UNITED STATES
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U S Postal Service
Fleet Planning and Management

GovEnergy 2007

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Topics

- Fleet overview
- Mileage reduction strategies
- Alternative fuel vehicles
- Light duty fleet replacement planning

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Largest Civilian Vehicle Fleet

- U.S. Postal Service: 215,000 vehicles
- GSA: 172,677 vehicles
- UPS: 88,000 vehicles
- State of CA: 48,500 vehicles
- FedEx: 40,000 vehicles

Postal Owned Vehicles in Fleet

■ Mail Delivery Vehicles	
– Long Life Vehicles (LLVs)	142,000
– Flexible Fuel Vehicles (FFVs)	31,000
■ Class 8 tractors	1,800
■ Spotter Tractors	400
■ Class 7 Cargo van	2,500
■ Class 3/4 (step van)	8,500
■ Other Delivery and Admin Vehicles	22,000

USPS VEHICLES

5 Year Plan – Reduce Miles by 5%

- Nearly 2 million new delivery addresses are added each year
- Mileage reduction strategies for
  - City delivery routes
  - Rural routes with USPS vehicles
  - Postal Vehicle Service (PVS) - mail transport
  - Non Mail Hauling Vehicles

USPS VEHICLES

5 Year Mileage Reduction Plan

- **City Delivery Strategies**
  - **Manage miles – Actual vs. Authorized**
  - **Route Reductions**
  - **Route Optimization**
  - **Growth Management**
  - **Right size the fleet**

USPS VEHICLES

5 Year Mileage Reduction Plan – City Delivery

- **Manage miles – Actual vs. Authorized**
  - **Review daily mileage deviation reports**
  - **Pivoting plans incorporate geographic locations into decision process**
    - **Route Proximity Report**
    - **Pivoting Projection and Staffing Model**
  - **Manage mileage deviations through Managed Service Points**

USPS VEHICLES

5 Year Mileage Reduction Plan – City Delivery

- **Route reductions**
  - **Absorb new deliveries**
    - **900 delivery routes worth/year**
    - **Eliminates drive-out miles of new routes**
  - **Continue route reduction strategies**
    - **Standard route evaluation process**
    - **New automation impacts**

USPS VEHICLES

5 Year Mileage Reduction Plan – City Delivery

- **Route optimization**
  - **Carrier Optimization Routing program**
    - **Optimization of lines of travel**
    - **Reduces “fractured routes”**
    - **Reduce the number of parking points**

Carrier Optimal Routing Program

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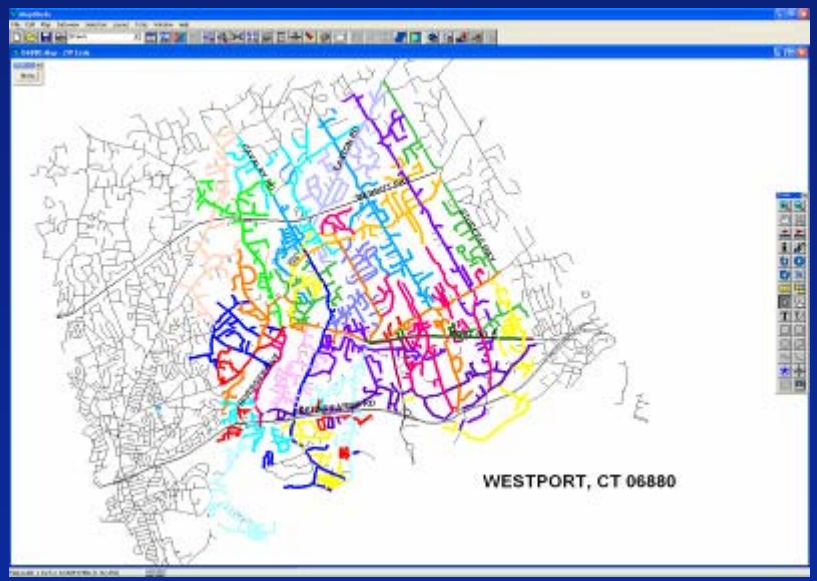
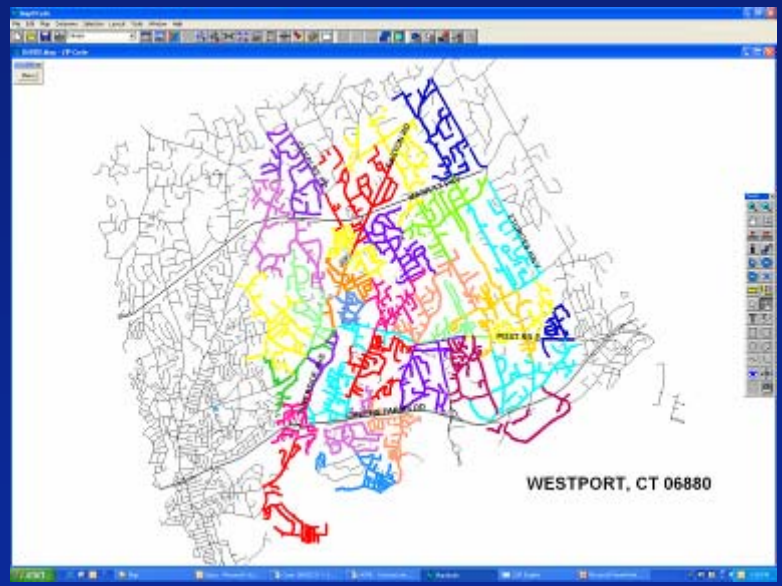
Original



