



September 28, 2015

USPS Fleet Procurement for the 21st Century

Key Findings

- The United States Postal Service (USPS) recently announced that it plans to replace its fleet of Grumman Long Life Vehicles (LLVs) with up to 180,000 identical “Next Generation Delivery Vehicles” (NGDVs). The analysis detailed in this report finds, however, that an alternative approach using a mix of lightly modified off-the-shelf vehicles could generate nearly \$2 billion in savings for USPS while providing a valuable opportunity for fiscal reform.
- USPS has determined the cost of its proposed NGDV fleet to be approximately \$6.3 billion. It plans to keep these vehicles in service for the next 20–25 years.
- The average LLV age is 23.5 years—nearly the end of an expected service life of 24 years—with some vehicles in the fleet dating back to 1987. This outdated fleet averages only 10 miles per gallon, lacks modern safety equipment, and requires high-cost, ongoing maintenance.
- Making a one-time bulk purchase as is proposed condemns the Postal Service to a fleet of vehicles that has no ability to incorporate new technologies over time, little flexibility to adjust to changes in market dynamics over the next two decades and—if the vehicles are custom-built exclusively for USPS—very little resale value in secondary vehicle markets.
- A smarter, more efficient, and cost-effective way to spend postal funding would be for USPS to purchase a mixed fleet of off-the-shelf vehicles that are slightly modified for the routes and terrains for which they will be used and upgrade the fleet at least once in the next 20–25 years.
- Fleet managers around the world, including private-sector package delivery services like FedEx and UPS, and virtually all non-U.S. national postal services, purchase or lease a mix of modified off-the-shelf vehicles that fit their needs.
- This more flexible approach would save USPS an estimated \$1.9 billion over the next 25 years through lower maintenance costs and higher fuel efficiencies, giving the service more predictable operating costs. It would also allow USPS to more regularly take advantage of the latest vehicle safety features and ensure the Service remains relevant in a rapidly changing market environment.

- As the operator of one of the world's largest civilian vehicle fleets, reducing USPS's oil consumption through greater fuel efficiency would generate national and economic security benefits for the country as a whole, offering it insulation from the volatility inherent to the global oil market.
- In its last major fleet procurement, USPS missed out on several critical safety developments for its drivers that are now standard in newer vehicles, including airbags, anti-lock brakes, and intermittent wipers. New safety technologies including forward collision warning systems, electronic stability control, and crash imminent braking stand to further improve the safety of road-going vehicles and better protect the USPS staff that drive them.

Background

In January 2015, the U.S. Postal Service issued a Request for Information (RFI) to identify companies that will compete in the fall of 2015 to build a prototype of the USPS's Next Generation Delivery Vehicle (NGDV). The Postal Service expects to issue a Request for Proposal (RFP) in late 2015 for as many as 180,000 vehicles with a price tag of approximately \$6.3 billion. As identified in the RFI, USPS is considering purchasing its new fleet with a strategy similar to that used in the 1980s—awarding a single automotive supplier a contract to develop and manufacture a purpose-built vehicle exclusively for the USPS that it will keep in service for the next 20 years and use for 99 percent of its delivery routes. USPS expects to pay between \$25,000 and \$35,000 for each vehicle and receive them over 5–7 years, beginning in January 2018.

Operating one of the world's largest civilian fleets requires that USPS have an efficient and cost-effective approach to buying these vehicles. The service should focus on achieving the lowest total cost of ownership (TCO) for its fleet, while ensuring long-term flexibility to adopt the latest safety and technological innovations and improving its ability to adapt to a changing business environment. SAFE commissioned Dr. Robert Wescott, former Chief Economist at the White House Council of Economic Advisors (1993–94) and Founder of Keybridge LLC, to determine a more cost-effective approach to fleet acquisition. The Keybridge analysis finds that USPS can realize significant savings by:

- Purchasing a mixed fleet of off-the-shelf vehicles that are slightly modified for the routes and terrains for which they will be used, rather than a fleet of a single, purpose-built vehicle, as it did in its last procurement.
- Turning over its fleet at least once during the next 20–25 years, rather than keeping all of its vehicles for the entire term, as it did in its last procurement.

