



# Joint Environmental Task Force Transportation Recommendations

Board Environmental Committee Meeting  
April 6, 2021

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Department of Transportation

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# JET Transportation Recommendations

- JET Report included 14 Recommendations (See Appendix)
- Categorized into 4 Topic Areas
  - Transit Bus Fleet
  - Non-Bus Fleet Replacement
  - Charging Infrastructure
  - Bike and Pedestrian
- Multiple County Agencies Prepared Staff's Response
  - DVS
  - FMD
  - DPWES
  - FCDOT



# Transit Bus Fleet

- Staff Response – Electric Buses:

- Recommend a pilot project. Two grant applications submitted. \$4.2M cost for four buses. Cost of changing infrastructure must be identified.
- Answer questions regarding fuel savings, additional personnel costs, and capital costs for buses and charging infrastructure.
- Connector fleet has 329 buses (model years 2007 to 2020). Lifecycle: 15 to 16 years.
- Replacing clean diesel buses with electric buses will cost an estimated additional \$95 M (FY2022 and FY2037).
- Ranges for current battery electric buses may not meet all the Connector’s service demands.
- Duty cycles are not currently 1 to 1 for medium and long-range routes.
- Complete conversion by 2030 is not feasible, since the current replacement cycle runs through 2037.
- Short Term Goals (Three Years):
  - Secure grant funding and order four buses. Delivery: approximately 12 months.
  - Secure charging equipment.
  - Utility coordination.
  - Test vehicles with multiple service and weather conditions.
  - Consider using electric buses for Richmond Highway Bus Rapid Transit project.
  - Prepare recommendations for additional electric bus purchases.
  - Seek additional grant funding (including Federal Transit Administration funding) to support future purchases.



# Transit Bus Fleet (Continued)



- **Staff Response – Transitional Costs:**

- Transit helps address carbon emissions. Continuing to look at the implications of zero-emission buses (ZEBs).
- More study is required to address the ‘unknowns’ on ZEB technology and ongoing costs. Once the answers are available, FCDOT can be better address the nexus between the social benefits and the costs.
- Environmental experts will need to help with evaluation of environmental impacts such as social costs.
- The electric bus pilot is the first step in understanding how ZEBs can meet JET recommendations.

