BUILDING ELECTRIC VEHICLE INFRASTRUCTURE

Louisa Reilly

THE FORD ELECTRIC VEHICLE STRATEGY

WHAT YOU NEED TO KNOW

- Target the market for **EV commercial vans and pickups.**

- **Largest** public charging network!!

  - 63,000 charging plugs and growing!

- 2,300 EV-certified dealers

  - plus 644 EV-certified commercial vehicle centers.

- 4 EV manufacturing plants in North America
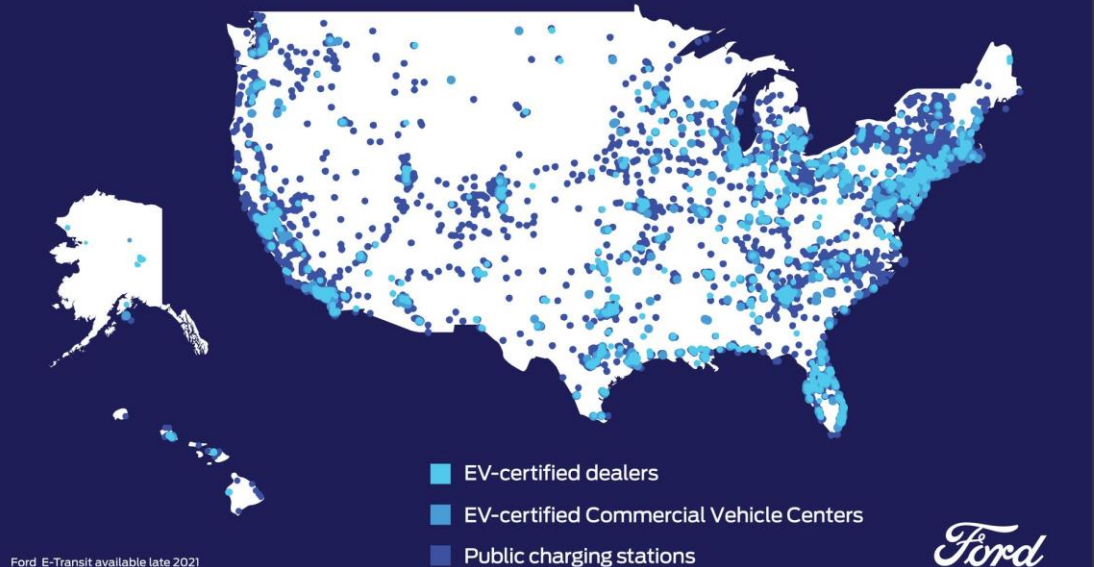
- Achieve carbon neutrality globally by 2050!

U.S. DEPARTMENT OF ENERGY

EV CHARGING FUNDING OPPORTUNITY

- $20 million allocated
    - Accelerate EV adoption
    - Supporting EV infrastructure

- Demonstrate EV technologies and infrastructure for various applications.

- Projects of interest:
    - Accelerate clean energy jobs
    - Provide EV transportation to under-served communities

2022 Ford E-Transit Backed by Powerhouse Dealer and Charging Network

Ford E-Transit available late 2021

- EV-certified dealers
- EV-certified Commercial Vehicle Centers
- Public charging stations

Ford

TARGETING RURAL COMMUNITIES

Building their EV Infrastructure

RURAL COMMUNITIES VS THE NATIONAL AVG

Category	Rural Rate	National Rate
Living Below Poverty Line	11.8 %	12.5 %
Unemployment Rate	3.9 %	5.0 %
Car-free Households	8.6 %	4.4 %
Senior Population (65+)	18.4 %	16.0 %

