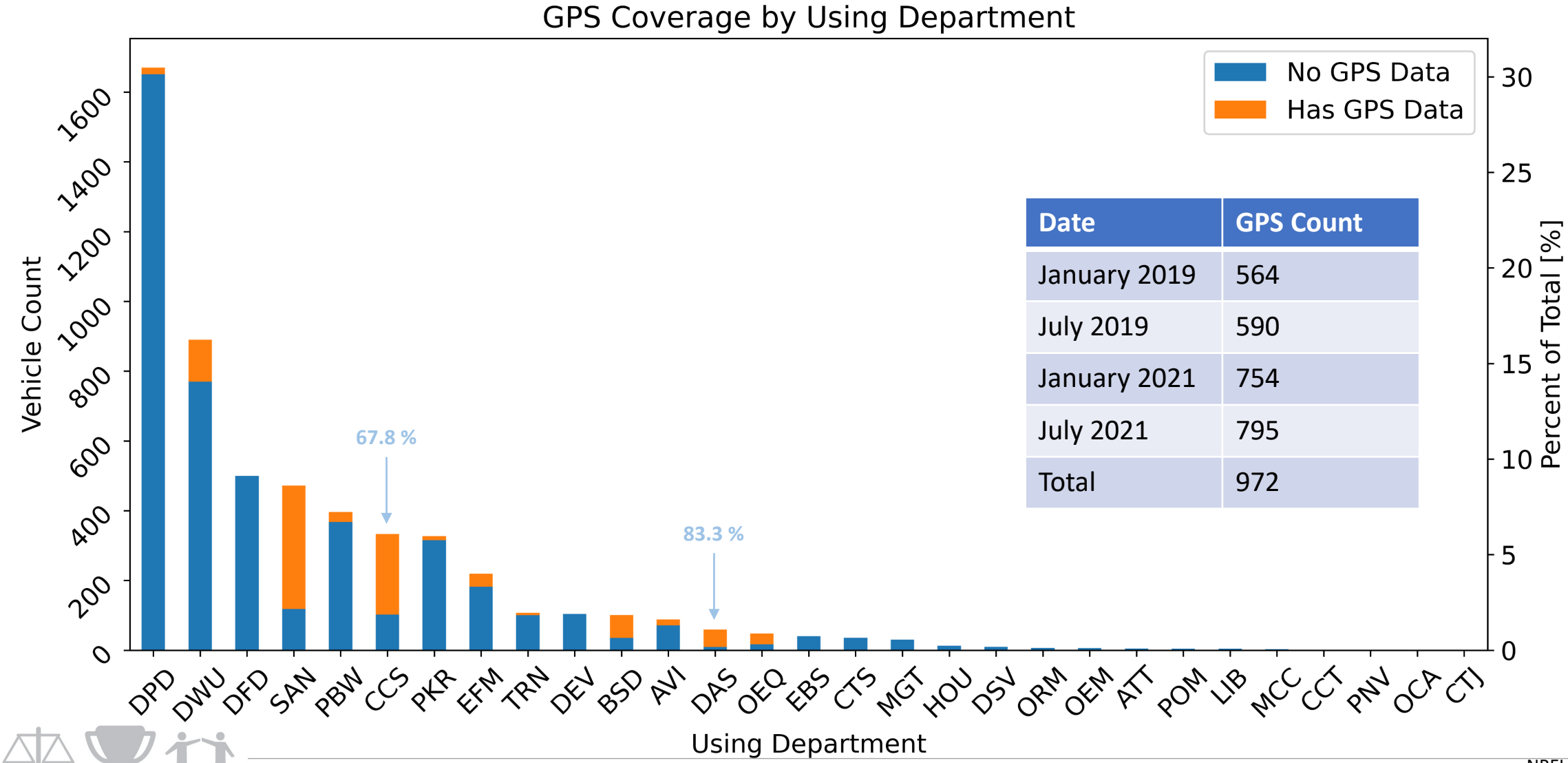
Annual Fuel Use per Vehicle Class by Dept



