County of Fairfax, Virginia

MEMORANDUM

DATE: March 9, 2021

TO: Board of Supervisors

FROM: Bryan J. Hill
County Executive

SUBJECT: Agency Responses to the Joint Environmental Task Force Recommendations

The Joint Environmental Task Force (JET) was formed in April 2019 by the Fairfax County Board of Supervisors and the Fairfax County School Board to identify areas of collaboration and advance county and school efforts in energy efficiency and environmental sustainability. The JET consisted of two members from the Board of Supervisors, including Supervisors Gross and Storck, two School Board members, two student representatives, and seven community members from environmental and educational organizations.

The JET met monthly between September 2019 and September 2020, often with the support of county and school staff, to gather information on existing policies and programs, and develop recommendations for county and school operations across four focus areas: energy, transportation, waste management and recycling, and workforce development. These recommendations were included in the JET Final Report, released on October 1, 2020.

On October 20, 2020, Supervisor Storck introduced a Board Matter accepting the JET Final Report and directing the County Executive to bring an action plan to the Board of Supervisors Environmental Committee no later than March 2021 for implementation of the JET recommendations. An agency response process, which included staff from county and schools, was subsequently developed for the JET recommendations. An overview of the JET recommendations, agency response process, and resource needs for implementation is included below. An attachment includes a complete set of staff responses to the JET recommendations.

JET Recommendations

The recommendations of the JET are geared toward county and school operations. The JET Final Report identified 28 recommendations across the four operational focus areas of energy, transportation, waste management and recycling, and workforce development. Each focus area includes an overarching goal and sub-goals, which are summarized below:

- **Energy**: The JET recommends that the Fairfax County Board of Supervisors, Fairfax County School Board, Fairfax County Park Authority and Fairfax County Redevelopment and Housing Authority commit to being energy carbon neutral by 2040. Four sub-goals outline the need for carbon emissions reductions, production of in-county

Office of the County Executive
12000 Government Center Parkway, Suite 552
Fairfax, VA 22035-0066
703-324-2531, TTY 711, Fax 703-324-3956
www.fairfaxcounty.gov

renewable energy generation, improvements in building energy performance for existing buildings, and Net Zero Energy commitments in all new county buildings and major renovations. Specific timelines are defined for each subgoal.

- **Transportation**: The JET recommends a transition to electric or zero carbon alternatives for the county's municipal bus fleet by 2030, the school bus fleet by 2035, and for remaining eligible county and school fleet vehicles by 2035. Related goals for charging infrastructure and a transition to clean fuel are included. There are also a number of transportation recommendations related to improving options for safe biking and walking and developing interconnected transit systems.
- **Waste management and recycling**: The JET recommends that the county and schools be zero waste by 2030. Sub-goals include conducting a trash and recycling audit, conducting a review of purchasing, and encouraging composting in public and private venues.
- **Workforce development**: The JET recommends that the county and schools provide additional resources for students and adult learners to know about and pursue "green" career paths. Specifically, the JET recommends the development of a standardized toolkit for guidance counselors and career center staff, an investigation of solar job opportunities, the development of green career programs, and utilization of buildings as learning tools.

Agency Response Process

Following the October 20, 2020 Board Matter, staff began to develop responses to each of the 28 JET recommendations. The following agencies and entities were asked to participate in the response process as either a lead or coordinating agency:

- Department of Information Technology (DIT)
- Department of Planning and Development (DPD)
- Department of Procurement and Material Management (DPMM)
- Department of Public Works and Environmental Services (DPWES)
- Department of Transportation (FCDOT)
- Department of Vehicle Services (DVS)
- Fairfax County Park Authority (FCPA)
- Fairfax County Public Schools (FCPS)
- Fairfax County Redevelopment and Housing Authority (FCRHA)
- Facilities Management Department (FMD)
- Land Development Services (LDS)
- Office of the County Attorney (OCA)
- Office of the County Executive – Legislative Director
- Office of Environmental and Energy Coordination (OEEC)
- Virginia Department of Transportation (VDOT)

A lead agency or agencies were identified for each recommendation and asked to complete individual response forms in collaboration with their coordinating agencies. For each recommendation, the response form asked staff to identify existing efforts related to the recommendation; what actions should be taken pursuant to the recommendation, including legislative action; short- and long-term budget implications; and feasible timelines for implementation. All participating agencies were given the opportunity to review the individual response forms and provide feedback. Final responses were coordinated between agencies and compiled into a collective response document (attached).

Resource Needs for Implementation

A number of the JET recommendations have fiscal implications associated with implementation. Six recommendations suggest action with fiscal implications in the *FY 2022 Advertised Budget Plan* (Bus Fleet Replacement, Improving Options for Safe Biking and Walking, Developing a Safe, Continuous, and Interconnected System, Improving the User Experience, Composting, and Green Career Programs), as identified below with a "**$**" notation.

- (**$**) Bus Fleet Replacement (Transportation #1): The JET recommends that the Fairfax Connector diesel bus fleet be transitioned to electric alternatives by 2030, and the FCPS fleet by 2035. FCDOT presented on a battery electric bus pilot at the Board of Supervisors Transportation Committee meeting in November 2020. FCDOT is now working on a more detailed cost for the pilot, including initial charging system costs. Grant applications will be submitted the first quarter of calendar year 2021 to help fund the project's estimated $4.2 million cost for four buses. The grant programs only fund a portion of eligible costs (the difference in the cost of a clean diesel bus versus an electric bus). The base cost of these four buses will be paid for by the Fairfax Connector's bus replacement fund. A complete transition of the Fairfax Connector fleet to electric alternatives is expected to incur a long-range cost of $95 million between FY 2022 and FY 2037, with additional costs for charging infrastructure.

- (**$**) Improving Options for Safe Biking and Walking (Transportation #9): The JET recommends that the forthcoming ActiveFairfax Transportation Plan (AFTP) prioritize increasing safe, well-designed, ADA-compliant, and interconnected options for biking, walking, and running. As part of the FY 2022 Budget, FCDOT requested non-recurring funding of $450,000 in operating expenses for consultant services to complete Phase II of the AFTP study. Tasks will include developing recommendations for bicycle and pedestrian facility planning given changing land use, traffic, and roadway characteristics; a state-of-the-art active transportation network; changes to the Comprehensive Plan; project priorities and planning-level cost estimates; educational and promotional programs; and implementation guidance. Long-range funding would be needed to address additional bicycle and infrastructure needs throughout the county.

- (**$**) Developing a Safe, Continuous, and Interconnected System (Transportation #10): To develop a safe, continuous, and interconnected bike and pedestrian system, the JET recommends the county enhance safety features and work with VDOT to expand bike lane markings. Implementation of these recommendations falls under FCDOT's existing Active Transportation Program, in which staff plan to conduct field review of location and condition of approximately 2,500 existing signs, determine locations for new signs,

prepare graphics for new sign orders, and oversee sign installation/maintenance. FCDOT has requested one additional FTE Planning Technician II and recurring funding of $148,179 for the Active Transportation Program in the FY 2022 Budget. Over the long-term, significant funding and staff positions would be needed to create programs for enhanced lighting and signage to provide a safe and enjoyable interconnected network of walking and biking facilities.

- (**$**) Improving the User Experience (Transportation #13): This JET recommendation seeks to improve the user experience for bikers and pedestrians on existing trail systems by adding restroom options, publicizing trail system maps, and increasing tree canopy for shade and shelter. Tree plantings would require one additional FTE within DPWES. A Project Manager I was recommended as part of the Stormwater Division's FY 2022 Budget addendum. For long-range planning, significant ongoing costs would be required for the addition of restroom facilities and tree plantings.

- (**$**) Composting (Waste Management #4): The JET recommends county and school staff encourage composting in public and private venues and undertake an educational program in multiple languages about waste and recycling for the public. Funding in FY 2022 for the extension of the Fairfax Employees for Environmental Excellence (FEEE) employee composting pilot program, and expansion of the DPWES Food Scrap Composting Pilot Program was requested through the Environmental Improvement Program (EIP) and included in the *FY 2022 Advertised Budget Plan*. The recommendation would incur additional long-term costs, through the purchase of compost bins for public buildings. Larger-scale composting would require contractual services with a commercial compost hauler and could require adjustments to the county's custodial service contract fees. An outreach and education program on composting would require funding for the development of posters and other outreach materials, and trainings for staff to track and support composting activities.

- (**$**) Green Career Programs (Workforce Development #3): The JET recommends the development of a comprehensive plan to offer one or more green career/economy-related programs for high school students to encourage participation in the emerging job market. The JET identified opportunities such as specialized training or real-world workforce experience in fields such as electric vehicle maintenance. Several county agencies partner with FCPS on green career opportunities. DVS has an existing apprentice program, in which high school seniors are provided the opportunity to gain technical knowledge and practice hands-on automotive skills, working under the supervision of DVS technicians. After completing the internship and graduating from high school, students may apply to underfill technician positions. DVS technicians are gaining experience with electric vehicles and hope to expand the existing apprentice program to include electric vehicle and sustainability-related activities. The DVS apprentice program is included in the *FY 2022 Advertised Budget Plan*.

In addition to those recommendations that impact the *FY 2022 Advertised Budget Plan*, 10 of the JET recommendations have short- and long-term resource implications (budget and/or staffing). Those recommendations with fiscal implications are highlighted below and identified with a "**$**" notation. More detail on resource needs is identified in the collective response document, included as Attachment 1.

- **($)** Carbon Neutral (Energy #1): The JET recommends that the county, FCPS, FCPA, and FCRHA commit to being energy carbon neutral by 2040. Achievement of this goal requires sustained investment over the next two decades to fund efforts including deep efficiency retrofits of existing buildings and facilities and "beneficial electrification" to replace direct fossil fuel use with electricity in a way that reduces overall emissions and energy costs in each sector, including transportation.

  Achieving carbon neutrality in existing buildings by 2040 will involve a mix of energy use reductions and on-site and off-site renewable energy purchases. An average building needs to reduce its energy use by at least 70 percent to sufficiently reduce its energy use intensity (EUI) so that solar panels can account for the remaining energy use, resulting in a net zero energy building. In some cases, it may not be possible or cost-effective to achieve such deep levels of energy reductions. Cost estimates range from $10/SF for a 30 percent reduction to estimates of $38.3 - $84.4/SF to achieve an energy reduction of 70 percent.

  Reducing energy use by 30 percent is likely the most that can be achieved in existing county government buildings. With a building portfolio of 11.6 million square feet, achieving a 30 percent reduction at a cost of $10/SF would theoretically cost $116 million. This translates to an annual cost of about $6.4 million over the 18-year period 2022-2040 to achieve a 30 percent reduction in energy use by the existing FMD portfolio. Additional staff resources also would be required to manage the energy improvement projects, even if those projects are undertaken by energy service companies (ESCOs).

- **($)** Net Zero Energy Commitment (Energy #5): The JET recommends that all new county buildings and major renovation projects beginning planning and design in 2021 and after must achieve Net Zero Energy (NZE) performance unless county staff advises the Board prior to the 30% design phase as to why a project cannot meet such standards. Staff identified short-term funding requirements, including project gap funding to reach NZE in the design phase. An update to the Sustainable Development Policy was adopted by the Board of Supervisors in September 2020. The update includes a goal for Capital projects to achieve a minimum of LEED Gold certification for new construction and major renovations. In addition, the policy has a goal of minimum 30 percent energy performance improvement for projects beginning design in FY 2021, to 50 percent in FY 2027, and being Net Zero ready by 2031.When the update was first presented, staff identified a fiscal impact of 5-7 percent for the first cost associated with achieving LEED Gold certification and a 30 percent energy performance improvement.

- **($)** Non-Bus Fleet Replacement (Transportation #2): The JET recommends a transition to electric (or other non-carbon emitting) alternatives for all eligible non-bus fleet vehicles by 2035. To date, department and agency contributions to the Vehicle Replacement Reserve have fully funded replacements of vehicles. However, as electric alternatives for heavy vehicles come to the marketplace, staff anticipates prices will double. DVS technicians will require training and the department may require special tools and personal protective equipment to repair and maintain electric vehicles.

- (**$**) Charging Infrastructure (Transportation #3): The JET recommends that necessary charging infrastructure be installed to scale as fleets grow. Wherever possible, charging infrastructure is to serve FCPS and the county. The Board of Supervisors previously dedicated $1.5 million in funding to install electric vehicle charging stations at up to 20 county-owned facilities for county vehicle and public charging, and to facilitate charging of fleet vehicles in county garages and parking structures. As staff monitors the transition of fleet vehicles to electric alternatives, additional funding may be required to design, permit, install, and maintain additional charging infrastructure and stations and upgrade electrical infrastructure (i.e., large transformers, panels, and disconnects) to support electric vehicle stations.

- (**$**) Reserved Parking (Transportation #6): The JET recommends that reserved parking spaces be marked at each school, admin and county building for staff and students driving hybrid or electric vehicles. Funding will be needed for design and construction, as well as the purchase and installation of new signage and markings of parking spots. Potential ADA compliance requirements may result in additional funding needs to appropriately modify spaces.

- (**$**) Increasing Access to Grid-Improved Bike-Share Systems (Transportation #11): The JET recommends the county review and mitigate legal and other constraints to promote access and use of bike-share systems, especially in underserved communities beyond the typical commercial hubs. Additional funding is needed for the expansion of the Capital Bikeshare system in Fairfax County. For every million dollars of funding, an additional 20 stations and 100 bikes could be added at current costs. Staff has identified at least 20 areas of the county that would be good candidates for Capital Bikeshare system expansion.

- (**$**) Encouraging Use by Students, Workers, and Other Residents (Transportation #12): The JET recommends the expansion and promotion of programs that incentivize biking and walking to school and work. Funding is needed for the expansion of public-sector bike parking in Fairfax County, including the procurement and installation of bike racks, as well as reoccurring programs or countywide events that incentivize biking and walking.

- (**$**) Zero Waste (Waste Management #1): The JET recommends that the county and schools be zero waste by 2030 and develop a Zero Waste Plan by June 30, 2021. Staff suggests the use of a contractor to support the development of the Zero Waste Plan, specifically to measure and analyze waste streams and identify solutions. Contractual services are anticipated to cost $250,000. Implementing a Zero Waste Plan would have significant funding requirements, through the procurement of greener products, installation of waste-reducing technologies, and transition to waste-free food service operations, for example.

- (**$**) Trash and Recycling Audit (Waste Management #2): The JET recommends staff conduct a trash and recycling audit to determine what residents and businesses are throwing away or recycling. Staff anticipates the use of a contractor to analyze waste generation and composition for the county and schools, as well as collect waste from targeted sectors. Depending on the degree of precision and accuracy required, which

affects sampling scheme and size, the estimated cost for such a study is anticipated to cost $100,000 - $500,000.

- (**$**) Utilize Buildings as Learning Tools (Workforce Development #4): The JET recommendation calls for the development of a plan to utilize county buildings as learning tools, as sustainable practices and technologies are adopted at these buildings. Additional design and construction funding may be required to expand current educational programs to include innovative electronic technology tools and to create safe public access to view the various green building elements including solar arrays in select facilities. Funding would be needed for signage (computers, televisions, posters, etc.) that could be used as learning tools for visitors to county buildings.

Staff intends to continue to discuss approaches to addressing the JET recommendations, particularly those that require future funding, recognizing that funding decisions by the Board of Supervisors in a future fiscal year budget may be needed for implementation.

If you have comments or questions on this memo, please contact Kambiz Agazi, Director, Office of Environmental and Energy Coordination, at 703-324-1788 or at kambiz.agazi@fairfaxcounty.gov.

Attachment: Compiled Agency Responses to JET Recommendations

cc: Joseph M. Mondoro, Chief Financial Officer
Rachel Flynn, Deputy County Executive
Christopher Leonard, Deputy County Executive
Kambiz Agazi, Director, Office of Environmental and Energy Coordination

Response to JET Recommendations

Recommendation: Energy #1

(Page 7 of the JET Final Report)

Carbon Neutrality

The JET recommends as an overarching goal, that the Fairfax County Board of Supervisors, the Fairfax County Park Authority, the Fairfax County Regional Housing Authority, and the Fairfax County School Board commit to being energy carbon neutral by 2040.