Optimized



USPS VEHICLES

5 Year Mileage Reduction Plan – City Delivery

- **Growth management**
  - **Expand use of centralized delivery**
- **Right size the fleet**
  - **Eliminate excess vehicles**

USPS VEHICLES

5 Year Mileage Reduction Plan

- Rural routes
  - USPS vehicles
    - 26,000 by 2008
      - 15% of USPS owned delivery vehicles
  - Implement actual vs. authorized mileage on postal owned vehicles

USPS VEHICLES

5 Year Mileage Reduction Plan – PVS

- **Reduce total trips**
  - **Computerized container and load tracking**
    - **Improves truck utilization**
    - **Reduces extra trips**
  - **Rationalization of surface transportation requirements**
    - **Coordinated actions with Network Operations and Supply Management**

USPS VEHICLES

5 Year Plan – Non Mail Hauling Vehicles

- Reduce miles by reducing vehicles
  - New minimum use policy
    - 300 miles or 12 days used per month
  - Monthly tracking
  - Moratorium on purchase

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Alternative Fuel Program History

- 1899 – First electric vehicle in NY
- 1959 – Electruck tested – Jeep Model
- 1979-1984 – Jeep CNG vehicles used
- 1991-96 – 7,500 LLVs conv. to CNG
- 1997 – 35 LLVs conv. to propane
- 1998-99, 2003 – 27,000 FFVs
- 2001 – 500 electric vehicles
- 2003 – 20 electric 2-ton vehicles
- 2004 – Hydrogen fuel cell minivan test started
- 2005 – 2-ton vehicle conv. to electric hybrid
- 2005 – 10 hybrid electric Ford Escapes test

Ethanol E85

- Experience
  - Test Sites: Nationwide
  - Vehicles: 36,491
  - Flex fuel vehicle models:
    - 21,275 LLVs
    - 9,360 Dodge Caravans
    - 5,856 Chevrolet Uplanders