GPS Data Review

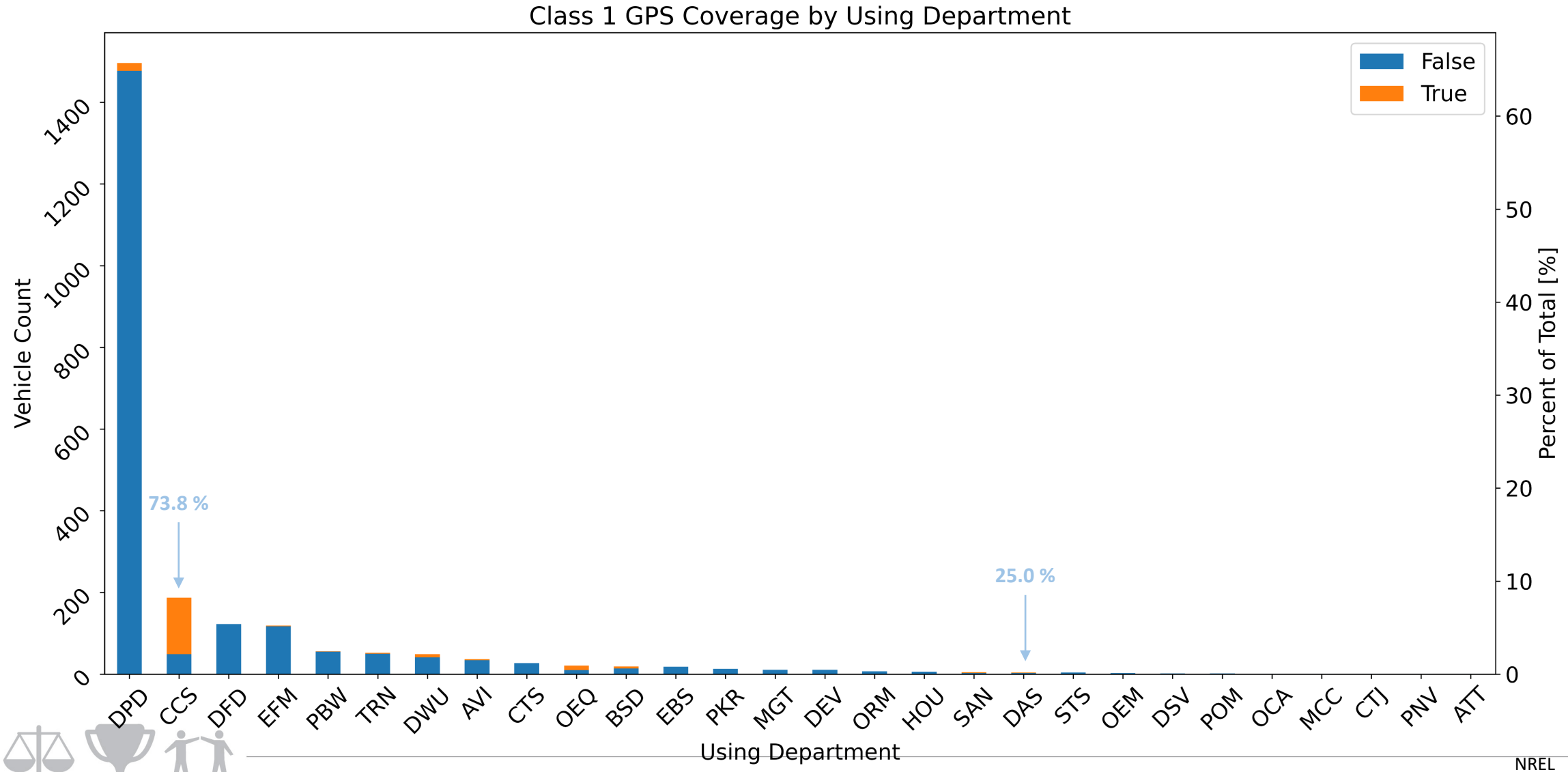
- The vehicle inventory can only provide estimates of daily operation and fuel consumption by vehicle
  - Estimates based on annual totals and assumptions for operating days
- GPS data can provide a more accurate view of vehicle operation
  - Vehicle schedule, operating days of the week
  - Range/variability of daily distance traveled
  - Percent of vehicle idle operation to indicate higher use of “hotel loads”
  - Stops/dwell periods and locations