LEAD AGENCY: OEEC
COORDINATING AGENCIES: DPWES, FCDOT, FCPA, FCPS, FCRHA, FMD, DVS

Please identify a lead agency contact person: Susan Hafeli (OEEC)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

This ambitious and multi-faceted recommendation is in the very beginning stages of being addressed. Achieving carbon neutrality is a challenging, long-term effort. Among other things, it requires calculating a carbon footprint and reducing it to zero through a combination of efficiency and conservation measures and supporting external emission reduction projects, including the purchase and use of renewable energy or carbon offsets and electrification projects. It requires action in the following five key areas, as described below:

1. Periodic inventories of government greenhouse gas emissions.
2. Continued support for, and expansion of, the Operational Energy Strategy.
3. Adoption of California vehicle emissions standards.
4. Adoption of Solar Freedom or other legislative relief to maximize the ability to generate electricity from renewable sources and to use that self-generated electricity at other government sites.
5. The county will need to participate in an offsite arrangement to achieve its Carbon Neutral goal.

Emissions Inventories: At this time, a current baseline carbon footprint exists for only Fairfax County Public Schools (FCPS), which has been conducting and reporting on its greenhouse gas (GHG) emissions inventories annually since 2008. See Greenhouse Gas Inventory | Fairfax County Public Schools (fcps.edu). Fairfax County Government (FCG) completed its most recent GHG emissions inventory in 2013, covering the period 2006-2010. See Fairfax County Community Greenhouse Gas Inventory 2006-2010. No emissions inventories have been prepared for the Fairfax County Park Authority (FCPA) and the Fairfax County Redevelopment and Housing Authority (FCRHA). *Inventories of greenhouse gas emissions will need to be conducted and completed on a periodic basis for FCG, FCPA, FCPS and FCRHA (the "Fairfax entities") so that progress towards carbon neutrality can be tracked and measured and areas of needed improvement identified.*

Stationary Emissions: Energy use associated with facility operations – "stationary emissions" – is a significant contributor to the carbon emissions of the Fairfax entities. This energy is typically electricity and natural gas. FCPS reported that in 2019, emissions associated with buildings including schools, offices, and support facilities accounted for 80 percent of total emissions.

FCG, FCPA and FCPS have long tracked energy usage and actively pursued energy reduction goals and targets to address their stationary emissions. These efficiency and conservation projects have reduced energy consumption despite increases in population growth, square footage of facilities, and services provided. In conjunction with an electric utility grid that is increasingly less reliant on fossil-fuel generation, these projects have yielded significant reductions in carbon dioxide equivalent (CO_{2e}) emissions levels over time. For example, FCPS reports that its 2019 CO_{2e} emissions levels were 30 percent below its 2008 baseline, while FCG reports that its 2019 CO_{2e} emissions levels were 22 percent below its 2006 levels. See Greenhouse Gas Inventory Report (fcps.edu) and County Overall Energy Use | Office of Environmental and Energy Coordination (fairfaxcounty.gov). *Achieving continued reductions in building energy use and associated emissions requires continued support for and expansion of the Operational Energy Strategy.* This support and expansion mean additional staff and budget resources, including project managers to work with Energy Service Company (ESCO) personnel and ramp up the ESCO pilot, investment grade audits (IGAs) at many more facilities, and potential investments in deep energy improvements to help achieve an aggressive carbon neutrality goal.

Mobile Emissions: Transportation is the other notable source of CO_2 emissions attributable to local government operations. Less progress has been made with respect to vehicle-related emissions – "mobile emissions" – as compared to stationary emissions, primarily because commercially-viable alternatives to gasoline- and diesel-fueled vehicles have only recently begun to become available. As a result, reductions in mobile emissions generally have been attributable to the imposition of stricter federal fuel-efficiency standards. *Adopting California vehicle emissions standards, which are even stricter than current federal standards, will help ensure a wide variety of vehicle alternatives and also address costs through economies of scale.*

Steps are underway to increase EV use in Fairfax entity vehicle fleets through actions including the adoption of targets for both the purchase of electric fleet vehicles and installation of electric vehicle (EV) infrastructure and a competitive procurement and contract award for the acquisition of EV charging stations. The transition to EVs will reduce both direct emissions (those emitted from the vehicle tailpipe) and life cycle emissions (those related to fuel and vehicle production, processing, distribution, use, and recycling/disposal).

On-Site Renewable Energy: Carbon emissions drop when electricity generated from renewable sources is substituted for electricity generated by fossil fuels, including coal and natural gas. Since 2005, Dominion Energy Virginia (Dominion) has cut the carbon emissions associated with its power generation by approximately 50 percent, thereby reducing the carbon impact of the electricity used by its customers. To further reduce their carbon footprint, the Fairfax entities are beginning to pursue on-site renewable energy, with construction of solar installations expected to begin in 2021. *To take advantage of vacant or open sites and otherwise maximize their ability to generate and use renewable electricity, the Fairfax entities need the legislative and regulatory relief proposed in the Solar Freedom bills.* The relief granted by the 2020 legislative session to the county's I-95 Landfill site should be extended to all government sites.

In 2019, the Fairfax entities participated in a competitive procurement for solar power purchase agreement (PPA) services. Solar PPAs are a very effective financing mechanism for the purchase of renewable energy because they place both the up-front and operational cost burdens on a third-party provider of solar technology. The vendor is responsible for product selection, installation, connection to the grid, maintenance and ongoing operation. Contract awards were issued in December 2019 to primary, secondary and tertiary awardees for both roof-mounted solar systems and parking-lot/carport solar canopies. These awardees may also be asked to provide ground-mount installations.

The Fairfax entities do not have an unfettered right to use PPAs to finance projects to self-generate electricity. State law allows PPAs in the service area of incumbent electric utility Dominion Energy Virginia (Dominion) only pursuant to a pilot program. Under this pilot program, the total amount of PPA-financed electricity that can be generated by all non-jurisdictional customers like the Fairfax entities is a total of 500 megawatts. Further, solar PPA arrangements in the Dominion service area are currently subject to statutory and pilot program restrictions that limit their usefulness to government customers like the Fairfax entities. Those restrictions include limits on system size and the location at which the electricity can be generated and used. These and other restrictions reflect policy decisions that customer-owned generation should be artificially constrained to minimize the impact of customer-owned electricity generation on Dominions' retail electricity sales.

Throughout Dominion's entire Virginia service area, only one exception exists to some of these restrictions. This is a statutory exception enacted in 2020 that grants Fairfax County the right to install a solar photovoltaic system of up to five megawatts on its I-95 Landfill site and to credit the electricity generation that exceeds the amount used at the site to other county electric accounts (referred to as "virtual net metering"). The statute also authorizes the county to finance the installation using a PPA. The Fairfax entities need the same flexibility and freedoms that the Virginia Code currently extends only to the I-95 Landfill site.

Off-Site Renewable Energy: FCG is currently exploring the possibility of participating in one or more arrangements involving the off-site generation of electricity. Off-site arrangements are fundamentally financial instruments that stimulate renewable energy. The electricity generated from a solar development financed by the participants in an off-site arrangement is sold into the wholesale regional electricity market. Participants typically agree to a fixed "strike price" that determines whether they will be credited or debited when the solar-generated electricity is sold in the wholesale market. Depending on the specifics of the arrangement, the renewable energy credits (RECs) associated with that generation are either retained by the participants or sold, in full or part. Significantly, participation in an off-site arrangement does not obviate the need to purchase retail electricity service from an electricity provider. Building energy improvements and on-site generation of renewable energy will be insufficient to achieve zero emissions or carbon neutrality. Therefore, *the county will need to participate in an offsite arrangement to achieve its goal of carbon neutrality.*

There is a robust market in off-site arrangements nationwide. In Virginia, the Arlington County Board approved such an arrangement with Dominion (with Amazon as a companion customer of the same solar farm), in early 2020. That system is expected to begin producing electricity in 2022.

Energy #1
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

A range of actions should be taken and will be required to implement the JET's recommendations. Given the breadth of the JET recommendations and aggressive goals, staff will need to work collaboratively to develop comprehensive action plans to address the recommendations. These action plans will need to address elements including but not limited to appropriate actions, timelines, resource needs including staff and funding, procurement, identification of responsible parties, and legal issues including authority.

A number of the anticipated actions have been identified in FCG's *Operational Energy Strategy* (OES), which consists of 10 energy-related focus areas, each with its own goal, target and sample actions. See Fairfax County Operational Energy Strategy | Office of Environmental and Energy Coordination. However, the OES is not a substitute for the comprehensive action plans that will be required for the Fairfax entities to meet the JET recommendations. Achieving the JET energy recommendation of carbon neutrality by 2040 will require revisiting and revising existing goals, targets, initiatives and actions and establishing others. For example:

- Building Energy Use and Efficiency: The OES target calls for a 20 percent improvement (reduction) in energy use by 2029. The JET recommendation calls for a 25 percent reduction in the total (absolute) amount of energy consumed in all facilities, regardless of growth in services. This requires a recalibration of county budgeting and expectations.

- Green Building: The OES green buildings target is a minimum standard of LEED Silver for new construction and major renovations. In July 2020, the Board adopted an updated Sustainable Development Policy that calls for (1) LEED Gold certification for new construction and major renovations and (2) Net Zero Energy (NZE) for all projects beginning in FY 2031 or later. The JET recommendation calls for NZE after 2021, a substantially higher target for the county than either the OES or the updated Sustainable Development Policy.

- Innovative Energy Solutions: The OES expressed support for the installation of renewable energy at county facilities but included just a single project – a rooftop installation at the Springfield Warehouse – as its target. To achieve the JET goal of carbon neutrality by 2040 and the renewable energy subgoals of Recommendation #3 will require solar installations on as many facilities as possible.

With respect to efficiency and conservation, Energy Service Companies, or ESCOs, offer thorough and wide-ranging energy saving solutions by performing building assessments, identifying energy and water saving upgrades, calculating guaranteed savings, implementing selected upgrades, and verifying the savings. The Virginia state ESCO contract offers a streamlined procurement process, document templates, technical assistance, and pre-qualified ESCOs. FCG, which worked with ESCOs over a decade ago, is currently piloting use of the Virginia state ESCO contract with Facilities Management Department (FMD) and the FCPA. The ESCOs will help FCG and FCPA make deep energy retrofits at its existing buildings, assuming adequate funding is available for staff resources and the financing of improvements.

Federal and state legislative and regulatory activity is essential to ensuring that the Fairfax entities can take the actions that will be needed to achieve the JET's carbon neutrality recommendation. The scope of these actions is vast and will require constant refinement.

Staff is unable at this time to address the scope of required legislative action, other than to acknowledge that action will be required in multiple categories and with respect to multiple emissions-reduction efforts. For example:

- One category of required action pertains to constraints that stymie innovation or thwart customer freedoms. With respect to electricity use, for example, achieving the deep emissions reductions needed to attain carbon neutrality will require eliminating Virginia statutory and regulatory restrictions that maintain the monopoly status of Dominion and the Northern Virginia Electric Cooperative (NOVEC) in their respective service areas, and their concomitant authority to tell their retail customers what they may do on their own properties with respect to electricity generation and how their customers may use the electricity they generate. Despite gains in the 2020 General Assembly session, significant restrictions remain, including the continuing regulation of power purchase agreements, the inability to apply excess generation from a renewable energy system to electric accounts serving different locations, and even the inability of a customer whose property is divided by a public right-of-way to apply the electric output from a renewable energy system located on one side of the property to an electric meter located on the other side of the property.

- Another category pertains to action that encourages, supports or mandates the emissions-reduction efforts of the Fairfax entities. With respect to mobile emissions, this category includes federal legislation establishing stricter fuel-efficiency standards for gasoline and diesel-powered vehicles. It also includes the establishment and funding of federal and state incentives to offset costs associated with the purchase of EVs and EV charging infrastructure. With respect to stationary emissions, this category includes the adoption of stricter appliance standards that set minimum energy and/or water efficiency requirements. Mandatory cost-effective standards help eliminate the most inefficient products from the marketplace and create economies of scale, thereby reducing the retail cost of innovative technologies.

- A third category pertains to action needed to ensure clean energy sources and networks in the near term while still ensuring affordability. This category includes actions such as those to mandate a green grid, to facilitate the transmission of electricity from renewable sources, to ensure adequate storage of renewable energy, to restrict and virtually eliminate natural gas production and consumption, and to enforce these actions.

In addition, revisiting and largely eliminating the Dillon Rule as applied in Virginia likely will be needed to achieve the JET's carbon neutrality recommendation. At worst, the Dillon Rule prevents local governments from taking action they deem appropriate in response to climate change. At best, it diverts limited resources to the pursuit of authority and introduces significant delay.

An example involving EV charging illustrates the challenges the Dillon Rule poses with respect to the Fairfax entities' emissions-reduction efforts. While the Virginia Code authorizes schools and local governments to install for-fee EV charging stations (EVCS), the Code does not specifically authorize FCPA or FCRHA to do so. Under long-standing interpretations of the Dillon Rule, the

absence of an express or implied grant of authority means that these two entities cannot currently install for-fee EVCS at properties that they own or lease.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Budget implications for FY 2022 are not expected, due primarily to time constraints. Even if the Board were to adopt the JET energy goal in April 2021, there would not be sufficient time to develop action plans and proposed budgets before the Board must adopt the FY 2022 budget in May 2021. Though staff does not expect adoption to impact the FY 2022 budget, it would begin work on action plans and would likely pursue funding through quarterly reviews.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes. Achieving carbon neutrality by 2040 requires sustained investment over the next two decades to fund efforts including deep efficiency retrofits of existing buildings and facilities and "beneficial electrification" to replace direct fossil fuel use with electricity in a way that reduces overall emissions and energy costs in each sector, including transportation. See Beneficial Electrification | EESI.

Achieving carbon neutrality in existing buildings by 2040 will involve a mix of energy use reductions and on-site and off-site renewable energy purchases. An average building needs to reduce its energy use by at least 70 percent to sufficiently reduce its energy use intensity (EUI) so that solar panels can account for the remaining energy use, resulting in a net zero energy building. In some cases, it may not be possible or cost-effective to achieve such deep levels of energy reductions.

It is very difficult to estimate the costs associated with achieving very deep energy reductions, as costs depend on many variables. However, costs for achieving reductions in building energy use intensity (EUI) can be estimated using inputs such as baseline EUI, goal EUI, sample building square footage, assumptions regarding cost of saved energy and the estimated cost of deep energy retrofit projects. For example:

- A 2014 U.S. General Services Administration report summarizing costs and savings from a large ESCO project across multiple buildings showed an average cost of approximately $10/square foot (SF) to achieve **30 percent** energy savings in commercial buildings.

- One of the county's ESCO partners estimates costs of $38.3 - $84.4/SF to achieve an energy reduction of **70 percent**.

The table below summarizes the costs for achieving energy reductions of 30 and 70 percent and the annual cost to achieve those reductions over the 18-year period 2022 - 2040.

Energy #1
Continued

	Cost/ SF	Cost for FMD Portfolio	
		Total cost	Annual cost over 18-year period
30% Reduction	$10.0	$116,000,000	$6,444,444
70+% Reduction - Low Estimate	$38.3	$444,164,000	$24,675,778
70+% Reduction - High Estimate	$88.4	$1,024,860,000	$56,936,667

Reducing energy use by 30 percent is likely the most that can be achieved in existing county government buildings. With a building portfolio of 11.6 million square feet, achieving a 30 percent reduction at a cost of $10/SF would theoretically cost $116 million. **This translates to an annual cost of about $6.4 million over the 18-year period 2022-2040 to achieve a 30 percent reduction in energy use by the existing FMD portfolio. Additional staff resources also would be required to manage the energy improvement projects, even if those projects are undertaken by ESCOs.**

The costs of on-site and off-site renewable energy purchases would need to be added to these cost estimates to determine a final estimate of the cost of attaining carbon neutrality for the FMD portfolio. These costs, however, should account for only a minor share of the total cost. On-site renewable energy displaces utility-provided electricity and typically does so at a price lower than utility-provided electricity, particularly over the long term. Off-site renewable energy arrangements are expected to be cost-neutral and provide monetary benefits when the cost of electricity in the wholesale market exceeds the strike price.

Estimates have not been calculated for EUI reductions for all FCG properties (including Department of Public Works and Environmental Services (DPWES) facilities) or for FCPA, FCPS and FCRHA properties.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

The JET Final Report recommends energy carbon neutrality by 2040. Achieving carbon neutrality in less than two decades will be extraordinarily challenging. It is potentially feasible, but only if numerous prerequisites are met. These include a commitment by the Fairfax entities to the extraordinary effort and resources that will be required to transform current operations, satisfaction of supporting or related JET recommendations, appropriate changes to federal and state law and regulation, the development of an affordable green grid and energy network, and a market response that makes necessary goods and services available in a timely manner and at reasonable cost.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A. Recommendation #1 provides for an implementation timeline.