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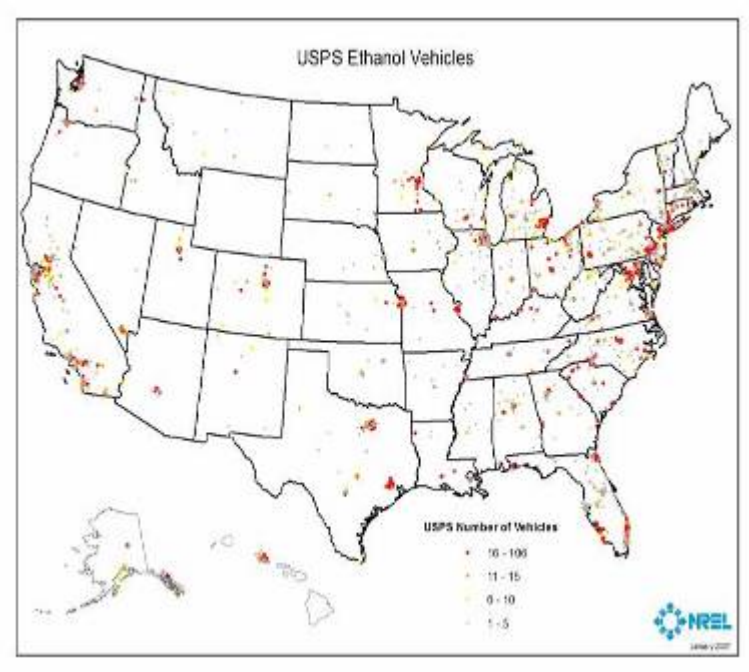
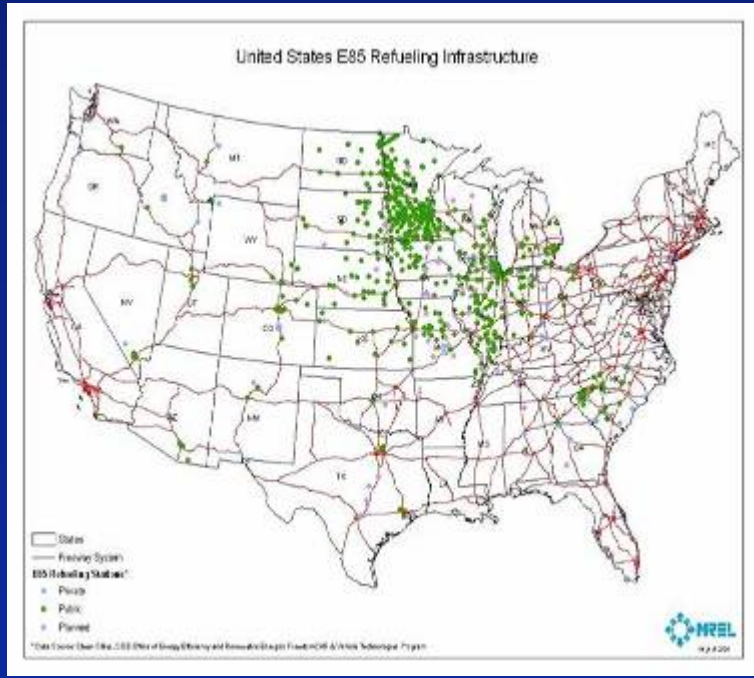
Ethanol E85





Ethanol E85

- Lessons Learned
  - Only 1,100 retail sites sell ethanol, primarily in Mid-West
  - External support needed to increase the infrastructure
  - Vehicle Manufacturers are only selling 6 and 8 cylinder ethanol capable vehicles
    - Oversized for USPS requirements
      - Increased gasoline consumption by 1.5 million gallons

Ethanol E85

- Lessons Learned (Cont.)
  - E85 Decreased overall fuel efficiency of 29%
  - The price must be at least 30% less than gasoline to be a cost-effective
  - In FY 2006, the Postal Service used over 375,000 gallons of ethanol
  - No changes in technology or use

Ethanol E85

- Next Steps
  - Increase use of fuel when competitively priced and conveniently available
  - Take lessons learned from MN and apply to other Midwestern locations
  - Focus new vehicle deployment to locations with convenient and economically priced ethanol

Ethanol E85

- **Northland District – Ethanol Fuel Use**
  - Increased its use of E85 in its delivery fleet by 64.65% in 3 years
  - MN Lung Association and state worked to increase the number of E85 retail sites
    - Ethanol stations increased from 15 to over 200 sites in the last 5 years
  - Managed the placement of 584 ethanol capable vehicles to increase E85 use

Compressed Natural Gas

- **Experience:**
  - Test Sites: Nationwide
  - Vehicles: 7,500 converted in early 1990s
  - Models: LLV
  - Test Dates: Mid 1990s
- **Used CNG retail fuel sites**

Compressed Natural Gas

- **Lessons Learned**
  - 2 of 3 conversion kit manufacturers have gone out of business
  - No decrease in overall maintenance
  - Less than 1,000 vehicles use CNG currently
  - Gas companies pulled CNG availability at retail stations due to reduced demand