Off-the-Shelf Vehicles Have Lower TCO than Purpose-Built Vehicles

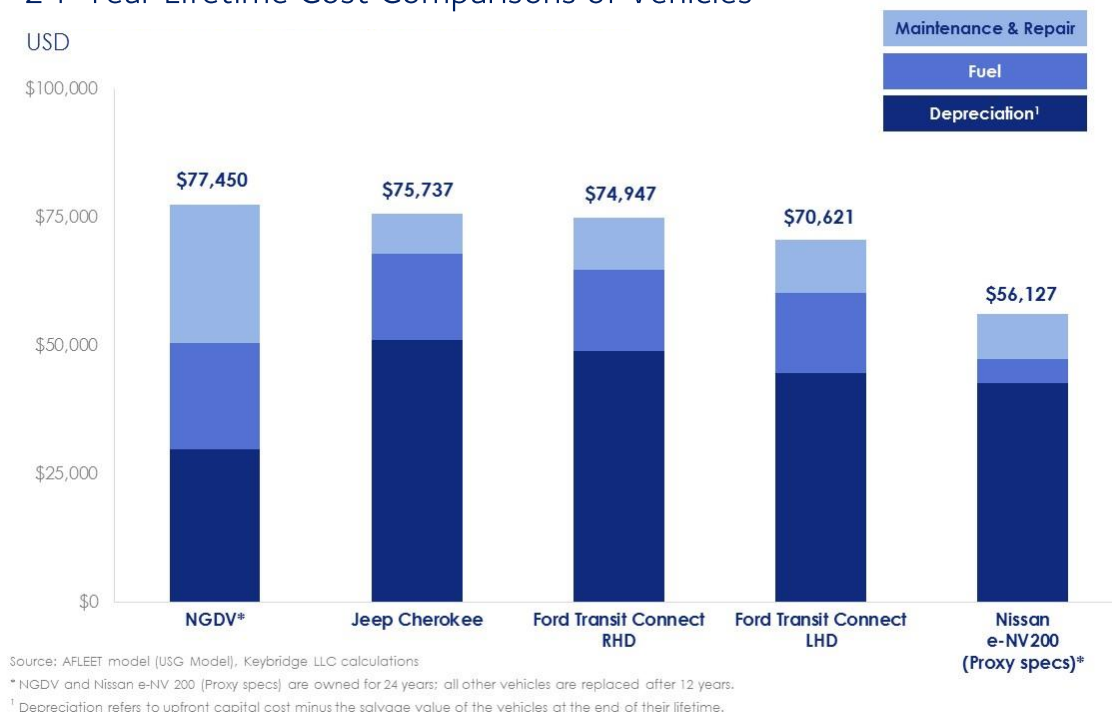
Buying or leasing a fleet of customized off-the-shelf vehicles and replacing them after 12 years could save USPS \$1.9 billion over 24 years. Using the U.S. Department of Energy's AFLEET model, Keybridge LLC calculated that a fleet of off-the-shelf vehicles will have lower fuel and maintenance costs, as well as a higher residual value, than a fleet of the purpose-built vehicles outlined in the January 2015 RFI, and that these savings more than offset the increased cost of purchasing the vehicles more frequently with the added advantage of allowing USPS to constantly adopt new technologies, increasing fuel efficiency, safety, health, and comfort.