- **Staff Response – Coordination – Bus and Vehicle Fleets**

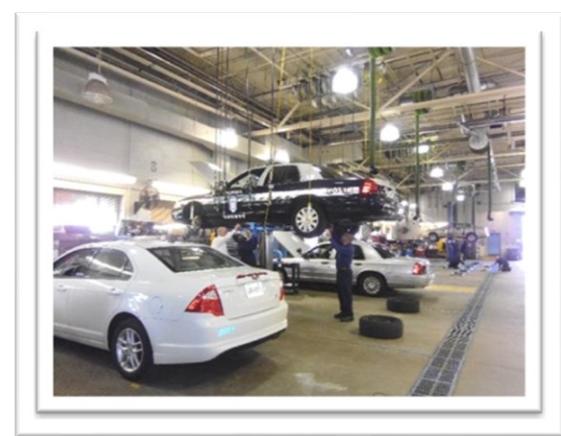
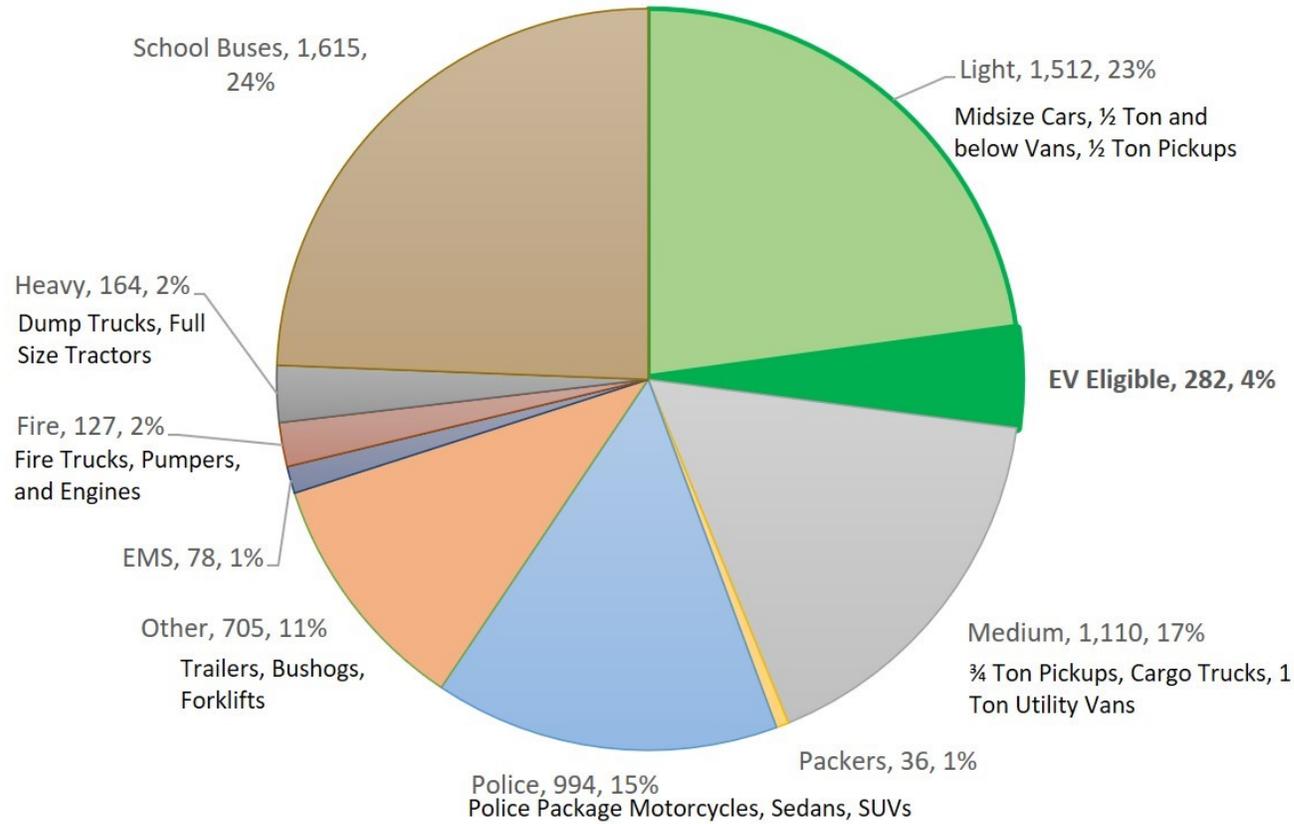
- FCDOT and FCPS staff have discussed coordinated implementation of charging infrastructure.
- School bus service differs from transit service.
- Buses are dissimilar (i.e., cost, duty-cycles, construction) and have different energy requirements.
- Consolidating charging infrastructure needs may allow for the County to take advantage of economies of scale.
- Coordination will continue to facilitate consistent charging infrastructure to the extent possible.

# The Manufacturers Pledges for an Electric Future

- **General Motors** will eliminate gas-powered cars by 2035 and be carbon neutral by 2040.
- **Ford** will be carbon neutral by 2050.
- **Volkswagen** will provide hybrid or electric versions of all models by 2030.
- **Volvo** plans to become all electric (will completely phase out both gas-powered and hybrid vehicles) by 2030.
- **Hyundai** will fully electrify its vehicles in “major global markets” by 2040.

# Fleet Units Totals by Type

March 2021



# Vehicle/Equipment Replacement Reserves

Examples of Replacement Criteria for Vehicles in the Replacement Reserve

	Age (Years)	Miles
Mid Size Sedans	8	85,000
Police Package Utilities	7	100,000
Mini Pickups/Vans	8	90,000
½ - 1 Ton Pickup/Van/4x4	10	110,000

Examples of Other Replacement Criteria

	Age (Years)	Miles
Ambulance	10	N/A
Heavy Duty Dump Truck	9	135,000
Transfer Tractor	10	300,000
Pumpers/Ladder Trucks/Air & Light	12 / 17	N/A
Trailer	12	N/A
School Buses	12	N/A

\* Vehicles must meet both age and mileage (when applicable).



## Going Electric: Making the Switch to EVs

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“One hundred percent of eligible vehicles scheduled for purchase in FY 2021 shall be replaced with EVs and the infrastructure needed can be supported in FY 2021.”