CalAmp GPS Data

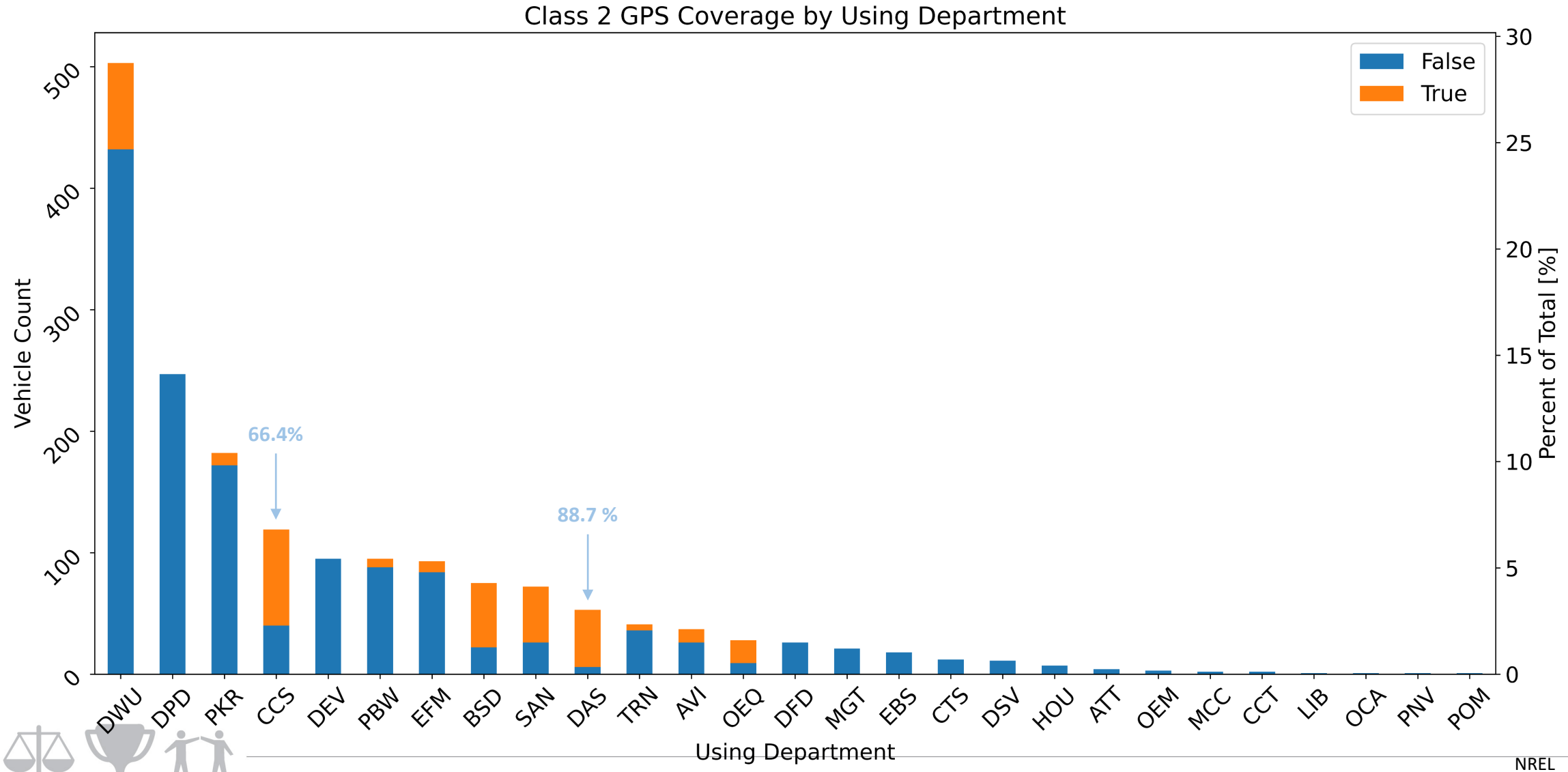


Date	GPS Count
January 2019	564
July 2019	590
January 2021	754
July 2021	795
Total	972