Keybridge compared a sample fleet of representative vehicles to the purpose-built vehicle detailed in the RFI—the Jeep Cherokee, the Ford Transit Connect (both right- and left-hand drive for different

route requirements—RHD and LHD) and the Nissan e-NV200—and each was shown to have a lower TCO than the purpose-built vehicle over a period of 24 years.¹

Under two different scenarios—one encompassing the two Ford Transit Connect models (LHD and RHD) and the Jeep Cherokee, and the other adding the Nissan e-NV 200 to the Ford models and Jeep Cherokee—Keybridge found that the government could save \$1.7 and \$1.9 billion respectively over 24 years.² This is due, in part, to the fact that purchasing multiple vehicles enables USPS to assign the most effective vehicle for each route. Comparatively, if USPS uses a single vehicle model for 99 percent of its delivery routes, the vehicle would have to be large enough to serve the most intense routes and would therefore be more expensive.

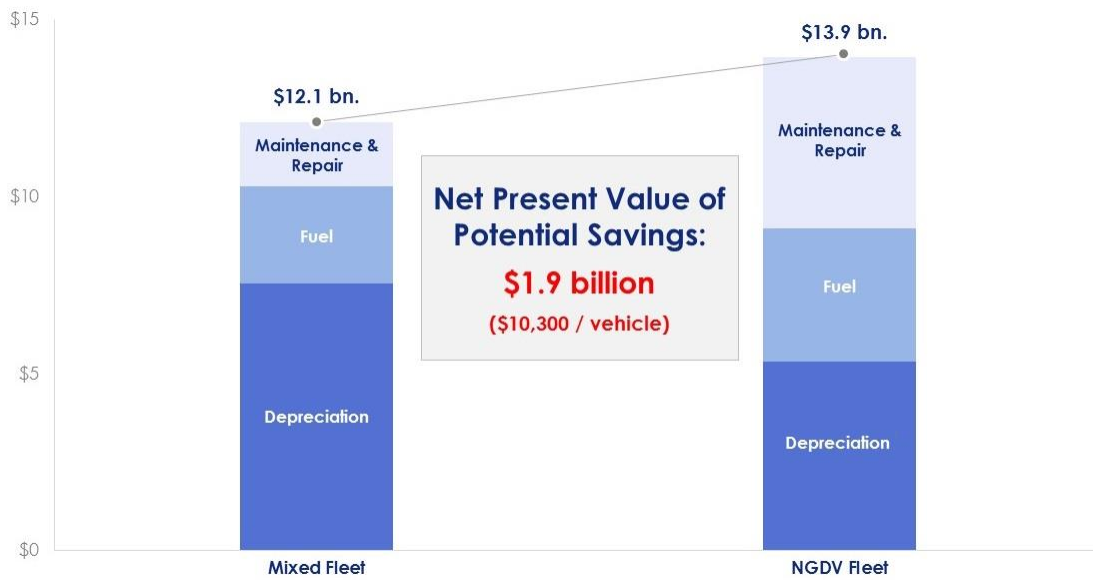
24-Year Lifetime Cost Comparisons of Vehicles



¹ Assuming the NGDV and the Nissan e-NV 200 were each owned for 24 years, while the other vehicles had to be replaced after 12 years.