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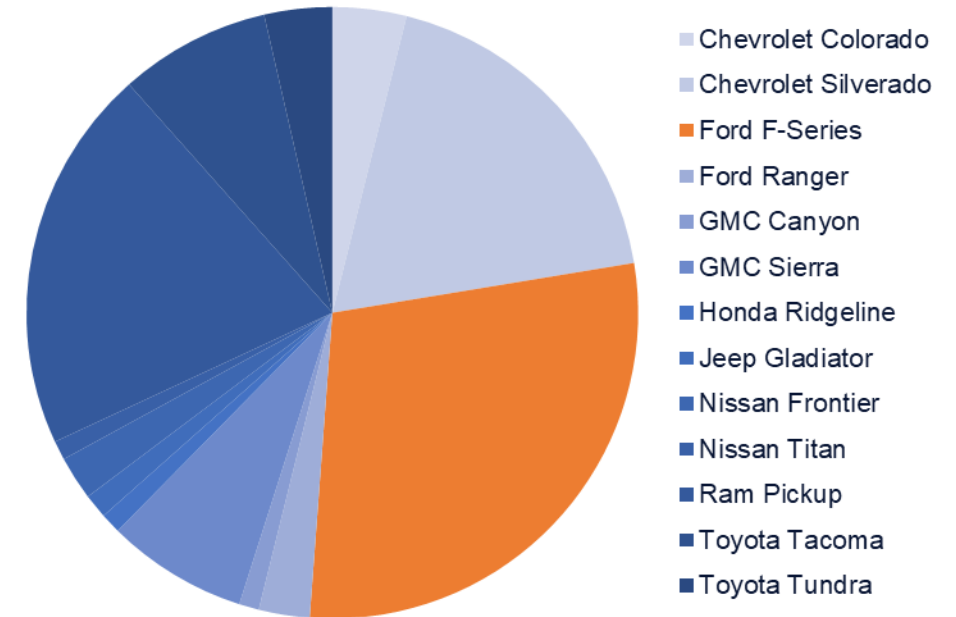| Category	Rural Rate		National Rate
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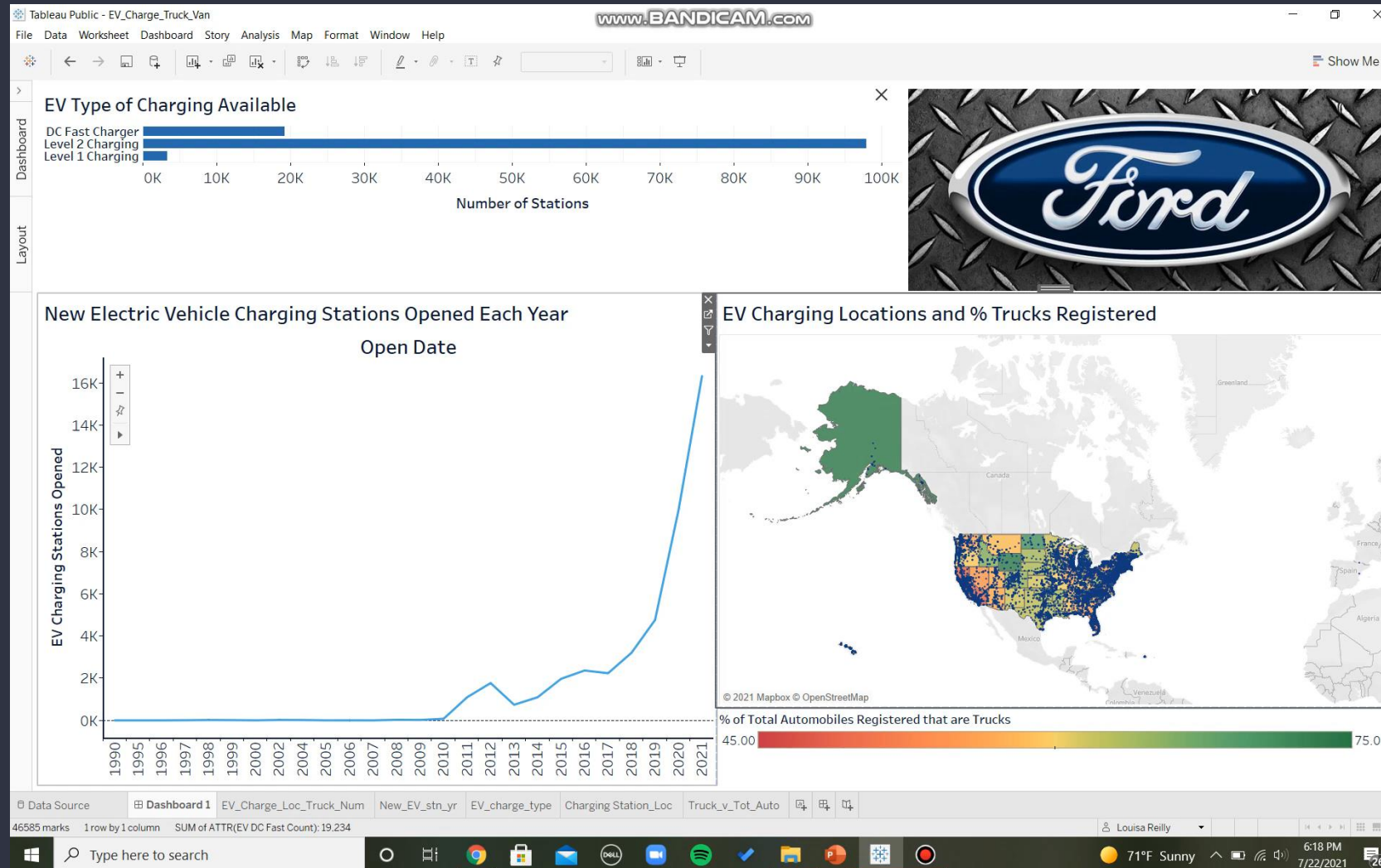**FINDING OPTIMAL EV CHARGING STATION LOCATIONS FOR TRUCK OWNERS**