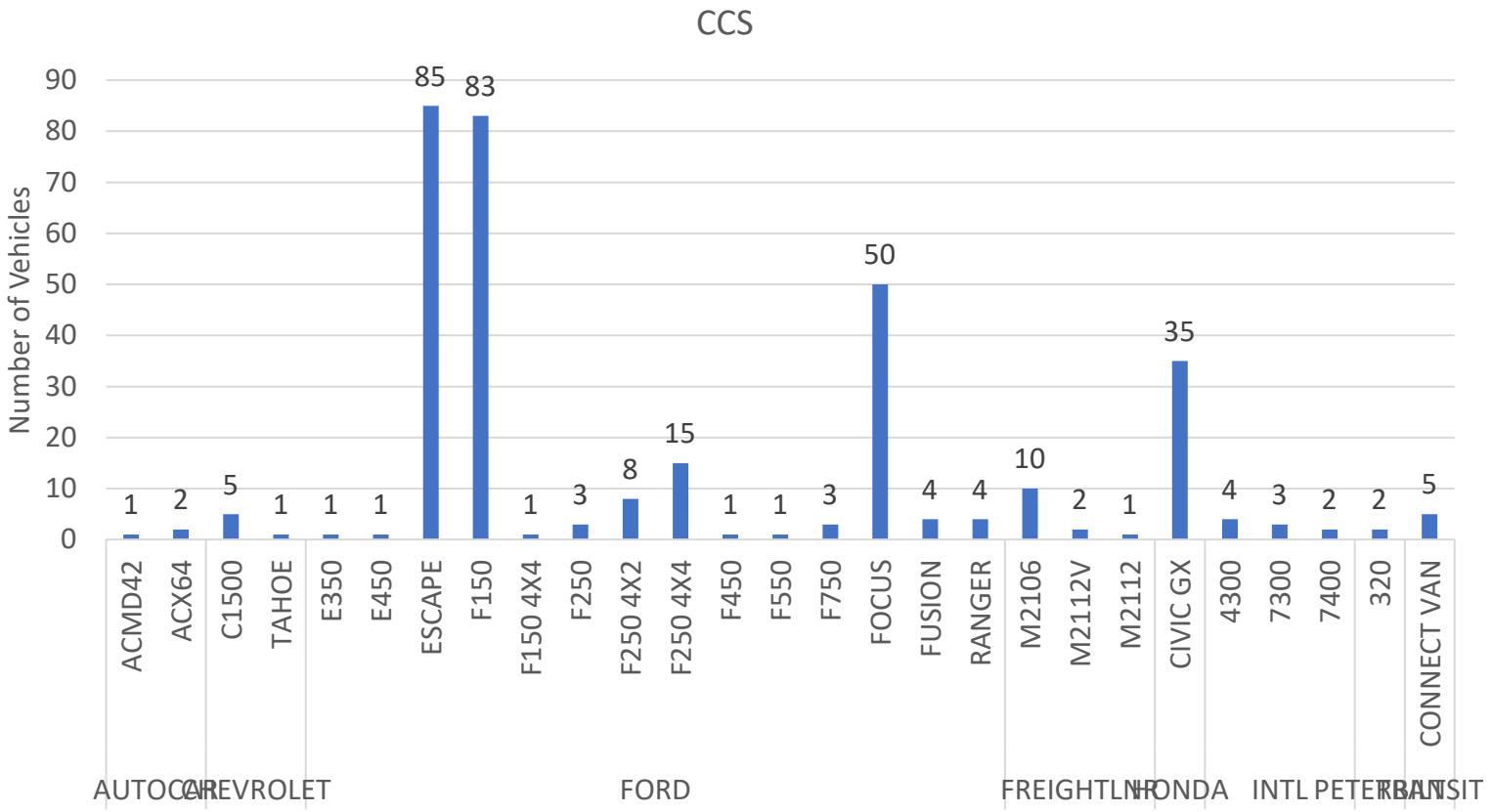
CalAmp GPS Data



CalAmp GPS Data



CCS Fleet Composition



CCS - Current Fleet

Ford Escape = 85

Ford F150 = 83

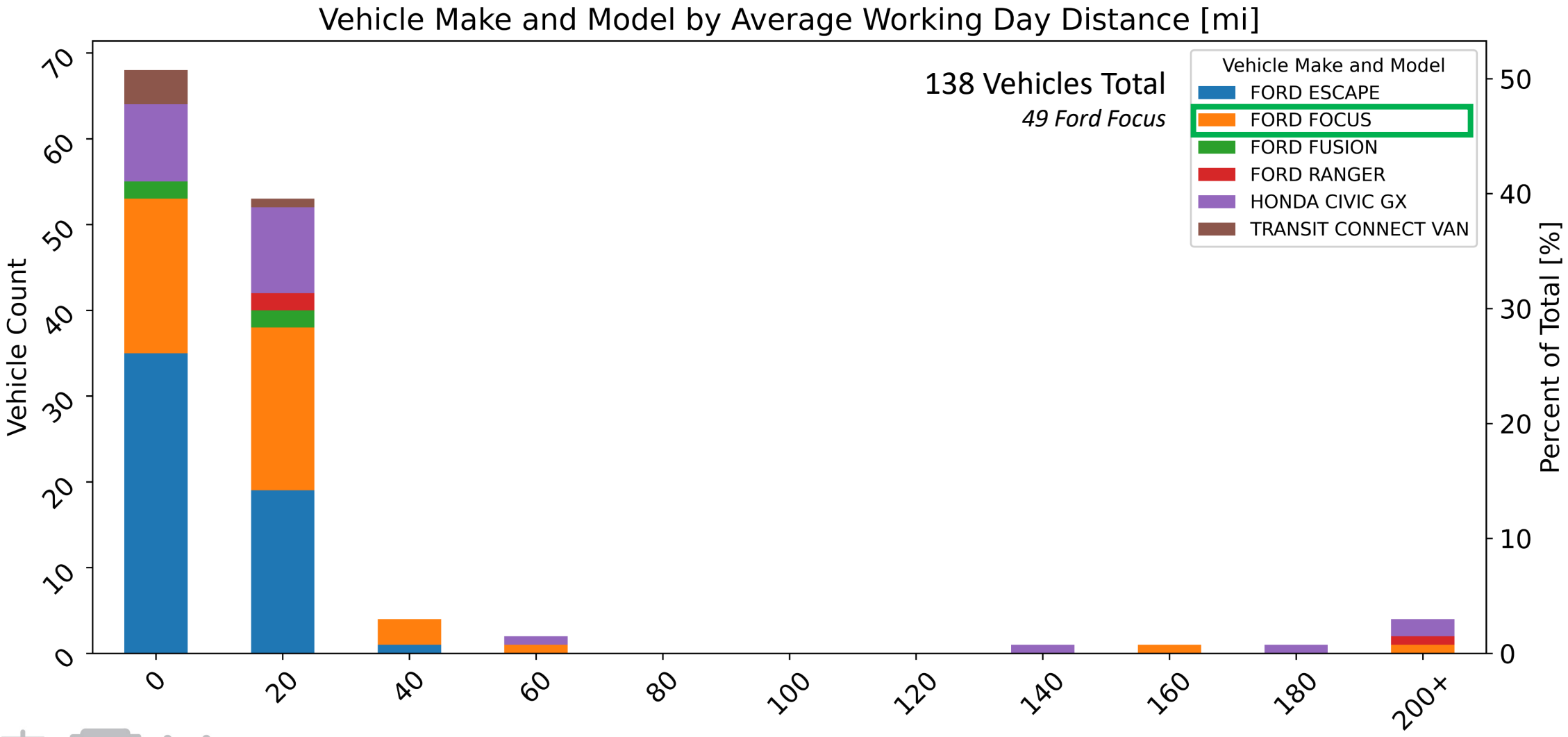
Ford Focus = 50

Honda Civic = 35

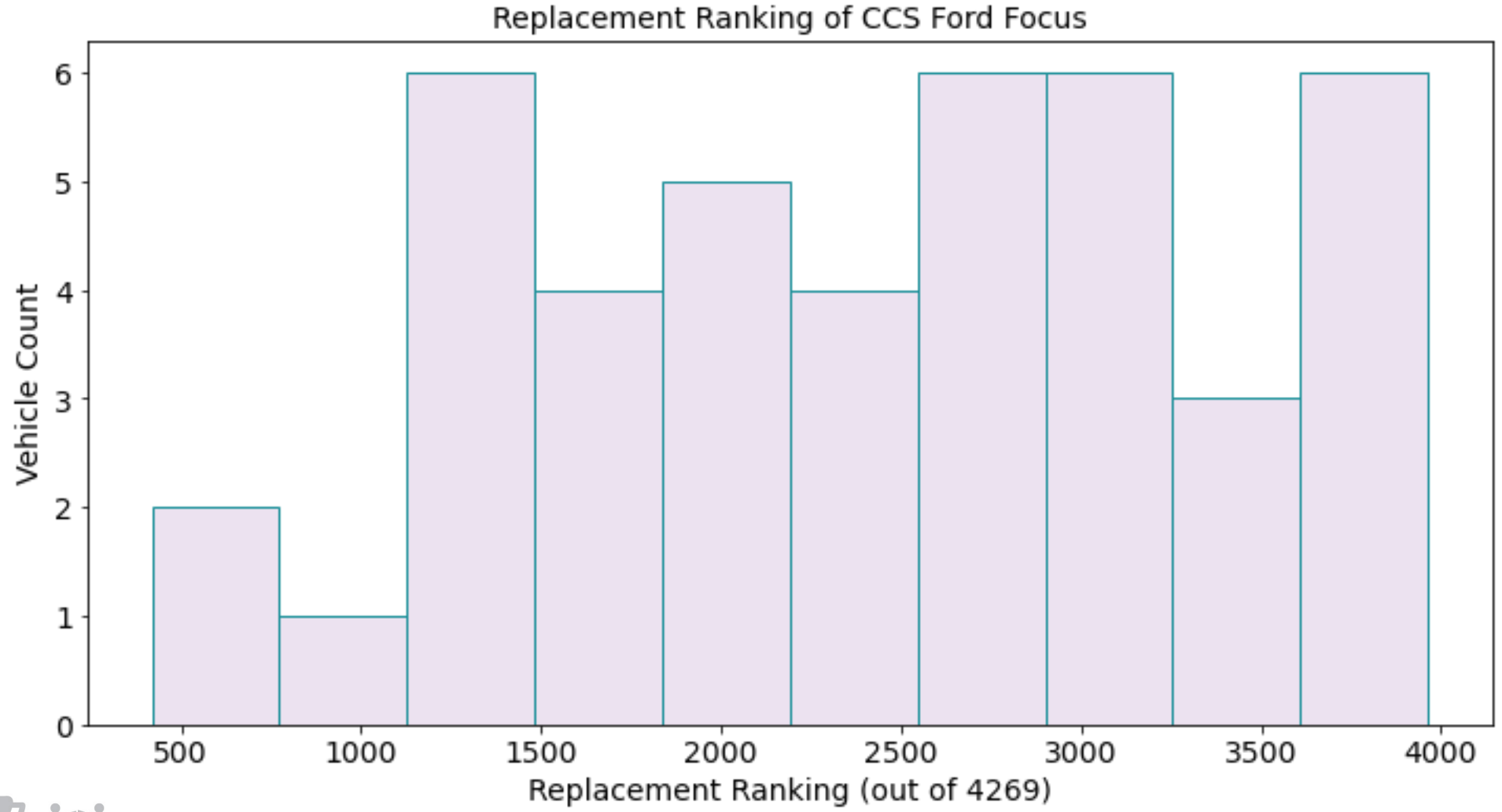
Transit Connect Van = 5

Make and Model Counts by Daily Distance

CCS - Class 1

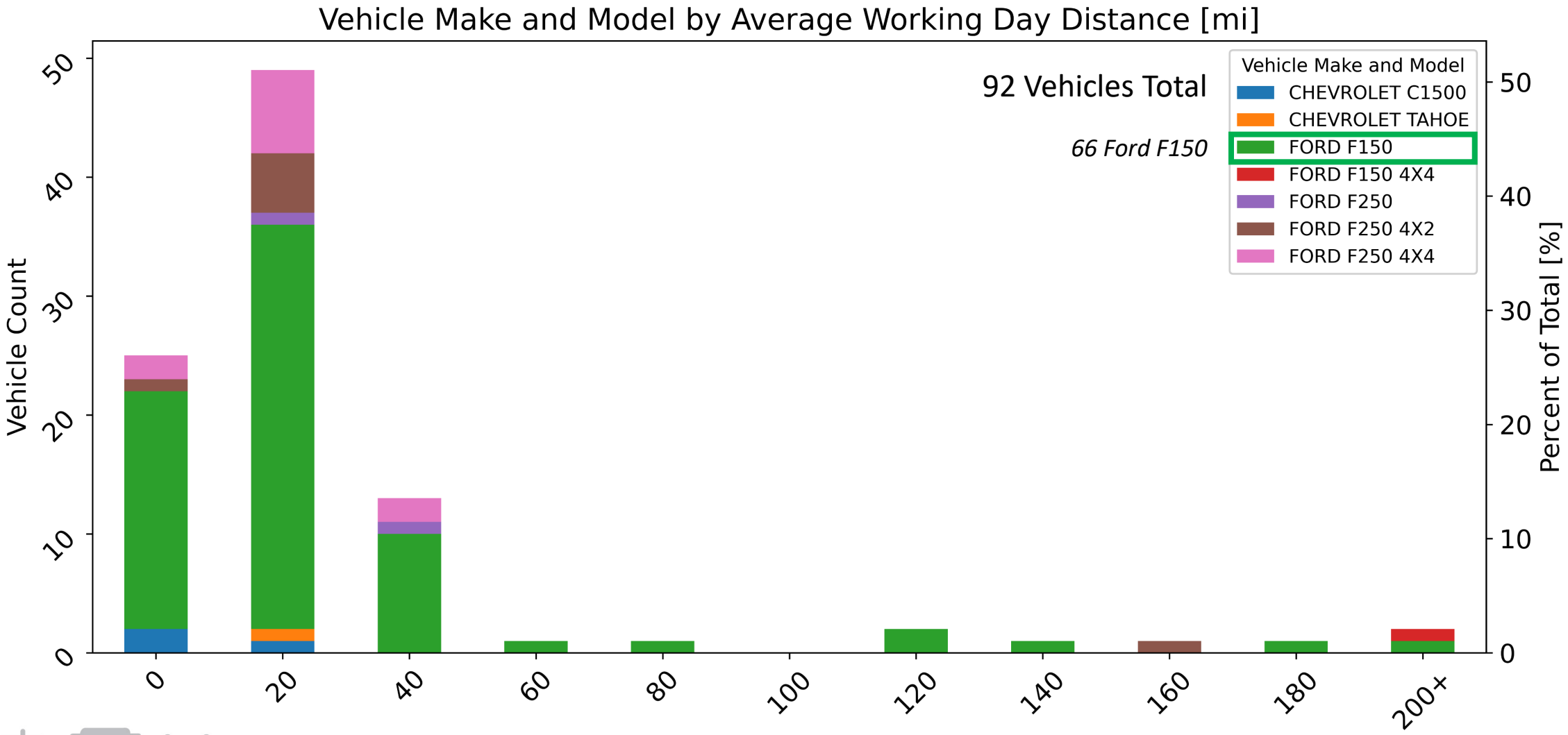


Replacement Ranking of CCS Ford Focus

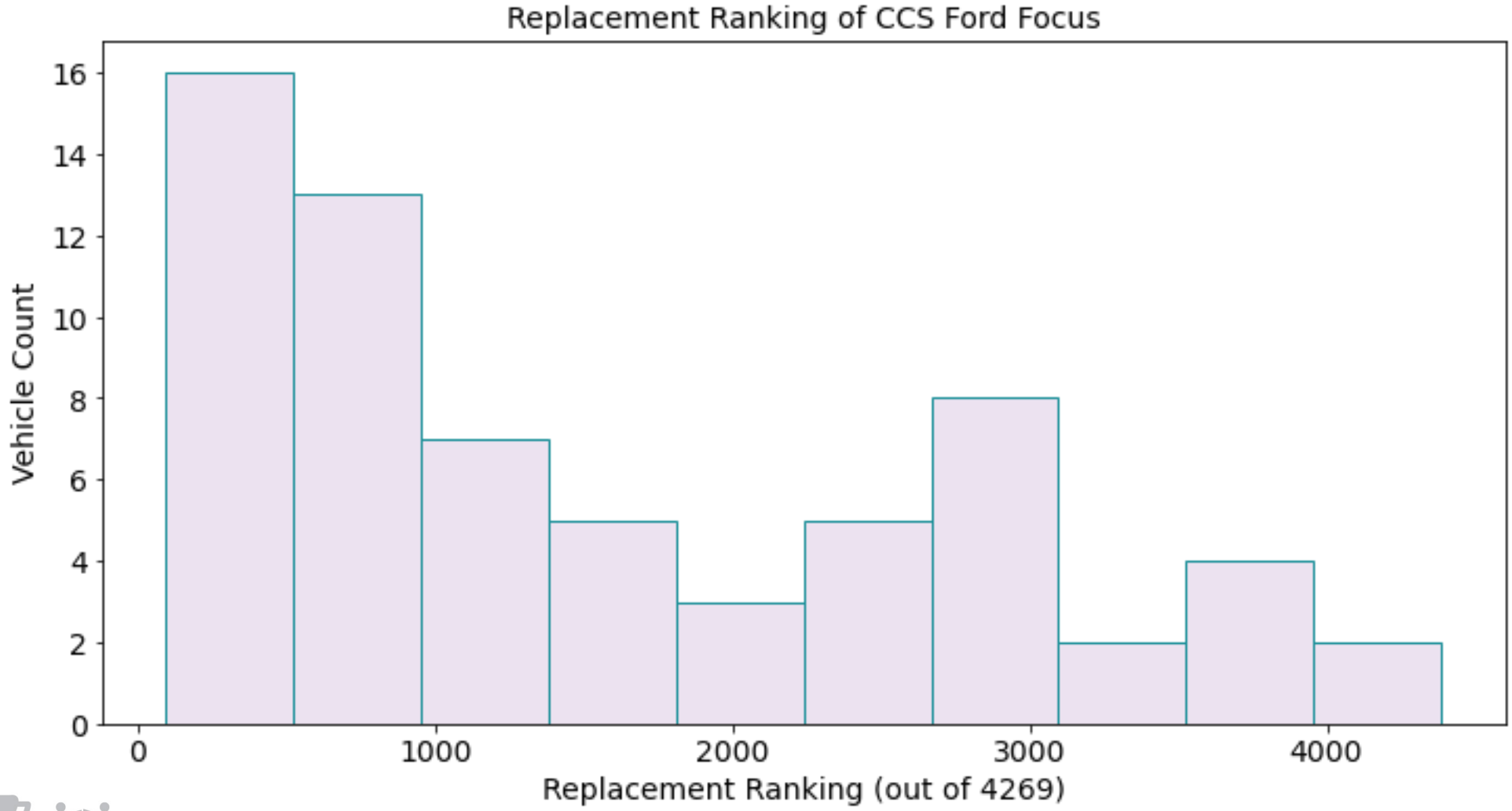


Make and Model Counts by Daily Distance

CCS - Class 2



Replacement Ranking of CCS Ford F150



Vehicle Capital Costs

- Sample of MSRP values for class 1 EV examples
  - *To be compared to replacement cost values from vehicle inventory*

All-Electric (EV)								
Make	**Model**	**EV Type**	**Base MSRP**	**Federal tax credit**	**Price after federal tax credit**	**Battery size (kWh)**	**Electric Range (miles)**	**Total Range (miles)**