Response to JET Recommendations

Recommendation: Energy #2

(Page 7 of the JET Final Report)

Carbon Emissions

Achieve 50% emissions reductions by 2030, as compared to the 2019 baseline.

LEAD AGENCY: OEEC
COORDINATING AGENCIES: DPWES, FCDOT, FCPA, FCPS, FCRHA, FMD, DVS

Please identify a lead agency contact person: Susan Hafeli (OEEC)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

Energy Recommendation #2 is a subgoal intended to achieve the goal of carbon neutrality by 2040. It is applicable to Fairfax County Government (FCG), Fairfax County Park Authority (FCPA), Fairfax County Public Schools (FCPS), and Fairfax County Redevelopment and Housing Authority (FCRHA) (collectively, the "Fairfax entities").

The Fairfax entities are already reducing their energy use and corresponding emissions, as explained in response to Energy Recommendation #1. In 2008, for example, FCPS adopted Policy 8452, identifying carbon reduction as FCPS's most important environmental concern and committing FCPS to reducing its energy consumption wherever possible, both to take advantage of its benefits to the environment and to reduce energy expenses.

However, the JET recommendation is substantially more aggressive than current goals and targets. For example, FCG's Operational Energy Strategy (OES) establishes an energy reduction target of 20 percent from 2019 to 2029. See Fairfax County Operational Energy Strategy | Office of Environmental and Energy Coordination. JET Energy Recommendation #2, which envisions a 50 percent reduction in emissions by 2030, proposes a 150 percent reduction as compared to the OES 2029 target.

Achieving this subgoal will require revisiting and revising existing goals and targets and supporting initiatives and actions, establishing others, and ensuring that adequate and dedicated resources are directed to achieving this subgoal. Some of this may be able to be done informally, but some will require formal Board action.

Further, achieving this subgoal also likely will depend on the outcomes of other recommendations in the JET Final Report, some of which may unintentionally compete or perhaps even conflict. Electrification of transportation offers a good example. A transition to electric vehicles (EVs) will reduce mobile emissions associated with fossil-fuel combustion but can be expected to increase stationary emissions at facilities that provide EV charging. However, to the extent the facility at which the EV charging occurs relies on renewable energy or a green(er) grid to power the EV charging stations, then carbon emissions should be significantly reduced by the transition.

Energy #2
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Requiring a 50 percent reduction in 2019 emissions by 2030 will require the collaborative development of comprehensive action plans that will need to address both stationary and mobile emissions. These action plans can be expected to include elements such as appropriate actions, timelines, resource needs including staff and funding, procurement, identification of responsible parties, and legal issues including authority.

The plans likely will need to be revised from time to time to take into account progress by Dominion Energy Virginia (Dominion) in achieving the goals of the 2020 Clean Economy Act (CEA), as well as progress by the Fairfax entities towards beneficial electrification of their vehicle fleets. The CEA calls for 100 percent carbon-free electricity by 2045 in the Dominion service area and carbon-free electricity statewide by 2050; it also directs Dominion to supply 41 percent of its electricity from renewable energy by 2030 and close all carbon-emitting power plants by 2045, with some possible exceptions. As Dominion greens its grid to meet its obligations under the CEA, and renewable (solar) electric generation systems are installed at many county facilities, the emissions associated with the Fairfax entities' operations should decrease, particularly as fleet electrification proceeds.

Nonetheless, federal and state legislative and regulatory action in addition to the CEA is essential to ensuring that the Fairfax entities can take the measures necessary to achieving a 50 percent reduction in emissions by 2030. As explained in the response to Energy Recommendation #1, these legislative and regulatory actions fall into numerous categories, including but not limited to (1) action that pertains to constraints that stymie innovation or thwart customer freedoms; (2) action that encourages, supports or mandates emissions-reduction efforts; and (3) action needed to ensure clean energy sources and networks in the near term while still ensuring affordability. In addition, as discussed in response to Energy Recommendation #1, revisiting and largely eliminating the Dillon Rule as applied in Virginia likely will be needed to achieve the JET's carbon neutrality recommendation. At worst, the Dillon Rule prevents local governments from taking action they deem appropriate in response to climate change. At best, it diverts limited resources to the pursuit of authority and introduces significant delay.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Budget implications for FY 2022 are not expected, due primarily to time constraints. Even if the Board were to adopt the JET energy goal in April 2021, there would not be sufficient time to develop action plans and proposed budgets before the Board must adopt the FY 2022 budget in May 2021. Though staff does not expect adoption to impact the FY 2022 budget, it would begin work on action plans and would likely pursue funding through quarterly reviews.

Energy #2
Continued

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes. To reduce emissions from the 2019 level by 50 percent by 2030 will require sustained investment over the next decade to fund projects including deep efficiency retrofits of existing buildings and facilities and beneficial electrification of the Fairfax entities' vehicle fleets. These costs, though not yet estimated for Fairfax County, can be expected to exceed by orders of magnitude the costs associated with current operations, maintenance and improvements. Please see the response to Energy Recommendation #1 for more detail.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

Achieving a 50 percent reduction in emissions in less than a decade is potentially feasible, but only if numerous prerequisites are met. These include compliance by Dominion with its statutory and regulatory obligations under the Clean Economy Act, a commitment by the Fairfax entities to the extraordinary effort and resources that will be required to transform current operations, annual appropriations for funding as shown in the actions plans that would be developed to support the goal, satisfaction of supporting or related JET recommendations, appropriate changes to federal and state law and regulation, and a market response that makes necessary goods and services available in a timely manner and at reasonable cost.

Achieving Energy Recommendation #2 may not be feasible absent a break-through in the electrification of the transportation sector, particularly with respect to buses. According to data reported by Wikipedia, EVs still represent a very small share of the market, with light-duty plug-in EVs accounting for only 2.1 percent of market share of light-duty vehicles in 2019. (Of the reported 361,307 EVs, California accounts for 157,659 – or about 44 percent – of the sales.) While there are numerous options for EV sedans, fewer EV options currently exist with respect to transit and school buses and medium- and heavy-duty trucks. Those that are available are significantly more expensive than conventional fossil-fueled vehicles. An inability to locate viable electric buses and trucks will delay the electrification of the Fairfax entities' vehicle fleets and the expected reduction in mobile emissions.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A. Energy Recommendation #2 provides for an implementation timeline.

Response to JET Recommendations

Recommendation: Energy #3

(Page 7 of the JET Final Report)

Clean Renewable Energy

Produce 25% of the county energy use from in-county renewable energy generation by 2030, and 50% by 2040, using 2019 energy use as the baseline.

LEAD AGENCY: OEEC
COORDINATING AGENCIES: DPWES, FCPA, FCPS, FCRHA, FMD

Please identify a lead agency contact person: Susan Hafeli (OEEC)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

Energy Recommendation #3 is a subgoal intended to achieve the goal of carbon neutrality by 2040. It is applicable to Fairfax County Government (FCG), Fairfax County Park Authority (FCPA), Fairfax County Public Schools (FCPS), and Fairfax County Redevelopment and Housing Authority (FCRHA) (collectively, the "Fairfax entities").

The Fairfax entities are already taking steps to produce electricity on-site, as explained in response to Energy Recommendation #1. In 2019, the Fairfax entities participated in a competitive procurement for solar power purchase agreement (PPA) services. Solar PPAs are a very effective financing mechanism for the purchase of renewable energy because they place both the up-front and operational cost burdens on a third-party provider of solar technology. Contract awards were issued in December 2019 to primary, secondary and tertiary awardees for both roof-mounted solar systems and parking-lot/carport solar canopies. These awardees may also be asked to provide ground-mount installations.

Construction is expected to begin in 2021. Pre-construction activities include system design, execution of site-specific PPAs, satisfaction of permitting, zoning and other regulatory requirements, approvals to lease rooftops or other locations for the solar installations, interconnection arrangements with Dominion Energy Virginia (Dominion), and so forth.

Unfortunately, Virginia imposes numerous restrictions on the ability of an electric customer to generate electricity on-site or to use that electricity as it sees fit. Indeed, it was not until 2013 that Virginia authorized Dominion customers to use solar PPAs to finance on-site solar installations – and, even then, that authority was established on a pilot basis and limited to a total of 50 megawatts (MW). (For comparison purposes, the generating capacity of the Covanta plant is 80 MW.)

In 2020, the amount of permissible PPA-financed customer generation in Dominion's service area was increased to 500 MW for non-jurisdictional customers like the Fairfax entities and certain restrictions were loosened. Nonetheless, numerous restrictions remain that will impede the ability of the Fairfax entities to achieve Energy Recommendation #3, including limits on system size and

placement and the use of that electricity, including the electric accounts to which the generation may be credited.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

The Fairfax entities are expected to continue pursuing on-site electricity generation consistent with this recommendation, to the extent feasible.

Federal and state legislative and regulatory action is essential to ensure that the Fairfax entities can take the measures that will be needed to produce 25 percent of county energy use from in-county renewable energy generation by 2030, and 50 percent by 2040, using 2019 energy use as the baseline. The federal and state legislative and regulatory action is explained in detail in response to Energy Recommendation #1. This action falls into numerous categories, including but not limited to (1) action that pertains to constraints that stymie innovation or thwart customer freedoms; (2) action that encourages, supports or mandates emissions-reduction efforts; and (3) action needed to ensure clean energy sources and networks in the near term while still ensuring affordability. In addition, as discussed in response to Energy Recommendation #1, revisiting and largely eliminating the Dillon Rule as applied in Virginia likely will be needed to achieve this recommendation.

Under Virginia's statutory and regulatory framework governing electricity service, the incumbent electricity provider enjoys monopoly status in its service area. In addition to preventing customers from choosing preferred providers, this framework allows the monopoly utility provider to impose restrictions and limitations both on its customers' ability to generate renewable energy and on its customers' use of the electricity generated by those renewable energy systems. Loosening or eliminating these restrictions creates new opportunities for the generation and use of solar energy. For example, eliminating the requirement that on-site solar generation be used only on the premises where it is generated would open new opportunities for solar generation, including stand-alone parking garages and open space. Eliminating restrictive statutory and regulatory provisions will help ensure that the Fairfax entities can achieve the on-site solar generation goals of Energy Recommendation #3.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Energy Recommendation #3 does not appear to have any significant budget implications for FY 2022, so long as this recommendation envisions use of PPAs to finance on-site solar generation in FY 2022. PPAs place both the up-front and operational cost burdens on a third-party provider of solar technology. The vendor is responsible for product selection, installation, connection to the grid, maintenance and ongoing operation. However, there are nontrivial staff costs for administrative and project management of installation at each site.

Energy #3
Continued

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

There are likely to be long-term fiscal implications, but they are currently unknown. For example, costs of self-generation may increase due to factors such as changes in the state or federal legal or regulatory environments, supply chain disruptions, or the introduction of new financing mechanisms or technologies.

In addition, long-range fiscal implications may result from limits on the ability of the Fairfax entities to self-generate electricity within the county. If such limits are encountered, the Fairfax entities may be required to look to other sources of renewable energy generation to satisfy this recommendation, including off-site arrangements as discussed in response to Energy Recommendation #1.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

The timeline for this recommendation includes in-county production of renewable energy by 2030 that corresponds to 25 percent of 2019 energy use and by 2040 corresponds to 50 percent of 2019 energy use. Whether the timeline is feasible depends in part on the meaning of this recommendation.

If "2019 energy" means all forms of energy used by the Fairfax entities, including electricity, natural gas, and liquid vehicle fuels, then it is likely not a feasible timeline. According to Appendix 2 of the FCG Operational Energy Strategy, in 2016, electricity use accounted for 51 percent of FCG's energy use, with natural gas, gasoline and diesel fuel accounting for the remaining 49 percent.

If "2019 energy" means "2019 electricity," then the likelihood that it is a feasible timeline improves but it still remains a very challenging goal in part because the Fairfax entities lack the space on which to install sufficient solar facilities. For example, to meet 50 percent of FCG's 2019 annual electricity consumption would require the installation of solar panels of utility-scale efficiency on approximately 700 acres, or about one square mile. Further, under current law, the output of these panels could only be used at the premises on which they are installed; the output cannot be delivered to another county location across a public right-of-way for use there or applied as a credit on another electric account. Even if the output could be delivered elsewhere or applied as a credit, limitations on system size – 150 percent of annual electricity usage but no more than three megawatts – impose caps on the amount of electricity a particular solar system can generate.

Assuming the physical challenge can be addressed, numerous other prerequisites would need to be satisfied to make this a feasible timeline, including a commitment by the Fairfax entities to the extraordinary effort and resources that will be required to transform current operations, annual appropriations for funding as shown in the actions plans that would be developed to support the goal, satisfaction of supporting or related JET recommendations, appropriate changes to federal and state law and regulation, the development of an affordable green grid and energy network (including

favorable interconnection for self-generators like the Fairfax entities) and a market response that makes necessary goods and services available in a timely manner and at reasonable cost.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A. Energy Recommendation #3 provides for an implementation timeline.

Response to JET Recommendations

Recommendation: Energy #4

(Page 8 of the JET Final Report)

Building Energy Performance Standards for Existing Buildings
Decrease total energy usage from all county facilities by 25% by 2030, and 50% by 2040, as compared to the 2019 baseline.

LEAD AGENCY: OEEC
COORDINATING AGENCIES: DPWES, FCPA, FCPS, FCRHA, FMD

Please identify a lead agency contact person: Susan Hafeli (OEEC)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

Energy Recommendation #4 is a subgoal intended to achieve the goal of carbon neutrality by 2040. It is applicable to Fairfax County Government (FCG), Fairfax County Park Authority (FCPA), Fairfax County Public Schools (FCPS), and Fairfax County Redevelopment and Housing Authority (FCRHA) (collectively, the "Fairfax entities").

The Fairfax entities are already reducing their energy use, as explained in response to Energy Recommendation #1. However, their efforts will need to be significantly boosted because the JET has recommended reductions of 25 and 50 percent in *total* energy use in facilities by 2030 and 2040, respectively. Such absolute reductions in energy use are more difficult to achieve than reductions in energy intensity, which is typically measured by energy use on a per square foot basis. An absolute reduction target is more difficult to achieve in a still-growing community like Fairfax County because local government facility square footage is continuing to increase due to the construction or expansion of facilities like schools, libraries, community centers and fire stations. Achieving an absolute reduction target is also made more difficult as vehicle fleets transition from liquid fuels to electric vehicle charging at county facilities.

As noted in the response to Energy Recommendation #2, regarding emissions reductions, the 2020 Clean Economy Act (CEA) calls for 100 percent carbon-free electricity by 2045 in the Dominion Energy Virginia (Dominion) service area and carbon-free electricity statewide by 2050; it also directs Dominion to supply 41 percent of its electricity from renewable energy by 2030 and close all carbon-emitting power plants by 2045, with some possible exceptions. As Dominion greens its grid to meet its obligations under the CEA, the emissions associated with the Fairfax entities' operations should decrease, particularly as fleet electrification proceeds. Declining emissions due to the increasing use of renewable energy mitigates the need to implement energy use reductions to achieve climate benefits. Reductions in energy use will still provide other benefits, including utility cost reductions that can free up funds for other purposes.

Energy #4
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Requiring a 25 percent reduction in total 2019 energy use by 2030 and a 50 percent reduction by 2040 will require the collaborative development of comprehensive action plans that will need to address both stationary and mobile emissions. These plans can be expected to include elements such as appropriate actions, timelines, resource needs including staff and funding, procurement, identification of responsible parties, and legal issues including authority.

As explained in response to Energy Recommendation #1, a range of actions should be taken and will be required to implement Energy Recommendation #4. Many of these actions are identified in FCG's *Operational Energy Strategy* (OES), which consists of 10 energy-related focus areas, each with its own goal, target and sample actions. See Fairfax County Operational Energy Strategy | Office of Environmental and Energy Coordination. These focus areas include but are not limited to energy and water efficiency and conservation, green buildings, electric vehicles, waste management, innovative energy solutions, goods and services, and employee awareness and engagement. The FCG OES is not a substitute for the comprehensive plans that will be required for the Fairfax entities to meet Energy Recommendation #4, however.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Budget implications for FY 2022 are not expected, due primarily to time constraints. Even if the Board were to adopt the JET energy goal in April 2021, there would not be sufficient time to develop action plans and proposed budgets before the Board must adopt the FY 2022 budget in May 2021. Though staff does not expect adoption to impact the FY 2022 budget, it would begin work on action plans and would likely pursue funding through quarterly reviews.