Compressed Natural Gas

- **Next Steps**
  - Identifying all vehicles still using CHG
  - Evaluate impact of long term use of CNG
  - Identify fueling scenarios that make economic sense
    - Inexpensive fuel, available infrastructure
    - Inexpensive re-fueling options in smaller offices

Propane

- **Experience:**
  - **Test Sites: Key West, FL**
  - **Vehicles: 35 Converted in the late 1990s**
  - **Models: LLVs**
  - **Test Dates: Late 1990s**

Propane

- **Lessons Learned**
  - Conversion kit produces more emissions than gasoline and more flammable
  - Only LPG available on the island
  - Low-tech solution – no oversight required
  - Same cost as gasoline on a per gallon basis
- **Next Steps**
  - Keep supporting the project

Electric

- Experience
  - Test Site: CA and NYC
  - Vehicles: 530
  - Models: 500 LLVs (purchased in 2000) and 30 2-ton vehicles (purchased in 2003 and 2005)
  - Test Dates: 2000, 2003 - 2005
- Produces no emissions

Electric

- **Lessons Learned**
  - 500 LLVs manufactured by Ford in 2000
  - Battery production ended and vehicles were exchanged by Ford in 2002
  - 2-ton vehicles have performed well in NYC
  - Training required for new drivers
  - Unsure of long-term battery viability
- **Next Steps**
  - Continue to monitor NYC performance

Hybrid Electric

- **Experience:**
  - **Test Sites: VA, MA and CA**
  - **Vehicles: 12**
  - **Test Dates: 2003 - present**
  - **Models:**
    - **1-Toyota Prius,**
    - **10-Ford Escapes,**
    - **1-two ton vehicle (converted in 2004)**

Hybrid Electric

- **Lessons Learned**
  - Toyota Prius -- 24,000 mile durability test with no major problems
  - Ford Escapes -- 22 vs. 11.7 mpg vs. non-hybrids
  - Two-ton vehicle -- 21% mpg improvement
  - Not an EPAct Compliant fuel/vehicle
- **Next Steps**
  - Continue to monitor the batteries life

Hydrogen Fuel Cell

- Experience:
  - Test Sites: VA and CA
  - Vehicles: 2 GM Minivans
- Signed a three year agreement with General Motors
- No Emissions

Hydrogen Fuel Cell

- **Lessons Learned**
  - Reliable
  - 50% more efficient
  - Very limited infrastructure
  - At least 5-years before production
- **Next Steps**
  - Current test will be concluded in Sept.
  - Expect to test new Chevy Equinox in 2008

Clean Diesel Vehicles

- **Experience:**
  - **Test Sites: IL**
  - **Vehicles: 10**
  - **Models: Chrysler Jeep Liberty**
  - **Test Dates: 2005-present**
- **Easy to integrate into operations**

Clean Diesel Vehicles

- **Lessons Learned**
  - Lower emissions
  - Diesel is about the same price as gasoline
  - Jeep Liberty is no longer manufactured
  - Filled with B5 diesel off the assembly line
- **Next Steps**
  - Test LLV diesel conversion on all route types

Biodiesel

- **Experience:**
  - Test Sites: NY, FL, MI, MO
  - Vehicles: 929
  - Models: Heavy-duty trucks
  - Test Dates: 2001 - present

- **Fuel provided by local vendors or contractors**
- **NY only site currently participating**
- **Fuel dispensed from existing Postal Service tanks in NY**

Biodiesel

- **Lessons Learned**
  - **Improved emissions and comparable price to straight diesel**
  - **No changes in technology or use**
  - **Lack of B20 fuel standards results in inconsistent quality**
  - **Higher maintenance – fuel filter replacement and cold weather storage precautions**

Biodiesel

- **Next Steps**
  - **Expand use of biodiesel where possible**
  - **Provide necessary maintenance training**
  - **Undergoing fuel quality testing for bulk fuel deliveries**
  - **Further testing and analysis of fuel filters by NREL**

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Next Steps

- Monitor and test alternative fuels and alternative fuel vehicles
- Develop requirements for different segments of the delivery fleet
- Prepare for LLV replacement

USPS Delivery Vehicle Facts

- An “average” LLV
  - Is driven 16 miles/day, about 5,000 miles annually.
  - Is in service 5 - 6 hours a day, 302 days a year
  - Gets 10.4 MPG
  - Is 16 -17 years old (oldest - 20, newest - 13)
  - Is probably on its second engine, and 3rd or 4th transmission