Chevrolet	Bolt EV	BEV	$31,000	$0	$31,000	66	259	259
Chevrolet	Bolt EUV	BEV	$33,000	$0	$33,000	66	247	247
Ford	Mustang Mach-E	BEV	$42,895	$7,500	$35,395	76-99	210-300	210-300
Hyundai	Ioniq EV	BEV	$33,045	$7,500	$25,545	38	170	170
Kia	Niro EV	BEV	$39,990	$7,500	$32,490	64	239	239
Mini	Cooper SE	BEV	$29,900	$7,500	$22,400	33	114	114
Nissan	Leaf	BEV	$27,400	$7,500	$19,900	40-62	150-226	150-226
Tesla	Model 3	BEV	$39,990	$0	$39,990	60-75	263-353	263-353
Audi	e-tron	BEV	$65,900	$7,500	$58,400	95	222	222
Audi	e-tron Sportback	BEV	$69,100	$7,500	$61,600	95	218	218
Hyundai	Kona EV	BEV	$37,190	$7,500	$29,690	64	258	258
Volkswagen	ID4	BEV	$39,995	$7,500	$32,495	78	240-260	240-260
Volvo	XC40 Recharge	BEV	$53,990	$7,500	$46,490	78	223	223

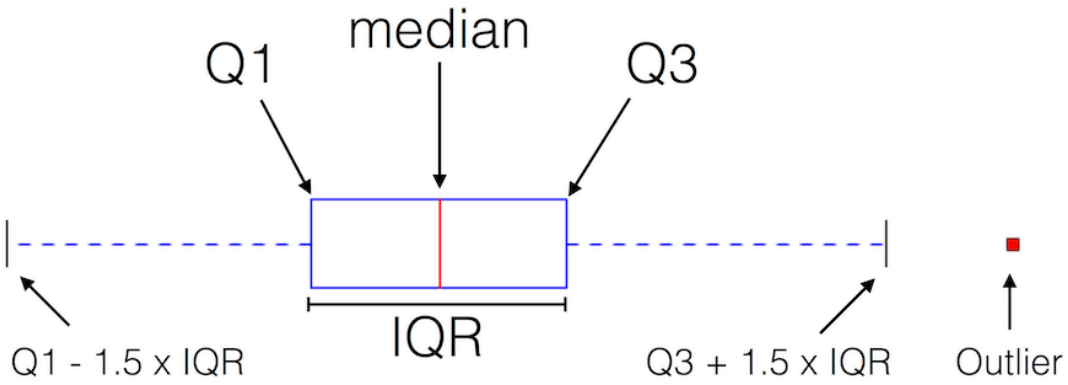
https://www.shift2electric.com/evinfolist