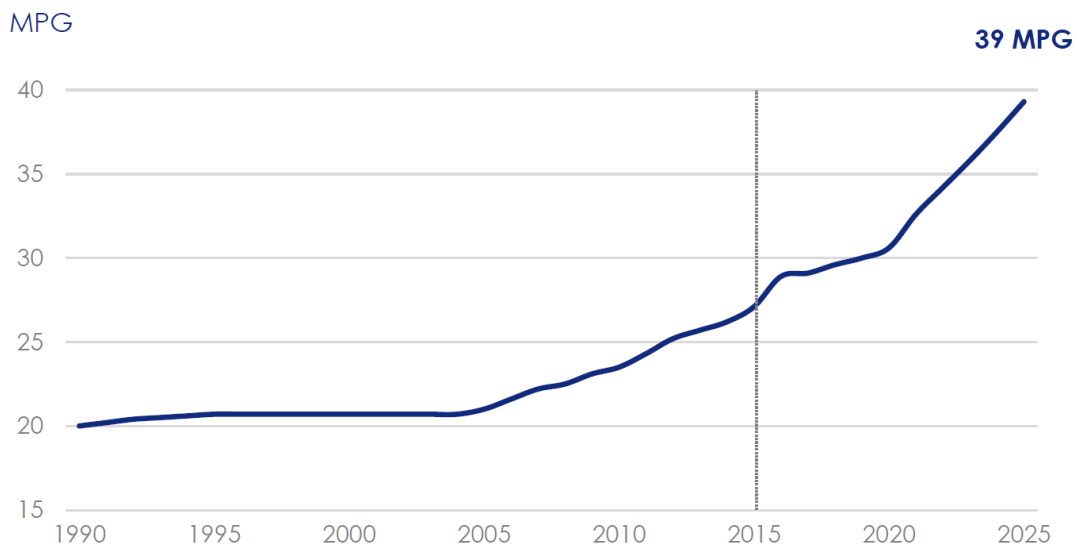
² Once a USPS 'Needs Assessment' is made public, these expected savings will be updated based on a more specific mix of vehicles depending on route and terrain.

Mixed Fleet Savings Compared to NGDV Fleet



The current fleet of Grumman LLVs averages only 10 MPG, mostly because of the size and age of the fleet. While increases in fuel economy over the last quarter-century mean that most vehicles—including the proposed purpose-built vehicle in the RFI—have better gas mileage, the large size of this single vehicle would still mean that the fleet’s overall fuel cost would be significantly more expensive than it should. Smaller, more fuel efficient vehicles for less demanding routes will enable USPS to spend much less money to fuel its fleet.

Federal Fuel Economy Standards: Light-Duty Trucks



A Planned Turnover Model Improves Fuel Efficiency and Enables USPS to Quickly Adopt New, Lower-Cost Business Models

USPS operates in a rapidly changing market environment, so updating its fleet at least once over the next 25 years will be critical to maintaining its ability to compete. USPS is quickly becoming a package delivery service. For example, as first class mail has declined in volume by about a fifth in the last five years, package delivery has increased by roughly the same amount. USPS's Parcel Select business has reflected this, growing by about 500 percent since 2010.

The nature of routes is also changing. The number of service addresses, delivery addresses and postal routes have all increased over the last decade. As more and more of the U.S. population moves to cities, for example, more urban deliveries will require more left-hand-drive vehicles to drive city streets, rather than right-hand-drive vehicles for door-to-door deliveries. Decreasing or increasing delivery days may also affect the size or type of vehicle fleet that USPS will need.

Reconfiguring a large portion of the service's fleet after 12 years would also lower fuel costs, taking advantage of newer vehicles with better fuel economy. The more fuel-efficient the fleet, the more predictable its operating costs will be, and the less exposure it will have to volatile oil prices. USPS will be even more insulated from oil price movements if it decides to deploy alternative fuel vehicles (AFVs) in its present or future fleet.

A Planned Turnover Approach Enables USPS to Take Advantage of the Latest Safety and Technological Innovations

By bulk-purchasing vehicles that were designed in the 1980s in its last procurement, USPS missed out on several critical safety developments for its drivers that are now standard in newer vehicles. Airbags, anti-lock brakes, rearview cameras, seatbelt reminders, daytime running lights, blind-spot warning lights and intermittent wipers are just a few of these. Several new safety technologies, including forward collision warning systems, automatic crash notification systems, electronic stability control, dynamic brake support (DBS), and crash imminent braking (CIB), stand to further improve the safety of road-going vehicles and better protect the USPS staff that drive them.

In addition to current and forthcoming safety technologies, several additional improvements are expected to become available over the next 20-25 years that will enable USPS to optimize its fleet and better service its routes. These could include idle time reduction, sophisticated on-board diagnostics, speeding oversight, route optimization, package delivery optimization and autonomous vehicles.