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Miles per Gallon Efficiency

Vehicle Type	Park & Loop	Curbline	Rural
LLV (RHD)	10.4	9.6	11.9
FFV (RHD)	8.6	7.7	8.8
Minivan (LHD)	11.7	N/A	N/A
Jeep Liberty (LHD - diesel)	12.2	N/A	N/A
Ford Escape (LHD - hybrid)	19.8	N/A	N/A

Projected Investment Recovery Period Based on Increased Fuel Economy

Vehicle Type	Acquisition Costs	Length of time to recover investment difference based on fuel economy	
2005 Minivan (gasoline)	$19,448	-	
2007 Minivan (gasoline)	$15,501	-	
Ford Escape (hybrid)	$25,026	2007 15 + yrs.	2005 25 + yrs.

Vehicle Manufacturing Realities

- USPS is the largest civilian fleet in the world
- North American manufacturers produce 17M vehicles annually
- USPS fleet of 215,000 is 1.3% of annual total
- OEMs value our business for mainstream vehicles
- Our specialty vehicles (RHD & EPAct compliance) don't create big interest
- Our unique requirements appeal to non traditional companies and/or integrators

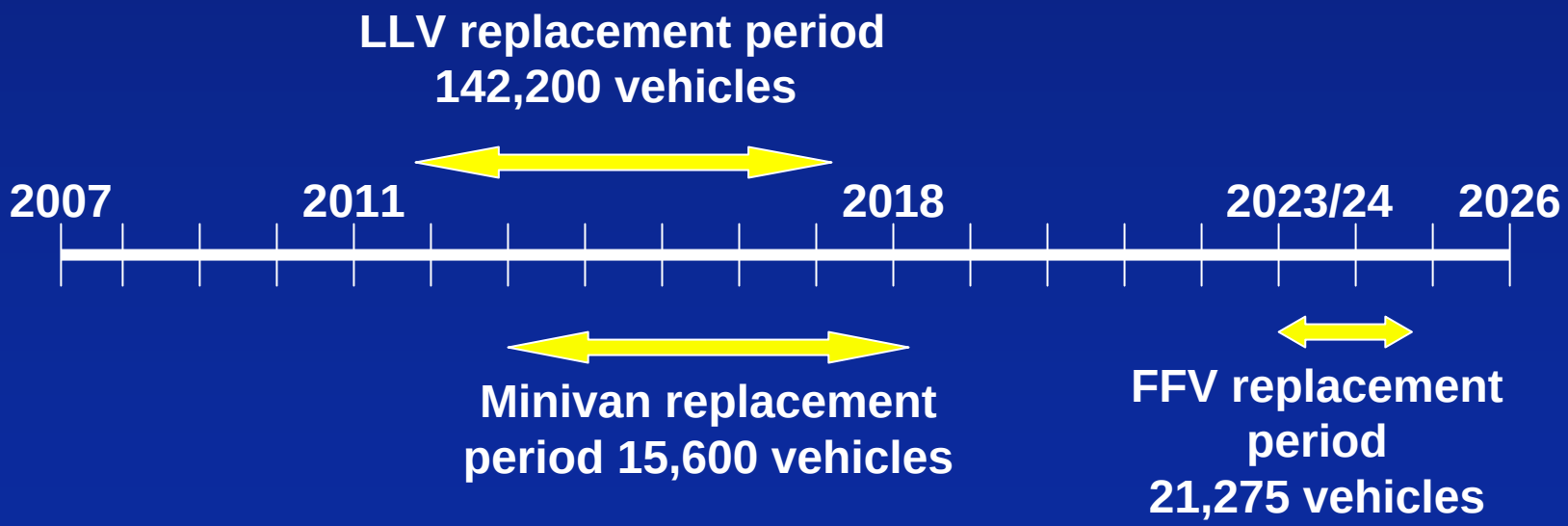
USPS Vehicle Replacement

- Less dependency on RHD vehicles
  - Many RHDs on P&L routes
  - Can be replaced with less expensive LHDs without adverse impact
- Implementation of new technology
  - Reduction in the number of routes means reduced vehicle requirements
- Future rural route vehicle commitments