It should be noted that the cost of energy improvements is not linear. That is, when an energy reduction target is doubled, the level of funding required to achieve that higher target may be more than doubled. This is because the easiest energy improvement projects – the "low-hanging fruit" like lighting retrofits – can be undertaken with a quick return on investment, while deeper energy reductions often require more expensive replacement of heating and cooling equipment and improvements to the building envelope.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes. To reduce absolute energy use by the percentages specified in Energy Recommendation #4 would require sustained investment through 2040 to fund energy improvement projects, including deep efficiency retrofits of existing buildings and facilities. These costs, though not yet estimated for Fairfax County, can be expected to exceed by orders of magnitude the costs associated with current operations, maintenance and improvements. Please see the response to Energy Recommendation #1 for more detail.

Energy #4
Continued

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

Achieving absolute energy reductions of 25 and 50 percent in *total* energy use in facilities by 2030 and 2040, respectively, is potentially feasible, but only if numerous prerequisites are met. These include a commitment by the Fairfax entities to the extraordinary effort and resources that will be required to transform current operations, annual appropriations for funding as shown in the action plans that would be developed to support the goal, satisfaction of supporting or related JET recommendations, appropriate changes to federal and state law and regulation, and a market response that makes necessary goods and services available in a timely manner and at reasonable cost.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A. Energy Recommendation #4 provides for an implementation timeline.

Response to JET Recommendations

Recommendation: Energy #5

(Page 8 of the JET Final Report)

Net Zero Energy Commitment

All new county buildings and major renovation projects beginning planning and design in 2021 and after must achieve Net Zero Energy (NZE) performance as defined below, unless county staff advises the Board prior to the 30% design phase why a project cannot meet the NZE standard.

The JET defines an NZE building as one that is highly energy-efficient and produces onsite, or procures offsite as necessary, carbon-free renewable energy in an amount sufficient to offset the annual energy use associated with operations.

LEAD AGENCY: DPWES-Capital Facilities, FMD, FCPA
COORDINATING AGENCIES: FCPS, FCRHA, OEEC

Please identify a lead agency contact person:

- Vrushali Oaks (DPWES-Capital Facilities)
- Emmanuel Waleola (FMD)
- Keith Snyder (FCPA)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DPWES-Capital Facilities: The Building Design and Construction Division (BDCD) will be implementing NZE building projects based on the timeline included in the updated Sustainable Development Policy, adopted by the Board of Supervisors in 2020, as indicated below:

Year(s)	Construction (New/Major Renovation)	Minimum Energy Performance	Minimum GHG Reduction
FY 2021	New	30%	32%
	Renovation	25%	24%
FY 2024	New	40%	65%
	Renovation	35%	50%
FY 2027	New	50%	100%
	Renovation	45%	80%
FY 2031	New	NZE	NZE
	Renovation	NZE	NZE

FMD: Within applicable FMD Capital Renewal/Infrastructure Replacement projects, existing manual lighting controls are replaced with automatic lighting control systems. Existing non-LED lamps/fixtures are also replaced with LEDs. This has a direct financial impact.

Energy #5
Continued

FCPA: The county has recently transitioned from LEED Silver to Gold target building standards.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DPWES-Capital Facilities: BDCD is currently analyzing NZE pilot projects to align with the county's focus on carbon emissions reductions, energy efficiency, and renewable energy.

FMD: FMD does not engage in major renovation projects; this is a function of DPWES-Capital Facilities.

FCPA: Legislation will be needed to set the new NZE building standard and allow gap funding to be allocated to projects already in the design process.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

While these actions do not have implications for the *FY 2022 Advertised Budget Plan*, staff has identified the following short-term funding implications:

DPWES-Capital Facilities: Additional design and construction funding will be required to develop and implement these recommendations on county building projects, specifically achieving NZE standards.

FMD: These recommendations have immediate budget implications. Below are examples of likely funding requirements:

1. Replacement of existing equipment with energy efficient equipment, instead of a like-for-like one, will have higher upfront costs.
2. Hiring contractors to operate and maintain new energy efficient equipment will have budget implications.
3. There will be additional ongoing costs for commissioning and retro-commissioning services.

FCPA: Project gap funding to reach NZE would be needed early in the design phase and potentially several times throughout the design process to ensure NZE can be met.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DPWES-Capital Facilities: Additional funding will be required for operations and maintenance (O&M), which will include training and/or outsourcing to ensure that the advanced and complex building systems are maintained. System performance will need to be monitored and optimized through an ongoing commissioning process throughout the building's life cycle.

Energy #5
Continued

Future year utility budgets will need to be adjusted to allow for purchase of off-site renewable energy necessary to achieve NZE on Capital building projects.

FMD: FMD expects that the NZE Plan will require long-range funding for various investments. Below are examples of likely funding requirements:

1. Ongoing contractor costs to maintain new energy efficient equipment and systems.
2. Ongoing costs for commissioning and retro-commissioning of energy efficient equipment and systems.

FCPA: NZE building design will most likely increase the capital (upfront) cost of buildings, while reducing the long-term operational cost (utility and, potentially, maintenance). The county may consider evaluating its current major project funding structure to better account for long-term operational savings in the upfront design and construction of facilities.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

DPWES-Capital Facilities: Based on the updates to the Sustainable Development Policy, adopted by the Board of Supervisors in 2020, Capital building projects beginning design in FY 2031 have a goal to achieve NZE.

BDCD is currently evaluating NZE pilot projects, which are in design. The county will utilize these projects to help in cost modeling, lifecycle payback, and best practices. Staff is researching the cost of purchasing off-site renewable energy credits, which would be necessary to meet the NZE goals for most Capital projects due to the small site and building footprint sizes available for on-site renewable energy.

Adopting an NZE commitment on all projects beginning design in FY 2021 is a challenge because the county has not yet built an NZE project and data is not available for staff to evaluate performance and cost impacts.

The Sustainable Development Policy would be subject to revision prior to the indicated 10-year end point for the NZE adoption. It may be updated to incorporate the most current information and experiences available from the pilot projects.

FCPA: A timeline is defined for 2021 implementation, which will potentially impact/increase the FY 2021 and 2022 budgets for projects already under the 30% design phase. A survey of impacted projects may be needed to understand the fiscal impact of the current timeline and allow for communication, design changes and funding requests.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A

Response to JET Recommendations

Recommendation: Transportation #1

(Page 10 of the JET Final Report)

Bus Fleet Replacement

The JET recommends that the Fairfax Connector diesel bus fleet be transitioned to electric alternatives by 2030, and the FCPS fleet by 2035. Appropriate benchmarks will be determined to help measure progress toward achieving these goals.

LEAD AGENCY: FCDOT, FCPS
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Thomas Reynolds (FCDOT)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: Fairfax County Department of Transportation (FCDOT) is reviewing how to best achieve the benefits that battery electric buses provide. It has recommended the development of a pilot to understand more about this propulsion technology. The use of electric buses is also being studied by the Richmond Highway Bus Rapid Transit (RHBRT) project. FCDOT staff and RHBRT consultants are doing more vehicle and facility/charging research for each effort to see how this emerging technology can meet many of the demands of the Fairfax Connector.

FCPS: This recommendation is in the process of being addressed. FCPS was selected to receive funding assistance through a Dominion Energy initiative for the purchase of eight (8) electric school buses which are scheduled to begin arriving in January of 2021. FCPS Office of Transportation Services (OTS) will conduct an evaluation of the eight (8) electric buses to determine whether they meet the operational requirements/expectations for student transportation. Findings will be shared with the Virginia Department of Education (VDOE), as electric school buses for transporting students are approved on a pilot basis only at this time by the Commonwealth of Virginia.

FCPS will continue to monitor the marketplace for advancements in electric propulsion technology to determine which of these vehicles provide the most viable options for FCPS.

FCPS OTS submitted an application with the EPA for the "2020 Diesel Emissions Reduction Act (DERA) - School Bus Rebate" which provides a rebate of $65,000 (per bus) towards the purchase of electric school buses (if selected). Grants are scheduled to be awarded in January or February of 2021.

On December 13, 2019, an RFI was issued requesting information on transitioning the current fleet of vehicles consisting of school buses, box trucks, cargo vans, passenger vans, sedans, pick-up

trucks, and SUVs to fully electric by the year 2030. Four responses addressed the conversion of the fleet (one for total conversion; three for phased conversion).

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCDOT: A four electric bus pilot is planned for FY 2022. The pilot is the next step FCDOT has recommended to the Fairfax County Board of Supervisors. It will allow FCDOT to address several 'unknowns' on how zero emission buses (ZEBs) can meet many of the service demands of the Fairfax Connector. The pilot also supplements the ongoing research towards identifying the requirements and costs associated with ZEB charging infrastructure. Developing the pilot and studying the possible use of electric buses for the RHBRT project is only the start of understanding all of the implications for electrifying a bus fleet.

Currently, none of these specific actions in this response require legislative authority.

FCPS: Dominion Energy established goals for electric school buses (ESB) in the fall of 2019 as listed below. Phase 2 and beyond will require approval from the General Assembly and Governor Northam.

Phase 1 – 50 electric school buses to be deployed by January 1, 2021. Because of delays related to COVID-19, completion of this phase is now expected by the end of February.

Phase 2 – 2021 through 2025, 20 percent of all school bus replacements (in Virginia) will be electric.

Phase 3 – 2026 through 2030, 50 percent of all replacements to be electric.

Phase 4 – all replacements after 2030 to be electric.

FCPS OTS recommends that a carefully documented evaluation be completed of the initial implementation of the first eight buses to determine if an electric alternative is feasible at this time to meet the operational requirements of FCPS and to ensure that we continue to provide safe and efficient transportation for our students within the budget allocations provided. Such an evaluation will also allow for corrections and/or modifications to implementation. Electric vehicle propulsion is developing and changing rapidly. OTS' primary requirement is to ensure the safe and efficient transportation of FCPS students. Charging times, adequate charging stations, adequate distances traveled, maintenance technician training, driver training, adequate charging stations, costs, etc. must all be evaluated.

Legislative action to provide local government/municipalities with incentives/funding to transition to zero emissions vehicles is recommended.

Transportation #1
Continued

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: Yes, FCDOT is working on a more detailed cost for the battery electric bus pilot. Grant applications will be submitted the first quarter of calendar year 2021 to help fund the project's estimated $4.2 million cost for four buses. The grant programs only fund a portion of eligible costs (the difference in the cost of a clean diesel bus versus an electric bus). The base cost of these four buses will be paid by the Fairfax Connector's bus replacement fund. The cost of charging infrastructure has not been identified.

FCPS: No. FCPS OTS does not anticipate purchasing additional electric school buses for the FY 2022 school year. Since FCPS electric buses will not arrive until January of 2021, OTS will not have the opportunity to obtain any data on operation of buses before the end of 2021 and only then, if transportation services for students return to normal scheduling. Because of the pandemic requiring virtual instruction, only limited transportation services have been offered for select students and for food delivery since March of 2020.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: Yes, there are long range financial implications which require further review. The Fairfax Connector fleet is comprised of 329 buses ranging in model years of 2007 to 2020. FCDOT has set a useful life cycle of 15 to 16 years for a bus.

Replacing clean diesel buses with electric buses will cost an estimated additional $95 million between FY 2022 and FY 2037. Current battery electric buses have range restrictions that may not meet many of the Fairfax Connector service demands. The pilot will begin to provide answers to many unknowns that range from fuel savings to additional personnel costs to higher capital investments. In addition to the vehicle purchases, a significant amount of capital expenditures will be required to implement the charging infrastructure at the bus garages. Garage charging requires specialized equipment (transformers/distribution switches/chargers). More research is required to ensure that scaling up the charging infrastructure is done cost-effectively. Until more information on the long-range implications is known, FCDOT cannot comment further.

FCPS: FCPS currently owns/operates over 1,600 school buses. Replacing diesel powered buses with electric alternatives would cost approximately an additional $320 to $340 million between FY 2022 and FY 2035. In addition, there will be a significant amount of capital expenditure for the installation of the charging infrastructures at each parking location (80-100 locations). Maintenance technicians and drivers will require training for the transition.

Currently, electric school bus alternatives cost approximately three times (3x) that of a diesel - powered bus PLUS the cost of charging infrastructure installation and maintenance. Potentially, electric vehicles will reduce maintenance and operating costs. However, sufficient data has not been collected in school districts across the country to provide an estimate of savings.

Transportation #1
Continued

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

FCDOT: No, the timeline of complete conversion by 2030 is not feasible, because the current Fairfax Connector replacement cycle runs through 2037. In addition, it is not currently clear that electric buses can practically address all the Fairfax Connector vehicle needs. FCDOT has to address several 'unknowns' associated with how the ZEB technology can meet many of the service demands and whether the county has financial capacity to fund the needed changes before a commitment can be assured.

FCPS: FCPS attempts to maintain a replacement schedule of 15 years for a school bus. Budget constraints have required that, in many cases, buses are maintained for longer periods of time (18+). Without significant additional funding from one or more sources, FCPS will not be able to transition to an all-electric school bus fleet in the recommended timeline.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT: FCDOT is unable to provide an answer at this time; however, Fairfax County cannot achieve a 100 percent electric bus fleet for the Fairfax Connector before 2037, unless buses are replaced before the end of their useful lives.

FCPS: N/A - JET recommendation is for transition to occur by 2035.

Response to JET Recommendations

Recommendation: Transportation #2

(Page 10 of the JET Final Report)

Non-Bus Fleet Replacement

Determine which vehicles have electric (or other non-carbon emitting) alternatives and transition them by 2035. Develop a plan for mitigating the carbon footprint of others. Appropriate benchmarks will be determined to help measure progress toward achieving these goals.

LEAD AGENCY: DVS, FCPS
COORDINATING AGENCIES: OEEC

Please identify a lead agency contact person:

- Daniel Gonzalez (DVS)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DVS: The recommendation is being addressed by the Department of Vehicle Services ("DVS") for the Fairfax County fleet.

On July 10, 2018, the Board of Supervisors (Board) adopted the Operational Energy Strategy (OES). The OES includes 10 Focus Areas, one of which is electric vehicles (EVs). The OES target for EVs includes the installation of Level II charging infrastructure at up to 20 major government facilities by 2025 and, by 2030, the selection of electric or plug-in hybrid models for all eligible government passenger vehicle purchases. DVS staff identifies vehicles eligible for replacement during the budget cycle and proposes electric or other non-carbon emitting alternatives, when available.

Replacement plans are different for different types of vehicles. For example, approximately four percent of the passenger vehicle fleet (or approximately 25 vehicles) is replaced annually based on a three-year analysis. Currently approximately 50 percent of all passenger fleet replacement vehicles purchased by the Department of Vehicle Services Replacement Fund are hybrids. The county is transitioning to 100 percent of all passenger fleet replacement vehicles purchased by the Department of Vehicle Services Replacement Fund being hybrids or electric.

The number of electric vehicles, as a percent of the total replaced, will increase as electric vehicle charging infrastructure and stations are in place to provide power to the units. The largest unknown factor in projecting future replacement rates is the quantity and cost of units the major manufacturers produce annually. In addition, only small four door sedans or small utility vehicles (SUVs) are available in an electric model currently. The majority are not manufactured in the United States and the price point is high. Also, the United States manufacturers are no longer producing four door sedans and have transitioned solely to SUVs and pick-up trucks.

Transportation #2
Continued

Staff in DVS, the Department of Management and Budget (DMB), and the Office of Environmental and Energy Coordination (OEEC) will work together to draft benchmarks to measure progress.

FCPS: FCPS operates a variety of vehicles ranging from sedans, one-ton pickups/vans, heavy cargo trucks, etc. Alternative offerings for these types of vehicles are extremely limited (or non-existent) currently. As Original Equipment Manufacturers (OEM's) begin to offer these types of vehicles, FCPS is committed to exploring the possibility of their use.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DVS: N/A

FCPS: As electric (or other non-carbon emitting) alternatives become available, a pilot or evaluation of each type of vehicle will be the next step towards transitioning the fleet to ensure these vehicles meet the operational requirements/expectations for each department. Legislative authority to provide local government/municipalities with incentives/funding to transition to zero emissions (non-carbon emitting) vehicles is recommended.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

DVS: To date, department and agency contributions to the Vehicle Replacement Reserve have fully funded the replacements. However, in future years, as electric alternatives for heavy vehicles come to the marketplace, staff anticipates prices will double. Additionally, DVS technicians will require training and the department may require special tools and personal protective equipment to repair and maintain electric vehicles. DVS technicians are professionally trained and have extensive experience with conventional vehicles. Electric vehicles and plug-in hybrid electric vehicles have different types of required maintenance from convention engines because of differing technologies.