IMPACT AND SOLUTION

1. Building more charging stations to support the sale of EVs for trucks.

2. Supporting rural communities.

- Data Science Soln:
  - Clustering Analysis
    - Unsupervised Learning
    - K-means clustering

Ford F-Series Dominates 2019 Pickup Sales

- Chevrolet Colorado
- Chevrolet Silverado
- Ford F-Series
- Ford Ranger
- GMC Canyon
- GMC Sierra
- Honda Ridgeline
- Jeep Gladiator
- Nissan Frontier
- Nissan Titan
- Ram Pickup
- Toyota Tacoma
- Toyota Tundra

Centroid

MORE CHARGING STATIONS FOR TRUCK OWNERS!

Technical Success Measures

- Clustering Tendency
  - Hopkins test
- Number of Optimal Clusters
  - Square root of N/2
- Clustering Quality
  - Silhouette coefficient

Non-Technical Success Measures

- Increase Ford F-150 Sales
- Increase in FordPass app downloads
- Increase in FordPass app usage
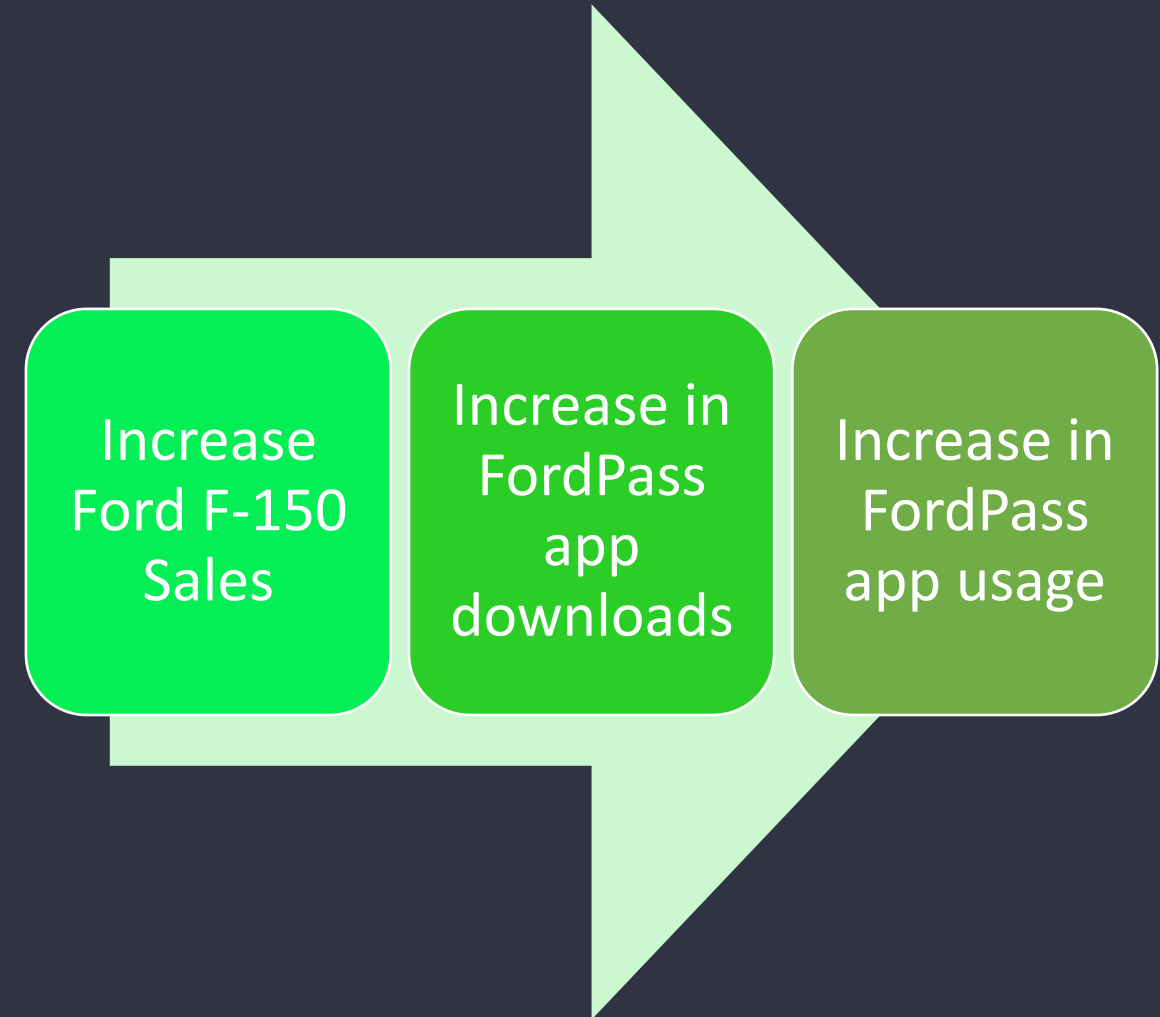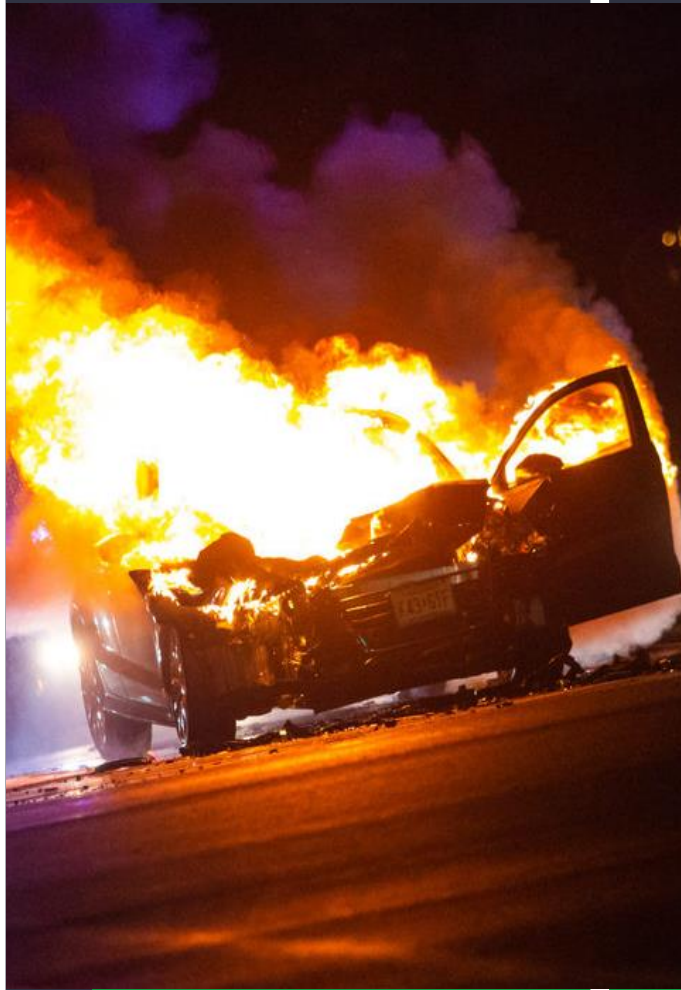
Assumptions

- Uniform distribution

- EV conversion

- Ford >>> other EVs

- Affordability

Risks

- EV station usage

- Copper theft

- Circuit breaker failure

- Inclement weather

THANK YOU

Any Questions?