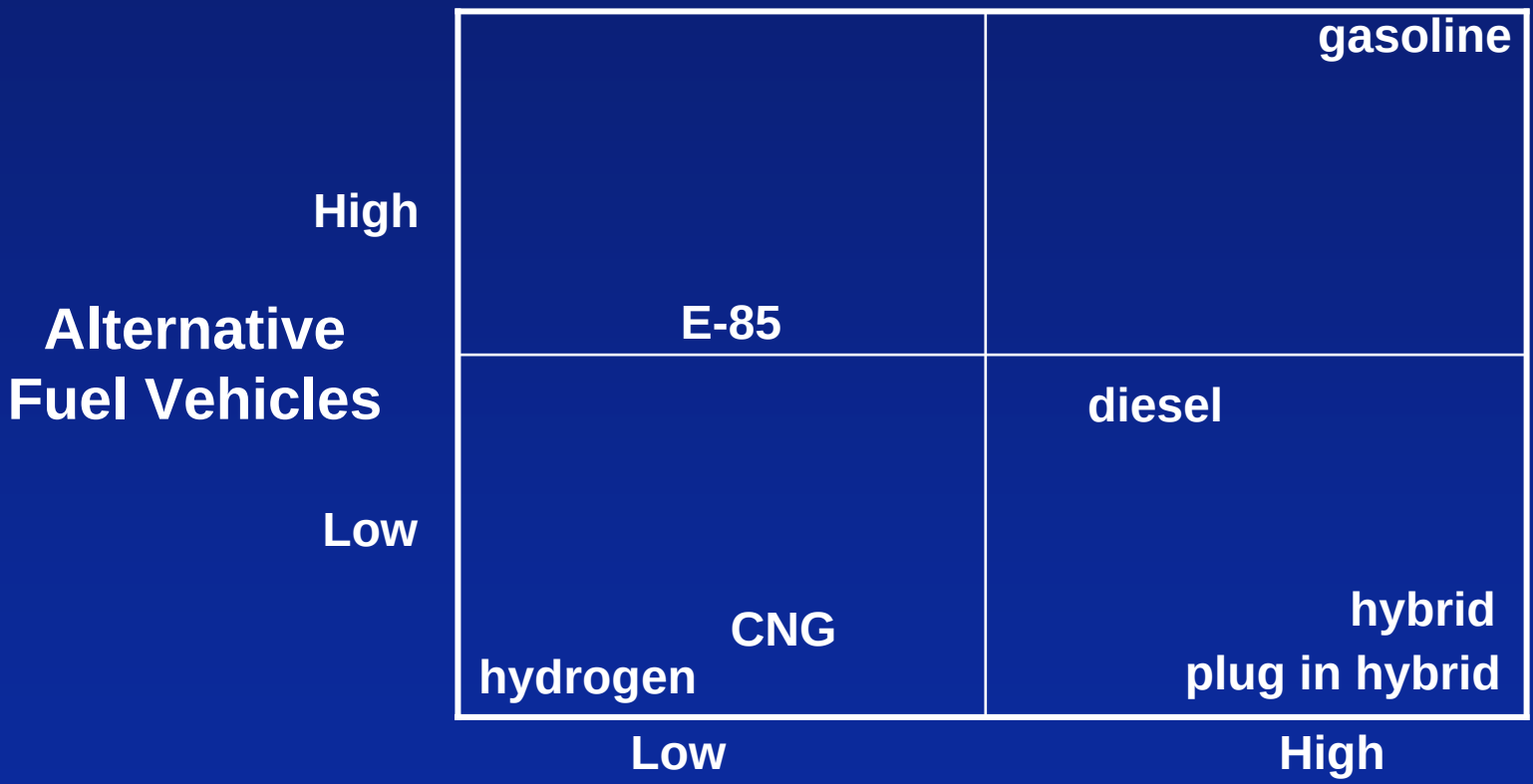
Carrier Route Vehicles Replacement

Tentative Timeline

179,300 Vehicles
including
163,700 right hand drives and 15,600 minivans



Projected Future (2010-2018) Availability



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Planning for the Future

- Keep a variety of options open
- Continue to test vehicles to understand fuel issues in USPS delivery environment