FCPS: Budget implications will be dependent on the number of eligible vehicle replacements in FY 2022 and the associated cost for an electric (or non-carbon emitting) alternative (if available). Those costs are currently unknown. Most electric alternatives cost 50 percent to 75 percent more than a gas/diesel powered equivalent. Increased funding will be necessary to meet this recommendation.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DVS: Necessary charging infrastructure will need to be installed to scale as the fleet grows.

FCPS: FCPS currently owns/operates over 800 non-bus vehicles. Replacing gas/diesel powered vehicles with an electric (or non-carbon emitting) alternative (if available) would cost an additional

Transportation #2
Continued

$12 million (approximately) between FY 2022 and FY 2035. In addition, there will be a significant amount of capital expenditure for the installation of the charging infrastructure at each parking location.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

DVS: While the current timeframe appears feasible, new electric vehicles are being introduced to the market as technology progresses and staff continues to assess appropriate alternatives for the fleet. However, time is needed to learn the new technology, driving range, and charging times to ensure a smooth transition for the county fleet. In addition, replacement plans are different for different types of vehicles.

FCPS: While efforts continue towards carbon neutrality, it is unknown if there will be electric (or non-carbon emitting) alternatives offered for the variety of vehicles utilized within FCPS. Without additional funding resources, it is unlikely that FCPS will be able to transition the fleet in the recommended timeline.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A

Response to JET Recommendations

Recommendation: Transportation #3

(Page 11 of the JET Final Report)

Charging Infrastructure

Necessary charging infrastructure will be installed to scale as fleets grow. Wherever possible, charging infrastructure will serve FCPS and the county.

LEAD AGENCY: DVS, FCPS
COORDINATING AGENCIES: DPD, FMD, OEEC

Please identify a lead agency contact person:

- Marguerite Guarino (DVS)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DVS: The recommendation is in the process of being addressed. On July 10, 2018, the Board of Supervisors (Board) adopted the Operational Energy Strategy (OES). The OES includes 10 Focus Areas, one of which is electric vehicles (EVs). The OES target for EVs includes the installation of Level II charging infrastructure at up to 20 major government facilities by 2025 and, by 2030, the selection of electric or plug-in hybrid models for all eligible government passenger vehicle purchases.

On April 30, 2019, the Board approved the FY 2019 Third Quarter Review, which included $750,000 to fund the first phase of a two-phase plan to install EV charging stations at county-owned facilities including county office buildings, commuter parking lots and garages, community centers, libraries, or RECenters. Additional funding of $750,000 was approved at the FY 2020 Carryover Review on September 29, 2020. The funding is expected to support the installation of EV charging infrastructure at up to 20 locations, at an average cost of $75,000 per location. The average cost includes expenses related to site design, permitting and construction; enhancements to existing electrical infrastructure; procurement of equipment, warranties and EV charging software and installation of the charging equipment.

In November 2020, the county established a contract through competitive negotiation with National Car Charging (NCC) to provide and install Level II EV charging stations, software, and support services for Fairfax County. In December 2020, the Facilities Management Department (FMD) issued a statement of work and request for pricing to prequalified Engineering Firms to provide designs for EV infrastructure at five county-owned facilities. Staff is planning to install EV infrastructure at the five county-owned facilities in FY 2021 to coincide with the receipt of 14 electric vehicles.

The Department of Public Works and Environmental Services (DPWES) evaluates new building and major renovation projects, included in the Capital Improvement Program, for feasibility of

electric charging system for vehicles. Infrastructure for the future installation of electric charging system is provided in selected county facilities. The infrastructure includes identification of locations for the EV charging stations, conduits, and electrical panel capacity. Procurement and installation of the electrical charging stations will be coordinated by DVS with NCC.

DVS will continue to work with FMD and DPWES to identify locations where infrastructure is required to support the growing EV fleet.

As a part of the Zoning Ordinance Modernization (zMOD) project, a new electric vehicle charging use has been added to the Ordinance to encourage electric vehicle usage in the county. Standards have been added limiting the height of dispensers and associated equipment, permitting associated solar canopies, and requiring landscaping and screening requirements. Electric vehicle charging spaces will be included in determining the minimum required number of parking spaces. A standard limiting digital display area to one-square foot is included, and any additional display area would be regulated as a sign. Public hearings are scheduled with the Planning Commission on January 28 and with the Board on March 9, and staff is proposing a delayed effective date for the new Ordinance. In the interim timeframe, a revised interpretation will be issued in advance of adoption of the new Ordinance, allowing electric vehicle charging spaces to apply the new proposed standards.

FCPS: This recommendation is in the process of being addressed. FCPS received funding through a Dominion Energy initiative for the purchase of eight (8) electric school buses which included the installation of eight (8) Vehicle to Grid (V2G) charging stations. Dominion Energy funded and installed these charging stations at the Stonecroft Transportation Complex and will maintain the stations and retain ownership of the stations and bus batteries. The vehicle-to-grid technology will allow Dominion Energy to use the buses, when they are not in operation, to supply the grid.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCPS: Planning for the charging infrastructure must be completed well in advance of implementation as this requires collaboration with the utility providers and various other stakeholders. Decisions such as whether Level II charging stations or Vehicle to Grid (V2G) stations (or both) will be used by FCPS must be decided. Agreements about locations of stations, ownership, maintenance, etc. must all be agreed upon by the many stakeholders and government decision makers. Final approval for electric school buses for student transport must be finalized through the DOE. Legislative action to provide local government/municipalities with incentives/funding to transition to zero emissions vehicles is recommended.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

DVS: Additional funding may be required to upgrade electrical infrastructure (i.e., large transformers, panels, and disconnects) to support EV stations. As noted above, in December 2020, FMD issued a statement of work and request for pricing to prequalified Engineering Firms to

provide designs for EV infrastructure at five county-owned facilities. Estimates will help staff refine the budget for future projects.

FCPS: Budget implications will be dependent upon FCPS receiving funding from grant/rebate opportunities in FY 2022 for the purchase of electric buses which may or may not include funding for the charging infrastructure.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DVS: Yes. Funding will be required to design, permit, install, and maintain charging infrastructure and stations.

FCPS: Yes. An all-electric fleet would require that all FCPS buses (over 1,600) and vehicles (over 800) have availability to appropriate charging stations. Currently, FCPS uses 80 to 100 parking locations.

A significant amount of capital expenditure will be required for the necessary charging infrastructure (different for buses and vehicles). The availability to serve other county departments/agencies may be limited as charging vehicles would have designated parking locations/spaces.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

DVS: See above.

FCPS: As stated above, planning for the charging infrastructure must be completed well in advance of implementation as this requires collaboration with the utility providers and various other stakeholders. Decisions such as whether Level II charging stations or Vehicle to Grid (V2G) stations (or both) will be used must be determined as part of the planning process. Agreements about locations of stations, ownership, maintenance, etc. must all be part of the planning process and must include the many stakeholders and government decision makers. In other words, without the charging station infrastructure, the fleet conversion cannot occur. It must be implemented as a part of, and in advance of, every purchase.

Response to JET Recommendations

Recommendation: Transportation #4

(Page 11 of the JET Final Report)

Grant Opportunities

Apply for grant funding for electric buses and the affiliated charging infrastructure whenever possible.

LEAD AGENCY: FCDOT, FCPS
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Brent Riddle (FCDOT)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: FCDOT staff is applying for grants to fund a battery electric bus pilot. Applications are pending for funding from programs at the Virginia Department of Rail and Public Transportation and Department of Environmental Quality. Additional applications may be filed with the Federal Transit Administration in the future.

FCDOT and FCPS staff have met to discuss coordination of implementing charging infrastructures. School bus service differs from that offered by transit. The buses for each are dissimilar in many ways (i.e., cost, duty-cycles) and each have different energy requirements. To date, clean diesel propulsion has met the needs of both services; however, implementing electric propulsion still needs to prove that it can meet many of the demands.

Electric vehicle charging systems can be different for medium duty vehicles (school buses) versus heavy-duty ones (transit buses). Currently, there are no parking/storage facilities that have both FCPS and FCDOT buses at the same location. FCDOT has three locations for its 329 buses. Larger, centralized 'depot' charging systems can be implemented at these locations. FCPS has 1,625 buses parked at approximately 100 locations. It is staff's intent that any charging equipment purchased will be usable for both transit and school buses to the extent practicable.

FCPS: This is in the process and ongoing. FCPS continues to monitor opportunities and apply for grant funding whenever an opportunity is identified. As noted above, FCPS applied for and was selected to receive funding assistance through a Dominion Energy initiative for the purchase of eight (8) electric school buses which included installation of the charging infrastructure. FCPS OTS also submitted an application with the EPA for the "2020 Diesel Emissions Reduction Act (DERA) - School Bus Rebate" which provides a rebate of $65,000 (per bus) towards the purchase of electric school buses (if selected).

Transportation #4
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCDOT: FCDOT is looking into other sources of financial assistance, including state or federal programs and Dominion Energy's charging rebate program. Currently, none of these specific actions in this response require legislative authority.

FCPS: The Governor of the Commonwealth of Virginia proposed to designate $20 million from the VW Environmental Mitigation Trust to reimburse school districts up to $265,000 for the purchase of an all-electric school bus including charging infrastructure. The Department of Environmental Quality (DEQ) anticipates the grant application period opening in the spring of 2021.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: Yes, FCDOT's electric bus pilot will begin in FY 2022 and costs associated with the initial charging system costs will be included. FCDOT is working on a more detailed charging cost for the battery electric bus pilot. Grant applications will be submitted the first quarter of calendar year 2021 to help fund the project's estimated $4.2 million cost for four buses. The grant programs only fund a portion of eligible costs (upgrade costs for infrastructure changes by the utility company are not eligible under certain grants).

FCPS: Additional funding may be necessary to meet this recommendation.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: Yes, scaling up charging systems for larger electric fleets also means increased costs for a complete infrastructure. Much like the costs to implement the pilot, not all costs will be covered by grant funding. The true fiscal impact of an expansion is not known at this time and FCDOT will continue its efforts to better define these long-range costs.

FCPS: Grant programs often require upfront funding and/or matching by the locality. Generally, grant funding requires that project evaluation and reporting be conducted. Additional personnel may be required to complete reporting and coordination with the funding source.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

No timeline was cited for this recommendation.

Transportation #4
Continued

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT: FCDOT will implement this recommendation consistent with that of achieving carbon neutrality by 2040, assuming funding is available, and the technology meets the Fairfax Connector duty requirements.

FCPS: The timeline for this would be ongoing until the entire fleet is converted—and maybe even beyond for upgrades, etc.

Response to JET Recommendations

Recommendation: Transportation #5

(Page 11 of the JET Final Report)

Clean Fuel

Develop a plan to fuel these electric vehicles using non-carbon emitting fuels and carbon offsets with a complete transition to 100% clean fuel by 2030.

LEAD AGENCY: DVS, FCPS
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Marguerite Guarino (DVS)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DVS: The Department of Vehicle Services (DVS) is primarily focused on electrification. DVS has not developed a plan to research carbon offsets or transition to 100 percent clean fuel by 2030. Of note, Transportation Recommendation #2 requests that staff identify electric alternatives and transition the fleet by 2035, which is 5 years later than the recommended transition to clean fuel. Staff recommends that the two recommendations be aligned.

The county's fleet of medium- and heavy-duty trucks meet fuel efficient and greenhouse gas emission standards developed by the U.S. Department of Transportation and the Environmental Protection Agency. Diesel Exhaust Fluid (DEF), a liquid used to reduce the amount of air pollution created by a diesel engine, is available at strategically located DVS fuel islands.

FCPS: This recommendation may be unattainable. The standard grid-produced electricity provided by Dominion Energy is produced using a variety of fuel sources, some of which are not carbon neutral. In order to transition to 100 percent clean fuel (non-carbon emitting) the county would need to use solar or wind-produced energy as the power source for fueling electric vehicles.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DVS: DVS will coordinate with the Office of Environmental and Energy Coordination to research carbon offsets and to calculate the quantity that may be required and cost. The plan will consider unique and special use vehicles and include the fuel operations program, which provides gasoline and ultra-low sulfur diesel fuel at 53 sites across the county, primarily located

at police stations, fire stations, schools, public works facilities, park authority maintenance centers and DVS maintenance facilities. Fuel is pumped by all county agencies assigned vehicles and equipment to include Fastran, Connector and school buses.

Charging infrastructure to support electric vehicles and carbon offsets for vehicles that cannot transition to 100 percent clean fuel have a long-range fiscal impact. In addition, as gasoline and potentially diesel are no longer used by the county fleet, county fuel sites may be permanently closed. Permanent closure of underground storage tanks or changes in service must comply with federal and state regulations.

FCPS: Fairfax County will need to work with the energy provider(s) to determine if there is an option to purchase non-carbon emitting energy to fuel the electric vehicle fleet or the county will need to invest in producing its own solar or wind generated energy to fuel the electric vehicles. Legislative action requiring energy providers to produce a higher percentage of non-carbon emitting energy for use by the consumer is recommended.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

DVS: No.

FCPS: FCPS does not anticipate the recommendation will have any implications for the FY 2022 budget.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DVS: No.

FCPS: The cost associated with obtaining or producing clean fuel for use in the electric vehicle fleet will require substantial planning and investment from energy provider(s) and/or Fairfax County. The long-range fiscal implications are difficult to project and, therefore, unknown at this time.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

DVS: Transportation Recommendation #2 requests that staff identify electric alternatives and transition the fleet by 2035, which is 5 years later than the recommended transition to clean fuel by 2030.

FCPS: The feasibility of accomplishing this recommendation is dependent on the availability to purchase or to produce 100 percent clean fuel and the financial commitment it will take to do so.

Transportation #5
Continued

It is highly unlikely that this recommendation can be accomplished to its full extent in the allotted timeline.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A

Response to JET Recommendations

Recommendation: Transportation #6

(Page 11 of the JET Final Report)

Reserved Parking

Reserved parking spaces will be marked at each school, admin, and county building for staff (and students as applicable) driving hybrid and electric vehicles.

LEAD AGENCY: DPWES, FCPA, FMD, LDS
COORDINATING AGENCIES: FCPS, OCA, OEEC

Please identify a lead agency contact person:

- Vrushali Oaks (DPWES-Capital Facilities)
- Brian Keightley (DPWES-UFMD)
- Keith Snyder (FCPA)
- Emmanuel Waleola (FMD)
- Brandy Mueller (LDS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DPWES: Yes, the Zoning Ordinance is being amended to accommodate electric vehicles. The Department of Planning and Development (DPD) and the Urban Forest Management Division (UFMD) have been working on ordinance language to coordinate trees and electric vehicle infrastructure such as solar arrays and vehicle charging stations. The proposed revisions allow for modifications to interior and peripheral parking lot landscaping locations, but the requirements must still be met. UFMD can exercise creativity and flexibility in reviewing tree locations and credit for parking lot landscaping.

The Building Design and Construction Division (BDCD) within DPWES evaluates and provides infrastructure for EV charging stations on county building projects, but these are not reserved spaces. Designated spaces for green vehicles are provided as required on LEED projects.

There are ongoing discussions within the county about providing designated spaces for green vehicles as it relates to zoning requirements and potential equity issues.

FCPA: Fuel efficient and hybrid parking spaces are available at many facilities as part of LEED certification, though there is no law to enforce parking at these spots (i.e., not towable, or finable).

FMD: This recommendation is in the process of being addressed.

Transportation #6
Continued

LDS: During the land development process, identifying EV reserved spaces and installing charging infrastructure is not a code requirement but can be done at the request of an applicant. Multiple agencies are involved in approval of EV reserved spaces and implementation of this recommendation. Land Development Services' (LDS) focus is reviewing the design of the physical EV parking space so that it is consistent with current Public Facilities Manual guidance and the Zoning Ordinance. Critically, in the upcoming Zoning Ordinance update, minimum parking requirements for proposed land uses will include EV parking spaces, similar to the treatment of accessible spaces. No additional spaces will be required to replace parking spaces converted to accommodate EVs or hybrid vehicles. This change is expected to be considered by the Board of Supervisors in March 2021 to become effective in July 2021.

This recommendation does not discuss EV charging infrastructure for reserved spaces. The county, including LDS, also reviews and approves these installations. The EV charging infrastructure must meet standards defined by the Zoning Ordinance, proffered commitments, and county policies. It is noted that the county is planning updates to the Zoning Ordinance and EV policies to further clarify the implementation of EV charging facilities and parking requirements.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DPWES: Five percent of the total parking required is designated for green vehicles as required by LEED on applicable projects.