- Fairfax Green Initiatives (2a.)
- ✓ 14 Nissan Leaf's purchased in FY 2021
- ✓ 8 Nissan Leaf's to be purchased in FY 2022

# Charging Infrastructure

- Operational Energy Strategy includes the installation of Electric Vehicle Charging Infrastructure at up to 20 major government facilities by 2025.
- FMD leading construction of Level II at five sites scheduled for summer 2021

Government Center Parking Garage	1 space (8 in FY 2022)
Herrity Building	6 spaces
Merrifield Center	6 spaces
Pennino Building	6 spaces
Public Safety Headquarters	4 spaces



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# Charging Infrastructure (Continued)

## DPWES Projects

Braddock	Monument Drive Commuter Parking Garage & Transit Center	Fall 2023	20 spaces
Braddock	Stormwater Wastewater Consolidation Facility	Summer 2024	9 spaces
Dranesville	Innovation Center Station Parking Garage	Complete *	20 spaces
Hunter Mill	Herndon Station Garage	Complete *	20 spaces
Hunter Mill	North County Government Center & Police Station	Complete *	7 spaces
Lee	Franconia Government Center & Police Station	Summer 2024	up to 6 spaces
Lee	Kingstown Library & Police	Summer 2024	up to 6 spaces
Lee	Springfield Commuter Parking Garage	Spring 2023	8 spaces
Mason	Operational Support Bureau	Fall 2023	up to 6 spaces
Mason	Seven Corners Fire Station	Spring 2023	up to 6 spaces
Mount Vernon	Lorton Community Center	Spring 2022	5 spaces
Mount Vernon	South County Police Station & Animal Shelter	Winter 2023	3 spaces
Sully	Sully Community Center	Spring 2022	4 spaces

\* Project complete but charging stations have not been installed in spaces.

# Charging Infrastructure (Continued)

## Reserved Parking

- Reserved Parking at each County building for staff driving hybrid and electric vehicles is in the process of being addressed.



# Bike and Pedestrian

- **Staff Response - Improving Options for Safe Biking and Walking:**

- The Active Fairfax Transportation Plan will:
  - Reconcile the Bicycle Master Plan, Countywide Trails Plan and Area Plans,
  - Identify and address missing links and improve safety and access to activity centers, schools, parks and transit,
  - Update design standards,
  - Provide guidance on pedestrian and bicycle safety and comfort, and
  - Provide implementation, policy and program recommendations and guidance
- Phase 1 will be completed this summer. Phase 2 will include project priorities and planning-level cost estimates; however, it is currently unfunded.
- The estimate cost is \$450,000.
- Phase 2 is expected to take 12 months.



- **Staff Response - Developing a Safe, Continuous, and Interconnected System:**

- No comprehensive lighting policy exists.
- Board approved installation of lighting on several priority trail projects leading to transit stations.
- Multiple agencies discussing development of lighting recommendations for Board's consideration. Staff anticipates discussing this issue with the Board in Summer 2021.
- FCDOT has addressed some bike/pedestrian wayfinding signage and safety needs. Some new capital projects included wayfinding signage. Significant funding and staff needed to address this issue comprehensively.
- Annual VDOT repaving effort expands the on-road bicycle lane network at a very low cost. Over 116 miles of bike lanes added over 6 years. Additional lanes will be added in 2021. Coordination on-going.
- FCDOT has identified funding for VDOT to study reducing the speed on Richmond Highway from 45 mph to 35 mph. This study effort is expected to take a year.

# Bike and Pedestrian (Continued)

- **Staff Response - Increasing Access to Bikeshare Systems:**

- Fairfax County is part of Capital Bikeshare.
- Currently 35 bikeshare stations in Reston, Tysons, Merrifield, and West Falls Church.
- \$4 million secured to add over 50 more stations in the Reston, Merrifield, Vienna and other areas of the County beginning this summer.
- Additional funding is the primary constraint to expanding bikeshare.

- **Staff Response - Encouraging Use by Students, Workers and Others:**

- FCDOT has managed Bike To Work Day activities since 2003. The number of “pit stops” grew from 3 in 2003 to 25 in 2019. Many FCPS schools participate in Walk to School Day and Bike to School Day.
- County requires bike parking with new construction resulting from the development process.
- FCDOT has provided bike parking at priority County facilities, most recently at NCS community facilities.
- Bike parking is included in transportation hubs: bike racks at bus stops, secure bike parking rooms at three existing and future Silver Line parking garages and two future commuter parking garages.
- Additional funding is required to significantly expand current efforts.