Department Names

Acronym	Department Name
ATT	City Attorney's Office
AVI	Department of Aviation
BSD	Building Services Department
CCS	Department of Code Compliance
CCT	Department of Convention and Event Services
CTS	Court & Detention Services
DAS	Department of Dallas Animal Services
DEV	Department of Development Services
DFD	Fire-Rescue Department
DPD	Police Department
DSV	Department of Information and Technology Services
DWU	Water Utilities Department
EBS	Equipment and Building Services *(split into BSD and EFM)*
EFM	Department of Equipment and Fleet Management

Acronym	Department Name
HOU	Department of Housing & Neighborhood Revitalization
LIB	Library
MCC	Mayor and City Council Office
MGT	Office of Management Services
OCA	Office of Arts and Culture
OEM	Office of Emergency Management
OEQ	Office of Environmental Quality and Sustainability
OPS	Office of Procurement Services *(same as POM)*
ORM	Office of Risk Management
PBW	Department of Public Works
PKR	Park and Recreation Department
PNV	Department of Planning and Urban Design
POM	Office of Procurement Services *(same as OPS)*
SAN	Department of Sanitation Services
TRN	Department of Transportation

Box Plot Reference



Q1: *Quartile 1*, or median of the *left* data subset
after dividing the original data set into 2 subsets via the median
(25% of the data points fall below this threshold)

Q3: *Quartile 3*, median of the *right* data subset
(75% of the data points fall below this threshold)

IQR: *Interquartile-range*, Q3 - Q1

Outliers: Data points are considered to be outliers if
value < *Q1 - 1.5 x IQR* or
value > Q3 + 1.5 x IQR

City of Dallas

1500 Marilla Street
Council Chambers, 6th Floor
Dallas, Texas 75201

Agenda Information Sheet

File #: 22-282 **Item #:** D.