FCPA: Legislation is needed to enforce parking at designated spaces with tickets, fines, and towing for public parking areas.

FMD: FMD defers to the Office of the County Attorney (OCA) for legislative requirements. There are ADA implications that must be addressed. This needs to be coordinated with LDS and on a site-by-site basis.

LDS: The primary role of LDS in this recommendation is the streamlined approval of designated EV spaces on a submitted site-related plan that includes a parking area. Designating reserved spaces should not prompt the construction of additional parking as this is counter-intuitive to achieving environmental benefits with provision of less impervious parking surface. Hybrid/EV space designations should occur from the existing parking field. Additional LDS actions that should be taken include:

- Updating codes, policies and guidelines as needed to align with new technologies and industry best practices.
- Participating in any legislative measures that may be warranted.

This proposal raises a question as to the effectiveness of designating hybrid/EV spaces without charging infrastructure. In conjunction with this initiative, the county and School Board should

initiate programming installation of electrical infrastructure and chargers for the reserved spaces to add value to the space designation.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

While these actions do not have implications for the *FY 2022 Advertised Budget Plan*, staff has identified the following short-term funding implications:

DPWES: If zoning regulations are revised to increase the required parking counts to incorporate reserved spaces for green vehicles on county building projects, additional design and construction funding may be required.

FCPA: Agencies may need funds to purchase and install new signage.

FMD: Funding will be required for signage, posts, and markings. Potential ADA compliance requirements may result in funding needs to appropriately modify spaces.

LDS: The installation of EV infrastructure should occur with the planning and design of new facilities. For existing facilities, and possibly new facilities, in order to reduce costs, the county and the School Board may be able to establish private operator agreements for the installation and maintenance of chargers. Third party operators are quickly expanding vehicle charging opportunities on private sites. Given that this is a relatively new approach, as part of achieving the recommendation and enhancing functionality, in the short-term, the county and School Board can identify parking spaces most conducive to the installation of future infrastructure, then program county funds or pursue private operator agreements to make the spaces more useful.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DPWES: Future projects will need to account for any increased parking if required by zoning to incorporate reserved spaces for green vehicles.

FCPA: If facilities have to enforce the new parking spots (i.e., customer/use complaints), that could add to future site workload or equipment need at facilities (i.e., security cameras).

FMD: Limited ongoing funding needs are anticipated beyond signage, posts, markings and ADA modifications.

LDS: Not for LDS.

Transportation #6
Continued

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

DPWES: Implementation will depend upon potential revisions to zoning regulations.

FCPA: Timeline depends on implementation requirements, i.e., number of facilities required to make the change, and lead time procuring materials.

FMD: Implementation of this recommendation is an ongoing effort that will be carried out in phases for several years.

LDS: It is expected that LDS's role in this recommendation will be on-going based on the above stated actions.

Response to JET Recommendations

Recommendation: Transportation #7

(Page 11 of the JET Final Report)

Considering Transitional Costs

When considering the cost of transitioning to electric alternatives, the social cost of carbon will be factored in with fuel, upkeep and other reduced costs to assess potential savings and determine breakeven points.

LEAD AGENCY: FCDOT, FCPS
COORDINATING AGENCIES: DVS, OEEC

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: Traditionally, transit has been an ongoing participant in addressing the effort to address all aspects of carbon in the environment. It will continue to do so as it looks at the short- and long-term implications of transitioning to zero-emission buses (ZEBs). FCDOT's responses to many of the other Joint Environmental Task Force Committee recommendations have, in effect, explained that more study is required to address the 'unknowns' associated with a transition to ZEB technology and ongoing costs. Once the answers are provided, FCDOT can be better address the nexus between the social benefits and the costs of achieving it.

FCPS: FCPS continues to look for innovative and cost-effective ways to obtain vehicles that emit lower-level emissions to aid in the reduction of GHG emissions. The first step towards reduction of mobile emissions is to evaluate the electric alternatives available to ensure they will meet the operational requirements/expectations of the department. Potential savings, safety concerns, vehicle reliability/dependability concerns, operational costs, breakeven points, etc. at this point are speculation or based on limited data. Evaluation will require a sufficient timeline to compile data to determine if the current zero-emission vehicles (ZEV) are able to meet FCPS' transportation requirements.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCDOT: ZEBs can reduce carbon footprints; however, Fairfax County should approach it in a measured way to make it cost-effective. Environmental experts will need to help with evaluation of environmental impacts such as social costs. Also, the impact of generating electricity should

be considered. Additional effort must be made to study all aspects of this maturing technology. Answers to what ZEB technology can and cannot do to meet many of the service demands of the Fairfax Connector need to be identified. The electric bus pilot is the first step in understanding how ZEBs can meet the recommendations of the Joint Environmental Task Force Committee.

Currently, none of these specific actions in this response require legislative authority.

FCPS: Evaluation of the electric buses scheduled to begin arriving in January of 2021 is an important step to implementation and expansion of fleet transition.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: Other than the potential costs of the electric bus pilot described in Transportation Recommendation #1, FCDOT does not have any other at this time.

FCPS: There are no budget implications for the FY 2022 budget.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: FCDOT described its concerns related to the short- and long-term fiscal impacts of increasing the use of ZEBs in Transportation Recommendation #1. Addressing the 'unknowns' associated with an expanded use of ZEBs must be done first.

FCPS: FCPS currently owns/operates over 1,600 school buses and more than 800 non-bus vehicles. The recommendation will require significant investment from the county to transition those vehicles that have an electric alternative along with the funding necessary for the required charging infrastructure. This cost is estimated at approximately $332 million ($320 million for the bus fleet and $12 million for the non-bus fleet) between 2021-2035.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

There are no timelines associated with this recommendation.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT: FCDOT will work on this recommendation consistent with that of achieving carbon neutrality by 2040 in anticipation of a favorable outcome assuming funding is available, and the technology meets the Fairfax Connector duty requirements.

Transportation #7
Continued

FCPS: Once the viability of the (8) electric school buses has been evaluated and, hopefully, established, FCPS will continue to seek funding opportunities to expand the number of zero emission vehicles (ZEVs) within our fleet.

Response to JET Recommendations

Recommendation: Transportation #8

(Page 11 of the JET Final Report)

Coordination – Bus and Vehicle Fleets

FCPS and the county should coordinate electrification efforts and share charging and maintenance infrastructure whenever possible. Each should develop legislative packages for the General Assembly to help achieve these recommendations.

LEAD AGENCY: FCDOT, FCPS
COORDINATING AGENCIES: DVS, Legislative Director

Please identify a lead agency contact person:

- Tom Reynolds (FCDOT)
- Joseph Welborn (FCPS)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: FCDOT and FCPS staff have met to discuss coordination of implementing charging infrastructure. The extent of coordination is limited to some degree. School bus service differs from that offered by transit. The buses for each are dissimilar in many ways (i.e., cost, duty-cycles) and each have different energy requirements. To date, clean diesel propulsion has met all of the needs of both services; however, implementing electric propulsion still needs to prove that it can also meet all of the demands.

FCDOT's response to this recommendation is similar to that for Transportation Recommendation #4 where the electric vehicle charging requirement can be different for FCPS and FCDOT.

FCPS: FCPS met with other lead agencies to discuss coordination efforts for sharing the charging infrastructure. Due to operational differences, assigned parking spaces, and the number of parking locations (80-100) throughout the county, there were only a few locations in which these resources could be shared. FCPS will continue to monitor the marketplace for funding opportunities for the expansion of the zero emissions vehicle (ZEV) fleet so long as these vehicles meet the operational requirements/expectations for the department.

Maintenance of FCPS vehicles is conducted by Fairfax County Department of Vehicle Services.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Transportation #8
Continued

FCDOT: Coordination among agencies to secure better electrical rates for the all-county departments/agencies implementing electric vehicle uses can produce savings compared to separate initiatives. Consolidating the charging infrastructure needs for all departments/agencies may allow for the county to take advantage of the economies of scale factor.

No legislative authority is needed; however, significant funding from the General Assembly could help to achieve this and other recommendations.

FCPS: Legislative action to provide local government/municipalities with incentives/funding to transition to zero emissions vehicles is recommended.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: Yes, FCDOT's electric bus pilot will begin in FY 2022 and costs associated with the initial charging system costs will be included. FCDOT is working on a more detailed charging cost for the battery electric bus pilot. Grant applications will be submitted in the first quarter of calendar year 2021 to help fund the project's estimated $4.2 million cost for four buses. The grant programs only fund a portion of eligible costs (upgrade costs for infrastructure changes by the utility company are not eligible under certain grants).

FCPS: There are no budget implications for FY 2022.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: Yes, scaling up charging systems for larger electric fleets also means increased costs for a sturdier infrastructure. Much like the costs to implement the pilot, not all charging infrastructure costs will be covered by grant funding. The true fiscal impact of an expansion is not known at this time and FCDOT will continue its efforts to better define the long-range implications.

FCPS: Currently, this is an unknown. If shared charging facilities need to be built, this would have significant long-range fiscal implications related to building and maintaining such a facility.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

Transportation #8
Continued

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCPS: Once the eight electric buses have been deemed a viable option for FCPS, we will continue to seek out funding opportunities to expand the number of zero emission vehicles (ZEVs) within our fleet and any options for coordinated maintenance and charging efforts.

Response to JET Recommendations

Recommendation: Transportation #9

(Page 11 of the JET Final Report)

Improving Options for Safe Biking and Walking

The forthcoming ActiveFairfax Plan should prioritize increasing safe, well-designed, ADA compliant, and interconnected (including with mass transit) options for biking, walking, and running.

LEAD AGENCY: FCDOT
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

This recommendation is in the process of being addressed.

The Active Fairfax Transportation Plan (AFTP) will reconcile the Bicycle Master Plan, Countywide Trails Plan and regional connectivity in Area Plans into one interconnected Plan; will identify and address missing links in the active transportation network and improve safety and access to activity centers, schools, parks and transit; will bring the planned bicycle and trails network design standards to current best practices; will provide countywide guidance on pedestrian and bicycle safety and comfort; and will provide implementation, policy and active transportation program recommendations and guidance to FCDOT and the Board.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Phase I of the AFTP is underway and is expected to be completed in 2021.

Phase II of the AFTP, which will develop the facility selection toolkit, make network and program recommendations, provide implementation and funding prioritization guidance, and complete the comprehensive plan amendment, is unfunded.

The AFTP will identify any federal, state and county legislative changes that may be needed to achieve the county's goals. After the Board has endorsed AFTP goals and visions, any recommended legislative changes will be made as part of the AFTP policy guidance.

Transportation #9
Continued

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Yes, as part of the FY 2022 Budget, FCDOT requested non-recurring funding of $450,000 in operating expenses for consultant services to complete Phase II of the AFTP study. Tasks will include developing recommendations for: bicycle and pedestrian facility planning given changing land use, traffic, and roadway characteristics; a state-of-the-art active transportation network; changes to the Comprehensive Plan; project priorities and planning-level cost estimates; educational and promotional programs; and implementation guidance.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes. There are significant unfunded bicycle and pedestrian infrastructure needs throughout the county. These unfunded infrastructure needs are a significant obstacle to providing residents a safe, well-designed, ADA-compliant, and interconnected infrastructure network for biking and walking.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT anticipates Phase I of the AFTP to be completed in 2021. Completion of the Phase II timeline is dependent on funding availability. Implementation of the AFTP recommendations will be dependent on funding availability.

Response to JET Recommendations

Recommendation: Transportation #10

(Page 11 of the JET Final Report)

Developing a Safe, Continuous, and Interconnected System

Enhance lighting, signage, and other safety features, i.e., lower speed limits where applicable. Work with VDOT to expand bike lane markings to interconnect trails and bus and metro stops with roads.

LEAD AGENCY: FCDOT
COORDINATING AGENCIES: VDOT

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

The Board has authorized FCDOT and DPWES to install lighting on a small number of priority trail projects as part of those project's construction, principally for trails leading to high-capacity transit stations. However, no comprehensive lighting policy has been established. Neither budget nor staff have been identified to provide enhanced lighting for safe walking and biking on sidewalks and trails in the county.

FCDOT has been able to make some progress in addressing walking and biking wayfinding signage and safety needs, and some capital projects include wayfinding signage. However, significant funding and staff would be needed to address this issue comprehensively across the county.

FCDOT works with VDOT every year on the VDOT Asphalt Repaving maintenance effort and annually expands the on-road bicycle lane network at a very low public-sector cost. Over the past six years, over 116 miles of bike lanes have been added in the county as a result of this effort.

FCDOT has identified funding for VDOT to study reducing the speed on Richmond Highway from 45 mph to 35 mph. This effort is expected to take a year.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Transportation #10
Continued

Additional lighting and wayfinding sign funding is needed to implement this JET recommendation. Additional bike lanes will be implemented through VDOT's annual repaving program. No legislative authority is needed.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Yes, FCDOT has requested 1.0 FTE Planning Technician II (S18) position and recurring funding of $148,179 for the Active Transportation Program, to conduct field review of location and condition of approximately 2,500 existing signs, determine locations for new signs, prepare graphics for new sign orders, and oversee sign installation/maintenance.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes, significant funding and staff positions would be needed to create programs for enhanced lighting and signage to provide a safe and enjoyable interconnected network of walking and biking facilities.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

Achieving the multiple pieces of this JET recommendation will require ongoing effort and funding.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

No timeline for additional lighting and wayfinding sign implementation can be identified without identified funding. Any effort will be ongoing.

Response to JET Recommendations

Recommendation: Transportation #11

(Page 12 of the JET Final Report)

Increasing Access to Grid-Improved Bike-Share Systems

Review and mitigate legal and other constraints to promote access and use of bike-share systems, especially in underserved communities beyond the typical commercial hubs.

LEAD AGENCY: FCDOT
COORDINATING AGENCIES: OCA

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

There are no legal or other constraints to promote access and use of bike-share systems. Fairfax County is part of six regional government jurisdictions in the cooperative management of the Capital Bikeshare system. Fairfax County has identified appropriate funding sources for the establishment and expansion of the Capital Bikeshare system in the county. We currently operate 35 bikeshare stations in the Reston, Tysons, and Merrifield areas of the county. Planned expansions are underway to add over 50 more stations in Reston, Merrifield, Vienna, and other areas of the county. These efforts have required funding of over $4 million. Therefore, the need for additional funding is the only constraint to expanding bikeshare in both underserved communities and commercial hubs.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Additional Capital Bikeshare funding is needed to implement this JET recommendation. No legislative authority is needed.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

No.

Transportation #11
Continued

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes. Additional funding is needed for the expansion of the Capital Bikeshare system in Fairfax County. For every million dollars of funding, an additional 20 stations and 100 bikes could be added at current costs. Staff has identified at least 20 areas of the county that would be good candidates for Capital Bikeshare system expansion.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

No timeline for additional Capital Bikeshare expansion can be developed until additional funding is identified.

Response to JET Recommendations

Recommendation: Transportation #12

(Page 12 of the JET Final Report)

Encouraging Use by Students, Workers, and Other Residents

Expand and promote programs that incentivize biking and walking to school and work. Ensure adequate bike racks at schools and transportation hubs. Hold county-wide events promoting trail systems, including bike rides, walks, etc.

LEAD AGENCY: FCDOT, FCPA
COORDINATING AGENCIES: FCPS

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)
- Keith Snyder (FCPA)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: FCDOT has managed the annual Bike To Work Day activities in the county and has grown the number of "pit stops" from three in 2003 to 25 in 2019. Many FCPS schools actively participate in Walk to School Day and Bike to School Day.

The county requires that bike parking be provided in new construction resulting from the development process. FCDOT has been able to provide limited bike parking to priority county facilities, most recently with Neighborhood and Community Services (NCS) facilities. Bike parking is included in transportation hubs, ranging from bike racks at bus stops, to secure bike parking rooms at three existing and future Silver Line parking garages, and at two future commuter parking garages.

FCPA: A program has been started but not completed.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCDOT: Additional bike parking funding is needed to implement this JET recommendation. No legislative authority is needed.

FCPA: The JET could pursue setting guidelines for racks at facilities, or call for a study of existing installations, usages, and programs for biking and walking.

Transportation #12
Continued

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: No.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: Yes. Additional funding is needed for the expansion of public-sector bike parking in Fairfax County. Additional funding is needed for significant increases in programs that incentivize biking and walking, such as holding countywide events.