# Bike and Pedestrian (Continued)



- **Staff Response - Improving the User Experience:**

- FCDOT doesn't recommend adding porta-potties or other restroom options for walking and biking. Significant on-going maintenance challenge, and potential concern for adjacent communities.
- FCDOT produces a bike system map of trails, on-road bike lanes and quiet neighborhood streets
- Bike map provides information about bike safety, etiquette, traffic laws and community destinations.
- Distribution and County facilities and private-sector bike shops. Future updates could be modified to note public restroom locations.
- Recommendations for street trees are included in DPD Area Plans covering the activity centers within the County. Additionally, trees are required in new construction resulting from the development process.

- **Staff Response - Coordination – Biking, Walking and Running:**

- FCDOT coordinates with neighboring jurisdictions in planning a regional network. Provided input on the Capital Trails Network (regional network of existing and planned facilities). This coordination is on-going.
- Funding sources such as Smart Scale and Northern Virginia Transportation Authority are competitions that are weighed heavily towards reducing congestion. Stand-alone bicycle and pedestrian projects do not score well in these competitions. New roadway projects funded from those and other sources are multi-modal and include pedestrian and/or bicycle facilities. Other grant programs (Transportation Alternatives) better suited for bike and pedestrian projects. FCDOT applies for funding from these programs annually.
- The Active Fairfax Transportation Plan will identify legislative changes necessary to achieve the County's walking and biking goals. Legislative changes would be pursued with other jurisdictions.

# Questions/Discussion

# Appendix

# Transit Bus Fleet

- Recommendation #1: Bus Fleet Replacement
  - The Fairfax Connector diesel bus fleet should be transitioned to electric alternatives by 2030
- Recommendation #4: Grant Opportunities
  - Apply for grant funding for electric buses and the affiliated charging infrastructure whenever possible
- Recommendation #7: Transitional Costs
  - When considering the cost of transitioning to electric alternatives, the social cost of carbon should be factored in with fuel, upkeep and other reduced costs
- Recommendation #8: Coordination – Bus and Vehicle Fleets
  - FCPS and the County should coordinate electrification efforts and share charging and maintenance infrastructure whenever possible.

# Remaining Vehicle Fleet

- Recommendation #2 Non-Bus Fleet
  - Determine which vehicles have electric alternatives and transition them by 2035. Develop a plan for mitigating the carbon footprint of others.
- Recommendation #7: Transitional Costs
  - When considering the cost of transitioning to electric alternatives, the social cost of carbon should be factored in with fuel, upkeep and other reduced costs

# Charging Infrastructure

- Recommendation #3: Charging Infrastructure
  - Necessary charging infrastructure will be installed to scale as electric fleet grows. Wherever possible, charging infrastructure should service County and Schools.
- Recommendation #5: Clean Fuel
  - Develop a plan to fuel the County's electric vehicles using non-carbon emitting fuels and carbon offsets with a complete transition to 100% clean fuel by 2030.
- Recommendation #6: Reserved Parking
  - Reserved parking space should be marked at each County building for staff driving hybrid and electric vehicles

# Bike and Pedestrian

- **Recommendation #9: Improving Options for Safe Biking and Walking**
  - The ActiveFairfax Transportation Plan should prioritize increasing safe, well-designed, ADA-compliant and interconnected options for biking, walking and running.
- **Recommendation #10: Developing a Safe, Continuous, and Interconnected System**
  - Enhance lighting, signage and other safety features; lower speeds; work with VDOT to expand bike lane markings to interconnect trails and bus stops with roads.
- **Recommendation #11: Increasing Access to Bikeshare Systems**
  - Review and mitigate legal and other constraints to promote access and use of bikeshare systems, especially in underserved communities
- **Recommendation #12: Encouraging Use by Students, Workers and Others**
  - Expand and promote programs that incentivize biking and walking to school and work. Ensure adequate bike racks at schools and transportation hubs. Promote trails.
- **Recommendation #13: Improving the User Experience**
  - Develop a plan for adding porta-potties or other restroom options; publicizing and marketing trail system maps; increasing the tree canopy for better shade and shelter
- **Recommendation #14: Coordination – Biking, Walking and Running**
  - FCPS and the County should coordinate their efforts internally and with neighboring jurisdictions for a region-wide network. Develop legislative packages to help achieve these recommendations. Seek funding from NVTA and SmartScale.