As General Motors CEO Mary Barra said at the 2015 Frankfurt International Motor Show, "We will see more change in the industry in the next five to ten years than we have in the last 50." This view is shared by most in the automotive industry, making now a particularly bad time to lock oneself into a technology pathway, greatly limiting flexibility.

By updating its mixed fleet at least once over the next 25 years, USPS can ensure it has the flexibility to choose the best vehicle for specific routes based on payload capacity, route characteristics and terrain. This would improve the fleet's overall efficiency while reducing its upfront lifecycle cost.

Up-and-Coming Vehicle Technologies:

1. **Idle Time Reduction:** GPS tracking technology can monitor idle time and help management produce tailored idle time reduction goals.
2. **Improved Maintenance:** Monitoring of on-board vehicle diagnostics can help reduce field breakdowns, as drivers will be directed to bring vehicles in for repairs as problems arise.
3. **Speeding Oversight:** Excessive speeding can reduce fuel economy by up to 20%. Improved monitoring of vehicle speeds can help conserve fuel.
4. **Route Optimization:** Telematics can be leveraged to direct drivers to take the most cost- and time-effective routes (can be modified in real time, due to traffic or weather).
5. **Package Delivery Optimization:** Scanning technology can be integrated into vehicles to track mail in real time.
6. **Autonomous Vehicles:** At some point, self-driving vehicles may become appropriate as a component of the USPS' fleet.

Using a Mixed Fleet of Off-the-Shelf Vehicles is Considered Global Best Practice

Fleet managers around the world, including private-sector package delivery services like FedEx and UPS and virtually all non-U.S. national postal services, purchase or lease a mix of customized off-the-shelf vehicles that fit their needs. LLV-style vehicles are both more expensive than commercially produced vehicles because of economies of scale, as well as less able to take advantage of new and important safety features that are developed every year.³

³ USPS IG Report DR-MA-14-005, "Delivery Vehicle Fleet Replacement" (2014).

POTENTIAL REASONS TO FAVOR NGDV BULK PURCHASE

USPS needs to procure vehicles immediately.

No single off-the-shelf vehicle meets all USPS specs, so a purpose-built NGDV is needed.

USPS needs to be able to adapt to potential changes in mail delivery.

USPS vehicles experience more “wear and tear” than off-the-shelf vehicles can handle.

Maintenance efforts are more efficient (and less costly) if only one type of vehicle is used.

BENEFITS OF PROPOSED STRUCTURE

- Procuring purpose-built vehicles through the federal acquisitions process will be expensive and time-consuming.
- Tens of thousands of off-the-shelf vehicles common in other postal fleets could be obtained quickly and at lower cost.
- By requiring that virtually all vehicles can service virtually all routes, USPS is overspecifying its fleet — at a substantial cost.
- For example, It is highly unlikely that 99% of routes require all-wheel drive or right-hand drive.
- By replacing its fleet at scheduled intervals, USPS can stay responsive to changing delivery needs, such as an adjustment in the number of delivery days, a changing mail mix, or technological advance.
- Vehicle parts facing the most operational damage (e.g., doors), could be replaced regularly at relatively low cost.
- USPS could also customize off-the-shelf vehicles with heavier-duty parts where they are needed — again, at minimal cost.
- A planned turnover model would lower maintenance costs by replacing trucks before they break down frequently.
- Moreover, vehicle parts for off-the-shelf vehicles can be quickly and inexpensively acquired and installed.

Conclusion

The financial, economic, and safety benefits of a procurement strategy based on a fleet of mixed, off-the-shelf vehicles make it a superior approach, grounded in the practical experience of multiple companies and organizations in the United States and around the globe, with significant potential cost savings for the Postal Service. In light of this analysis, the USPS should consider all of its options before moving forward with its fleet turnover, accounting for fuel efficiency and maintenance costs, alternative fuel sources, and driver safety.