FCPA: Agencies my need funds to procure and install bike racks and perform studies or upgrades as needed. If agencies sponsor reoccurring events, there will be a funding need.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT: No timeline can be identified for additional public-sector bike parking expansion and increased programs to incentivize biking and walking, such as holding countywide events, until additional funding is identified.

FCPA: Timeline depends on implementation requirements, i.e., number of facilities required to make the change, and lead time procuring materials.

Response to JET Recommendations

Recommendation: Transportation #13

(Page 12 of the JET Final Report)

Improving the User Experience

Develop a plan for adding porta-potties or other restroom options; publicizing and marketing trail systems maps to business, schools, and the general public; increasing tree canopy for better shade and shelter.

LEAD AGENCY: FCDOT, FCPA, DPWES-UFMD
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)
- Keith Snyder (FCPA)
- Brian Keightley (DPWES-UFMD)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT: FCDOT does not believe that adding porta-potties or other restroom options is a priority need for walking and biking in the county.

FCDOT does publicize and make available a bike system map of trails, on-road bike lanes and quiet neighborhood streets for bicycle travel around the county. Additionally, the bike maps provide educational and informational content about bike safety, etiquette, traffic laws and community destinations. These popular maps are provided free to residents and visitors with distribution at county facilities and private-sector bike shops, and the bike routes on the map have been currently updated to its fifth printing. In the future, these maps could be modified to note public restroom locations.

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.

FCPA: This program has not been started.

DPWES-UFMD: The recommendation is being partially addressed. Liner transportation projects, such as roads and trails, are usually exempt from the tree conservation ordinance, but their ancillary facilities are not. The Public Improvement process currently does not require trees or landscaping, though tree protection is required for existing trees preserved with projects. Proactively, DPWES-UFMD has been working with FCDOT and FCPA to improve street and landscape tree planting in the county.

Transportation #13
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCDOT: No, the JET recommendation for porta-potties or restrooms is not being addressed, and is not recommended, due to the cost, aesthetics, and potential community objections.

Yes, the JET recommendation for trail systems maps and tree canopy is partially being addressed.

FCPA: A study could be performed, or recent studies evaluated, for trail and restroom facility usage and demand. GIS in Parks could help identify location of restroom facilities to trails.

Surveys will be needed to analyze current tree canopy coverage and couple it with renewable energy goals. Planting trees in parking lots or other open spaces will reduce the solar generation potential of that space.

DPWES-UFMD: Planting of trees in the transportation right-of-way is a complicated process in Fairfax County. The majority of transportation right-of-way in Fairfax County is owned by the Virginia Department of Transportation. There are restrictions on where trees can be planted due to national and state highway standards. The standards consider trees a fixed object hazard and can limit line-of-sight. The permitting process for VDOT is resource intensive. An MOU should be established between VDOT and Fairfax County to allow for easier permitting of trees in the right-of-way.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

FCDOT: No.

FCPA: Planting trees will require surveys of facilities, canopy coverage design, and actual planting. While planting may be done in FY 2022, the bulk of the surveying and design will be needed in FY 2022 and short-term. Please see DPWES-UFMD response below.

DPEWS-UFMD: Yes, increased tree planting will require one additional FTE. A Project Manager I was recommended as part of the Stormwater Division's FY 2022 budget addendum.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCDOT: If porta-potties are to be implemented, there would be a significant ongoing cost.

FCPA: Any new facilities or rental of porta-potties will increase project or operations cost to agencies. Analysis could be done to determine cost/benefit breakeven between temporary facility

installation and maintenance and permanent facility installation (i.e., renting and maintaining a porta-potty for x number of months would be the same net present value price as a permanent facility).

Increasing tree canopy coverage may increase future tree maintenance/pruning needs in the long-term. To ensure success of any tree plantings, maintenance funding and staff time should be budgeted for weeding, irrigation (if necessary), and maintenance/removal of deer exclusion devices such as tree tubes. Careful survey and design are needed to ensure new trees have the best chance for survival and minimize future maintenance needs.

DPWES-UFMD: Yes, for long-range planning, alternatives or adjustments to funding sources for tree planting may need to be considered. Currently tree planting activities are funded through the Tree Preservation and Planting Fund and the Stormwater Fund, which is adequate at this time.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCDOT: No timeline is recommended.

FCPA: Additional facilities could take months to survey and plan placement. Temporary facilities cold be implemented in the shorter term, though installation of concrete or support pads could extend timelines.

Tree planting could take a few months to a year to survey, design and implement planting.

Response to JET Recommendations

Recommendation: Transportation #14

(Page 12 of the JET Final Report)

Coordination – Biking, Walking and Running

FCPS and the county should coordinate their efforts internally and with neighboring jurisdictions for a region-wide network. Each should develop legislative packages for the General Assembly to help achieve these recommendations. Additional funding sources such as Smartscale and Northern Virginia Transportation Authority should be used.

LEAD AGENCY: FCDOT
COORDINATING AGENCIES: Legislative Director

Please identify a lead agency contact person:

- Tom Biesiadny (FCDOT)
- Chris Wells (FCDOT)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCDOT does coordinate with neighboring jurisdictions in planning and identifying a regional network for biking and walking. FCDOT has provided input to the creation and current updating of the Capital Trails Network which provides a regional network of existing and planned facilities in the Metropolitan Washington Council of Government jurisdictions. This coordination is ongoing.

Funding sources such as Smartscale and Northern Virginia Transportation Authority are competitive funding sources that are weighted heavily towards reducing congestion. Typically, standalone bicycle and pedestrian projects do not score well in these funding competitions. However most new roadway projects funded from those and other sources are multi-modal and include pedestrian and/or bicycle facilities. Other grant programs such as Transportation Alternatives are better suited for bike and pedestrian projects.

The Active Fairfax Transportation Plan is identifying any legislative changes necessary to achieve the county's goals of walking and biking, and any legislative changes or initiatives would be pursued in cooperation with neighboring jurisdictions.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

This recommendation is in the process of being addressed.

Transportation #14
Continued

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

No.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

No.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

No timeline is recommended.

Response to JET Recommendations

Recommendation: Waste Management and Recycling #1

(Page 13 of the JET Final Report)

Zero Waste

The JET recommends Fairfax County government and schools set an aspirational goal to be at zero waste by 2030.

A plan for achieving zero waste by 2030 must be prepared by staff by the end of the 2nd quarter of CY 2021 (by June 30, 2021). The plan would be prepared by staff and should include staff ideas (possibly via a preliminary survey) about how to reduce the amount of waste in their offices/classrooms. Incentives should be considered for the best ideas.

LEAD AGENCY: DPMM, DPWES-Solid Waste Management, FCPA, FCPS (OFM, Get2Green and Procurement Services), FMD
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Nathalie Owen (DPMM), (primary)
- Ali Culhane (FCPS-Get2Green)
- Eric Forbes (DPWES-Solid Waste Management)
- Scott Larson (FCPS-OFM)
- Chris McGough (DPMM)
- Keith Snyder (FCPA)
- Emmanuel Waleola (FMD)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

Fairfax County Government ("county") and Fairfax County Public Schools ("FCPS") recognize the value and importance of reducing solid waste in their operations. Although there has not yet been a concerted effort to achieve this under the umbrella of a Zero Waste Plan, many steps have already been taken to address the county and FCPS's solid waste footprint. Below are some examples of such steps.

First, the respective boards have provided guidance on the topic of waste reduction through various documents. The Board of Supervisors ("Board")'s Environmental Vision, created in 2004 and updated in 2017, provides an overall framework for resource conservation and pollution reduction through "an increase in waste reuse, diversion and recycling." The Board's Operational Energy Strategy adopted in 2018 recognizes that the "reduce, reuse, and recover" solid waste management approach can save money, energy, and natural resources, and encourages county operations to adopt this approach. In 2019 and 2020, the Board approved

Supervisor Storck's Fairfax Green Initiatives Board Matter #1 and #2, respectively, which also include calls to action related to waste reduction in the community and/or county operations such as the phasing out of hydrofluorocarbon appliances from county facilities and purchases and ensuring their proper disposal. On the FCPS side, School Board Regulation 854 requires all FCPS facilities to recycle to the maximum extent possible and to recognize that FCPS must be a good steward of the environment. FCPS has two recycling initiatives: A) Recycling of paper and cardboard, glass, metal, and plastic; and B) Recycling of fluorescent light tubes and bulbs. These documents make clear to staff and to the community that waste reduction must be a priority, and they both guide and support staff in taking meaningful action.

As for county and FCPS operations, one area that has been very successful at minimizing waste is the various Surplus Property Programs, largely managed from the Logistics Center in North Springfield. Old furniture, equipment, and other property that is no longer in use are donated to charity, sold via auctions, traded back to contracted vendors (ex: electronics), or if they can have no other use, are recycled. The Logistics Center also manages hard-to-recycle scrap metal and achieves a 95% waste diversion rate.

Regarding day-to-day waste management, both the county and FCPS have well-established recycling programs as well as some composting operations. Both entities provide recycling bins with consistent signage throughout their facilities. In 2018 and 2019, Get2Green hosted recycling challenges where student-led teams at 29 schools conducted waste stream audits and created action plans to reduce their school's waste. Teams were then supplied with infrastructure required to implement their plan, such as recycling bins and additional signage. A third challenge was planned for spring 2020 but was halted due to the pandemic-caused shift to virtual instruction. These challenges supported the formation of school-based teams focused on waste reduction, educated students and staff about current recycling protocols, and incentivized engagement in improving school waste streams. Some schools also choose to provide alternative recycling programs such as plastic bag recycling with Trex, chip bag and juice pouch recycling with Terracycle, and marker recycling with Crayola's ColorCycle.

As for composting, the county has an ongoing pilot making compost bins available to all interested county agencies and Supervisor offices, and as of December 2019, forty-four schools either collected and/or processed compost. Lastly, both the county and FCPS dedicate resources to educating staff/students on recycling and composting. The Fairfax Employees for Environmental Excellence ("FEEE") group provides events, blogs, and newsletters to educate employees on various environmental stewardship topics. FCPS requires its waste contractor to weigh trash and recycling contents, and the Get2Green program makes this data available for each school as well as information on recycling, composting, food sharing, and upcycling.

The county has an Environmentally Preferable Purchasing Policy (created in 2009) which encourages greener purchasing by staff, including in ways that reduce solid waste generation (i.e., buying more recyclable, durable, and reusable products, and buying from vendors that take back or recycle products). This current policy is aspirational: it does not mandate what to purchase. However, some vendor contracts now include waste reduction clauses such as requiring 100% post-consumer recycled custodial paper products and take-back of hard-to-recycle items.

In addition, several facility management practices at both the county and FCPS are contributing to greener working and learning environments and creating behavior change. Both the county and FCPS have installed air dryers in bathrooms (as funding and infrastructure have allowed). Similarly, water filters and coolers have been installed in county office kitchens where funded, and bottle filling stations have been installed at a number of schools. Also, both facilities management agencies have reduced waste by buying cleaning products in bulk and using refillable containers and/or using concentrated chemicals to reduce packaging.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

The lead agencies welcome the opportunity to create a plan to achieve Zero Waste in county and FCPS operations by 2030. This is an exciting challenge not only to expand the efforts listed above but also to create a culture change and implement new and innovative approaches to making day-to-day actions and processes greener. The lead agencies believe that we can achieve significant reductions in the amount of solid waste generated, which could yield many environmental benefits from climate-warming emissions reductions to natural resource conservation, litter reduction and more. As will be discussed in the Zero Waste Plan due June 30, 2021, measures to reduce solid waste can create several economic and social benefits as well, and will support Fairfax County's mission to protect and enhance the quality of life of people, neighborhoods, and diverse communities.

One of the first tasks will be to **define what "Zero Waste" means to Fairfax County**. Definitions vary widely across communities, and the lead agencies will need to work with stakeholders to ensure that Fairfax County's definition is ambitious, yet achievable. Also, the scope of the Zero Waste Plan ("Plan") will need to be established. Lead agencies understand this JET recommendation to apply specifically to county and FCPS operations, not the greater community. The Plan will also need to make clear the roles and responsibilities of various agencies in its implementation.

Lead agencies concur with the JET's suggestion of conducting a **preliminary staff survey** for ideas, and also plan to learn best practices from peer governments and school districts that have implemented similar plans. In this early stage, lead agencies are considering the following strategies and tactics as possible focus areas of the Plan:

1. **Make systematic reduction and reuse a priority**. This strategy, while not the most common within local government zero waste plans, presents significant opportunities to reduce the county and FCPS's solid waste footprint. Tactics may include:
    a. Provide green solutions as the default for staff and students' daily tasks. Ex.:
        i. Stock office kitchens with reusable food ware.
        ii. Install more water filters or coolers in office kitchens and more water bottle filling stations in schools.
        iii. Install hand dryers in additional locations, as feasible.

iv. Set printer defaults to double-sided; take other paper-reducing actions.
v. Educate staff and students on individual reduction and reuse actions, engaging the FEEE volunteer group (county) and Get2Green (FCPS).

b. Incentivize or require reuse systems in certain contractors' operations, such as:
i. Use greener facility management products and equipment (ex: reusable, upgradable, refillable, repairable, and recyclable items).
ii. Transition food service operations to reusable food ware and food packaging. Consider cafeterias (many of which operated with reusables in the past), childcare/adult care centers, and other locations.
iii. Use reusable transportation and/or product packaging systems for products delivered frequently.
iv. Note that while strategic transitions to reusable systems may result in long-term cost savings for both county/FCPS and the contractors, special attention will need to be paid to avoid placing excessive burdens (related to the upfront costs of transition) on current or potential contractors, especially in the wake of the COVID-19 pandemic. Staff will focus reuse-related efforts where they are the most strategically beneficial and will consider ways to assist contractors if/as needed.

2. **Update the Sustainable Purchasing Policy** (addressed in a separate JET recommendation). This will guide county staff to prioritize source reduction and reusable, upgradable, refillable, repairable, and recyclable products, and, when possible, to consider the use of take-back clauses for a wider range of products.

3. **Improve end-of-life management of the materials that must be discarded**. This is typically the main strategy in local governments' zero waste plans. Tactics may include:
a. Conduct trash and recycling audits (addressed in separate JET Recommendation) to obtain baseline data and repeat periodically to track progress.
b. Improve and expand existing recycling and composting services.
c. Expand staff and student education around recycling and composting. Engage the FEEE volunteer group (county) and Get2Green (FCPS) to assist with this.
d. Consider disallowing or finding alternatives to the use of recycling bin liners.
e. Look into creating policies that will ensure trash and recycling pick-ups meet demand, whether by setting appropriate schedules or investing in compactors so that staff is always able to dispose of materials correctly. (An additional benefit of compactors is that they allow for fewer pick-ups, reducing costs and emissions).
f. Apply for and obtain zero waste certification from a recognized accredited certification and credentialling organization for the County Logistics Center.

4. **Consider new county ordinances** to strengthen zero waste efforts, as appropriate.

5. **Share successes and encourage action by peer governments, school districts, and the community.**
a. Another impactful set of actions may be to share successes, challenges and lessons learned with others to encourage and inspire action elsewhere. If the county and FCPS can help to nudge other public entities to address their own

waste more comprehensively, and/or can add momentum for future zero waste efforts in the greater Fairfax County community (such as zero waste plans within other anchor institutions, or new ordinances like the plastic bag fee currently under consideration), such outreach could be a valuable addition to the Plan. Furthermore, these efforts will provide the county and FCPS with opportunities to learn from peers on an ongoing basis.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

While funding has not been identified in the *FY 2022 Advertised Budget Plan*, the JET's goal of developing a Zero Waste Plan by June 30, 2021 suggests the following short-term funding needs:

FY 2021 Potential Immediate Cost: Staff suggests seeking a consultant to support the development of a Zero Waste Plan, which may include related assignments seeking to reduce the amount of municipal solid waste (MSW) being generated by various wastesheds within county and FCPS operations (e.g., FCPS, FCPA, county facilities, etc.). Initial costs may also include funds to establish a baseline of current waste streams by way of waste audits. Staff suggests an allocation of $250,000.00 during FY2021 to support the initial effort. Any potential balance remaining will be used to continue support services for plan implementation in FY2022.