Environment Commission Update
[Kathryn Bazan, Vice-Chair, Environmental Commission]

City of Dallas

1500 Marilla Street
Council Chambers, 6th Floor
Dallas, Texas 75201

Agenda Information Sheet

File #: 22-283 **Item #:** E.

Leaf Blower Update Memo
[Susan Alvarez, Assistant Director, Environmental Quality & Sustainability]

Memorandum

CITY OF DALLAS

DATE December 30, 2021

TO Honorable Members of the Environment & Sustainability Committee: Paula Blackmon (Chair), Paul Ridley (Vice Chair), Carolyn King Arnold, Adam Bazaldua, Jaime Resendez, Jaynie Schultz, Chad West

SUBJECT **Additional Leaf Blower Information**

On December 7, 2021, the Committee was briefed on Leaf Blower Regulations and requested a memorandum that summarizes next steps with a focus on internal changes. Additionally, the Committee voted to send this item to the Environmental Commission, which is to engage stakeholders asap and return to Committee by September 2022.

This memorandum provides requested information on current City of Dallas municipal gas-powered landscape equipment use and related landscape service contracting. We anticipate convening a stakeholders working group in the new year in order to bring related recommendations forward in September 2022.

The Office of Procurement Services (OPS) records indicate one contract for landscape equipment, that are used by 12 departments. These contracts include options for electric, battery-electric and two-stroke equipment including a variety of mowers, string-trimmers, leaf blowers and other ancillary equipment. The City expends approximately $135,000 per year for this equipment.

Additionally, there are 11 active contracts for landscape services, that are used by 19 departments. These contracts rely primarily on the use of traditional gas-powered equipment. The City expends approximately $1.2 million per year for these services.

The City is currently drafting specifications for a new procurement for grounds maintenance services that it plans to release in January 2022. Additionally, OPS is working with Dallas Water Utilities to explore using goats for vegetation abatement and maintenance through a Request for Information that is scheduled to close in early January 2022.

Staff are presently working from this contracting information, and are obtaining other national, state and department-provided data on staffing and resources used for landscaping, to allow an assessment of order-of-magnitude level budget impacts associated with equipment, contracting and staff costs from the conversion to electric/ battery-powered equipment. Costs will be assessed for initial purchase, operation and maintenance, and related staff time.

Staff are continuing research into how other cities are implementing gas-powered landscape ordinances including stakeholder engagement, phased implementation, community and professional education, enforcement, and best management practices for

addressing potential equity impacts from equipment conversion, including, but not limited to industry impacts (including small businesses), and residential equipment exchange programs.

Additionally, the issue has been brought forward to Environmental Commission for their input, and staff are currently reaching out to business and community stakeholders. Mr. Ryan Skrobarczyk, Director of Legislative & Regulatory Affairs for the Texas Nursery & Landscape Association, spoke at the recent Environmental Commission meeting on December 17, 2021, and staff have reached out to him as a stakeholder of this process.

If you have questions, or need additional information, please contact Sheila Delgado, OEQS Interim Director (214-670-1642) or OPS Director, Chhunny Chhean (214-671-3519).

Joey Zapata
Assistant City Manager

c: T.C. Broadnax, City Manager
Chris Caso, City Attorney
Mark Swann, City Auditor
Bilierae Johnson, City Secretary
Preston Robinson, Administrative Judge
Kimberly Bizor Tolbert, Chief of Staff to the City Manager
Majed A. Al-Ghafry, Assistant City Manager
Jon Fortune, Assistant City Manager
Dr. Eric A. Johnson, Chief of Economic Development and Neighborhood Services
M. Elizabeth Reich, Chief Financial Officer
M. Elizabeth (Liz) Cedillo-Pereira, Chief of Equity and Inclusion
Directors and Assistant Directors

Estimate of Potential Budget Considerations for Landscape Equipment

Cost Category	Two-stroke motor	Electric/ Battery	Cost Difference
Equipment – Initial Costs			
Leaf Blowers			
String Edgers			
Mowers			
Ride-on Mowers			
Equipment – Operations & Maintenance/ Year			
Leaf Blowers			
String Edgers			
Mowers			
Ride-on Mowers			
Total Equipment Costs /Year			
Leaf Blowers			
String Edgers			
Mowers			
Ride-on Mowers			
Average Staff Time – Cost / Year			
Contracted Landscape Services / Year			
Total Estimated Landscape Costs/ Year			
Notes & Key Assumptions:			