FY 2022 Budget Implications: As explained above, early phase costs could focus on analysis and measurement of waste streams and identifying short term and long-term solutions. Specifically, FY2022 could see costs around waste stream audits by either internal or external entities and implementation of some low-cost "low hanging fruit" zero waste solutions.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Lead agencies expect that the Zero Waste Plan will require significant funding for various investments. Below are examples of likely funding requirements:

Examples of potential upfront and long-term costs include:

1. The creation and implementation of the Zero Waste Plan will require significant additional staff time.
2. Trash and recycling audits (addressed in a separate JET recommendation) will incur additional costs by waste haulers and/or require additional hours worked by staff.
3. Efforts to expand recycling and composting operations will incur costs related to educational resources, additional recycling and compost collection and/or compost processing structures.
4. Purchasing greener products often has a higher upfront cost (addressed in a separate JET recommendation)

Waste Management and Recycling #1
Continued

5. Installation of additional hand dryers in FCPS and county facilities, additional water filters/coolers (county) and bottle fill stations (FCPS), which may include electrical infrastructure changes, will require funding. Ongoing maintenance of the above appliances and increased utility bills will require funding.
6. Transitioning food service operations to reusable food ware and food packaging will incur upfront costs related to infrastructure changes to accommodate reuse logistics, and if dishwashing machines are part of the solution, electrical system upgrades, and appliance purchases will require funding as well. Ongoing maintenance of the appliances as well as increased utility bills will also require funding. Depending on the structure of the contract, the county and/or FCPS may also need to pay for the reusable items.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

The JET has identified a deadline of June 30, 2021 for the preparation of a Zero Waste Plan and an aspirational goal of reaching zero waste by 2030. This timeline is feasible.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

N/A

Response to JET Recommendations

Recommendation: Waste Management and Recycling #2

(Page 13-14 of the JET Final Report)

Trash and Recycling Audit

A trash and recycling audit should be planned and implemented to get a better idea as to what residents and businesses are throwing away and/or recycling. An audit would examine representative samples (e.g., 200 pounds) of trash and recycling with several staff dedicated to sorting and examining over a period of several days.

In the time of COVID-19, a trash audit would require full masks, Tyvek suits, etc., so there may be some additional budgetary and social distancing implications. A sample survey done by Solid Waste staff pre-COVID revealed that about a third of what is being discarded could be recycled or reused.

LEAD AGENCY: DPWES-Solid Waste Management
COORDINATING AGENCIES: None

Please identify a lead agency contact person: Charlie Forbes (DPWES-Solid Waste Management)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

The recommendation is in the process of being addressed, with the Solid Waste Management Program (SWMP) currently evaluating contractors to provide technical support to the assignment. The trash and recycling audit and required level of effort will tie directly to the Zero Waste initiative. As indicated by the recommendation, a waste composition and generation study will need to be commissioned to measure waste steam characteristics for FCPS and county government operations. Within the FCPS, it is anticipated that sampling will need to target specific sub-sectors that recognize significant differences in waste composition and quantity according to the type of school. School types to be considered for dedicated sampling may include elementary, middle, and high-schools, and schools with and without on-site food service.

Similarly, a sampling scheme for government operations will be complex, given the huge diversity in functions and the waste these functions generate. Large-scale municipal studies elsewhere have looked at government operations (non-school) across a range of strata, including: Clinical Health Services, Educational Services (other than schools, e.g., libraries), Social Services (including community centers), Parks and Botanical Gardens, Uniformed Public Safety, Correctional Facilities, Offices, and Public Works. Including analysis of schools, dedicated sampling may be necessary, or close coordination to adjust collection routes and scheduling may be needed to permit accurate, representative, and efficient sampling.

Waste Management and Recycling #2
Continued

Waste composition and generation is known to be seasonal and has been greatly affected by the COVID-19 pandemic. It is anticipated that sample design and some initial field work can be conducted in the year ahead, but defensible sampling and analysis in this area may have to wait until the pandemic has substantially subsided.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Coordination of resources and allocation of funds sufficient to complete the initial and ongoing waste audits as they relate to the Zero Waste Plan for county and FCPS operations will be required. SWMP can be the lead coordinator, but it will require participation and resources from other county and FCPS operations.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

While these actions do not have implications for the *FY 2022 Advertised Budget Plan*, staff has identified the following short-term funding implications:

An analysis of waste generation and composition for schools and government operations will require contractor support, likely including dedicated collection of refuse from target sectors. Depending on the degree of precision and accuracy required (which affects sampling scheme and size), the estimated cost for such a study is anticipated to cost $100-500K.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

Yes, the concept of measuring waste composition and quantity at regular intervals (or on an ongoing basis) is a common practice in Zero Waste communities, as it allows for the success of waste reduction and expanded recycling to be measured more directly. It is anticipated that routine waste audits will be required as part of the Zero Waste Plan.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

A timeline has not been identified. However, it is anticipated that this effort will fall within the implementation schedule of the Zero Waste plan.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

Response to JET Recommendations

Recommendation: Waste Management and Recycling #3

(Page 14 of the JET Final Report)

Procurement

County government and schools should undertake a review of purchasing: what is being ordered and what is being used, especially paper supplies and other items that could be recycled, and develop a sustainable purchasing program, to include recycled content paper and plastics, elimination of single use plastics, etc. Of particular concern now is the number of electronic devices (laptops, cell phones, and other electronic peripherals) that are needed for teleworking, and how these items are handled when broken or obsolete. Although many devices still have value in the current market after the hard drive is wiped, E-waste must be considered and addressed.

LEAD AGENCY: DPMM
COORDINATING AGENCIES: DIT, FCPS

Please identify a lead agency contact person:

- Nathalie Owen (DPMM)
- Chris McGough (DPMM)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

This recommendation is in the process of being addressed. The Department of Procurement and Material Management (DPMM) remains committed to reducing the environmental and social impacts of the county's purchasing decisions. Please note that in its sustainable procurement program, DPMM addresses both environmental and social sustainability (the latter focusing on nurturing quality of life and the community). Notable efforts to date include:

- A fully staffed Sustainable Procurement Team, as of December 2019. The team is responsible for advancing socially and environmentally preferable purchasing, supplier diversity, and equity initiatives. The team consists of two full-time employees within DPMM's Business and Technical Solutions Division. DPMM has had a decades-long commitment to sustainability, starting with a supplier diversity program in the 1980s and green purchasing in the early 2000s.

- An Environmentally Preferable Purchasing Policy and supporting Buyer's Guide, created in 2009, which encourage greener purchasing by staff. Recommendations include reducing the amount of materials purchased and used, purchasing products that are long-lasting, reusable, recyclable and/or made of recycled materials, and purchasing from vendors that reuse, take back and/or recycle the products purchased, where feasible. This policy, however, is aspirational. It does not mandate any specific products or purchasing practices.

- A robust electronic waste recycling program, managed from the county warehouse in North Springfield.

- Environmental specifications in solicitations, such as requiring 100% post-consumer recycled paper products and only EPA-registered germicides for custodial services and take-back clauses for hard-to-recycle items.

- A Small Business Enterprise Program, also known as Supplier Diversity Program, which is part of DPMM's Sustainable Procurement Team. This program aims to increase the proportion of county spending on goods and services that is spent on small, women-owned, minority-owned, and service-disabled veteran-owned businesses so that it may better reflect the diverse community of Fairfax County. Efforts toward this goal include outreach and events, workshops on how to sell to Fairfax County, internal policy and process changes aimed at addressing barriers to diversity, and other resources.

- An Equity Impact Plan (as part of the One Fairfax Policy implementation) to further examine the social impacts of purchasing decisions and expand efforts to diversify the supply chain. DPMM has convened a departmental equity team and is developing new education and outreach resources as well as examining policy changes. These initiatives are led by DPMM's Sustainable Procurement Team.

- A Supply Chain Corporate Social Responsibility ("CSR") Pilot launched in the summer of 2019. CSR assessments of supply chains have become prevalent in the private sector in recent years yet have rarely been seen in the public sector. As one of the first local governments in the U.S. to implement such a program, Fairfax County is leading the charge in addressing supply chain sustainability in the public sector.

  Fairfax County launched this initiative to better understand the social and environmental impacts of the $1 billion supply chain serving its 1.1 million residents. As part of this initiative, the county partnered with EcoVadis to conduct comprehensive CSR assessments of its key suppliers and their operations. The EcoVadis assessments produce a detailed scorecard for each participating supplier, covering four areas of sustainability: environment, labor and human rights, ethics, and sustainable procurement (how suppliers source their own materials and services). This initiative has revealed previously unknown environmental and social impacts of Fairfax County's supply chain and is helping to build a comprehensive assessment of risk.

  As of December 2020, Fairfax County has invited almost 200 of its top suppliers, which represent over $550 million in annual spending (including some FCPS spending), to participate in this initiative. Thanks to participating suppliers, DPMM now has insight into the sustainability performance of over $275 million in annual spending. After this initial benchmarking period, Fairfax County looks forward to collaborating with suppliers to improve performance as well as exploring options for integrating CSR scores into its procurement process.

Waste Management and Recycling #3
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

As explained above, there are many paths towards managing the environmental and social impacts of county operations. In expanding the Sustainable Purchasing Program, DPMM believes in taking a broad view that goes beyond a product-specific approach, as a product-specific approach is important but does not fully address a supply chain's impact. Through the Supply Chain CSR Initiative, DPMM seeks to learn how the goods and services purchased are produced: are they produced using responsible environmental practices such as proper pollution prevention and waste management? Are they produced using fair labor practices and ethical decision-making? The magnitude of such impacts is often larger than that of the product or service itself. For example, the Carbon Disclosure Project estimates that on average across industries, supply chain carbon emissions are over five times greater than direct carbon emissions. Thus, the suppliers we partner with matter.

Now having baseline CSR data on Fairfax County's supply chain, DPMM is exploring ways to integrate CSR into the procurement process.

In consultation with Department of Information Technology (DIT), FCPS, and other partner agencies, DPMM also plans to update its Sustainable Purchasing Policy and examine product-based approaches to sustainable purchasing, including those relating to recycled paper, single-use products, and electronics. However, DPMM is currently prioritizing the supplier-based CSR approach as well as the supplier-based Supplier Diversity Program and considering how best to balance these with product-based approaches.

Currently, Fairfax County is limited in its authority to use social and environmental sustainability criteria as part of its procurement process. However, a recently issued Attorney General Advisory Opinion (dated December 28, 2020) may provide flexibility to include requirements and qualifications in solicitations and contracts that heretofore were not available to the county. DPMM will work with the Office of the County Attorney to determine the extent of the flexibility now apparently available to us. DPMM will also continue to consider how state legislative changes could be helpful in making county procurement more sustainable and may make recommendations accordingly.

In order to successfully implement these various sustainable purchasing strategies, DPMM hopes to partner with other agencies including the County Executive's office. Policing high volume, low dollar purchases from many suppliers and spanning all county departments is a difficult endeavor, and policies establishing *what* agencies can buy are most effective originating outside DPMM. DPMM's expertise on *how* agencies purchase goods and services will be leveraged to implement the most effective policy possible.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Waste Management and Recycling #3
Continued

The supplier CSR program and assessments conducted by EcoVadis incur an annual cost (participating suppliers also co-fund the assessments). This is currently funded through October 2021. Please see below regarding financial implications of other sustainability efforts.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

It is well documented that some environmentally preferable/more sustainable products and services have higher upfront costs. However, many of these items have a lower total cost of ownership due to lower maintenance, energy consumption, etc. The long-term fiscal implications of buying more sustainable products and services will depend on the county's goals and acceptable payback periods. It is possible to incrementally improve the sustainability of our supply chain and remain cost neutral. However, if deep environmental progress is specified during the procurement process, a matching investment will likely be necessary.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

No timeline has been identified by the JET.

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

DPMM plans to time the update of the Sustainable Purchasing Policy with the approval of the FY 2022 Purchasing Resolution in July 2021 and plans to review the policy annually to consider any necessary updates.

Response to JET Recommendations

Recommendation: Waste Management and Recycling #4

(Page 14 of the JET Final Report)

Composting

Composting is a simple, effective, and environmentally friendly activity that should be a significant part of any zero waste plan. County government and schools should encourage expanded composting in both public and private venues, and should undertake a strong education program, in multiple languages, about waste and recycling for the general public.

LEAD AGENCY: DPWES-Solid Waste Management, FCPS, FMD
COORDINATING AGENCIES: DPD, OEEC/FEEE

Please identify a lead agency contact person:

- Eric Forces (DPWES-Solid Waste Management)
- Ali Culhane (FCPS-Get2Green)
- Emmanuel Waleola (FMD)
- Katie Hermann (DPD)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

As of December 2019, 44 schools in FCPS reported having school-based composting programs. Schools with composting programs manage a compost tumbler or pile on site and add compostable items from the cafeteria, classrooms, or garden activities. The resulting composted soil is typically used in the school's garden. In addition to outdoor composting programs, 17 schools reported having worm bins in at least one classroom for vermicomposting.

In 2016, FCPS funded a pilot commercial composting program at Olde Creek Elementary School through Veteran Compost. While the pilot was successful, the pilot did not move forward since there was not a commercial composting entity with the capacity to handle the large quantities of compostable materials generated by all FCPS facilities.

The FCPS Get2Green website provides information on recycling, composting, and upcycling in FCPS. In 2018 and 2019, Get2Green hosted recycling challenges where student-led teams at 29 schools conducted waste stream audits and created action plans to improve their school's waste stream. Teams were then supplied with infrastructure required to implement their plan. A third challenge was planned for spring 2020 but was halted due to the pandemic-caused shift to virtual instruction. The challenge may be offered again when school resumes in person.

In Fairfax County Government, FMD already recycles at county buildings. The contracted custodial vendor provides recycling bins and takes the products from the bins to the recycling dumpster where DPWES picks up the recycling material. In addition, bins are appropriately

marked for recycling and instructional/educational signs are posted in various locations throughout county buildings.

FMD is investigating composting opportunities and will work with current cafeteria vendors once the pandemic is over.

Fairfax Employees for Environmental Excellence (FEEE), which is a voluntary organization consisting of county employees who share an interest in recycling and the environment, and whose members are committed to the goal of environmental stewardship within Fairfax County Government, officially launched a food scrap collection and composting program covering county buildings and facilities in 2020. An expansion of a similar program from the previous year, the 2020 pilot has located drop-off food scrap bins throughout the county government's offices. Each week, the bins are collected, emptied, and replaced by a local vendor that uses the waste to create high-quality compost as a soil amendment for use in farming, landscaping, and gardening throughout the region. FEEE applied for additional funding in FY 2022 through the Environmental Improvement Program (EIP).

Due to COVID-19, the FEEE Compost Program is being rolled out in stages for 2021. The first round of participants are generally offices or departments with 50 percent or more of their staff reporting to the office in-person as of July 31, 2020. The initial participants are the Braddock District Office and King's Park Library, Chairman McKay's office, DPMM, the Mount Vernon Governmental Center, the Providence District Office and Community Center, and the Solid Waste Management Program's (SWMP) office suite within DPWES. Each of these offices has committed to hosting a small compost bin in their kitchenette or another common space. Each participating office has a Compost Champion who is responsible for ensuring the bin is emptied and replaced each week and for informing kitchenette users about how to use the compost bin properly.

In the late fall of 2020, DPWES-SWMP opened two drop-off locations to kick off a Food Scrap Composting Pilot Program. The drop-off locations, open to all county residents, are located at the I-95 Landfill Complex and the I-66 Transfer Station, with both locations open seven days per week. Carts inside the dedicated drop-off enclosures at each site can accept almost any type of food waste, essentially, (if it is edible, it is compostable), as well as soiled paper and cardboard food service items. Funding for the continued operation of this pilot has been requested through the EIP.

Per Article 10 of the Zoning Ordinance, a structure used for composting is considered a freestanding accessory structure and may be permitted in association with county facilities. A composting structure or area may not be located in any front yard and may be located in any side or rear setback if it is seven feet in height or less. If the structure exceeds seven feet in height, it is subject to the side and rear setbacks for accessory structures.

Waste Management and Recycling #4
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

- Recycling posters should be made available in multiple languages.
- Collaborate with liaison from Republic Services to strengthen outreach and education to staff and students in schools.
- Conduct research on capacity for commercial composting for county and school facilities.
- Explore with DPD current zoning parameters impacting composting at county and school facilities.
- Possible code update to expand composting. Update FCPS recycling regulation to include composting.
- Develop an education program about waste and recycling program for county and school building occupants and the general public that aligns with the zero waste recommendation.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Funding for the continued operation of the FEEE employee composting pilot program, and expansion of the DPWES-SWMP Food Scrap Composting Pilot Program has been requested through the EIP for FY 2022.

While the following actions do not have implications for the *FY 2022 Advertised Budget Plan*, staff has identified short-term funding implications:

- In order to expand on-site composting in county buildings and schools, additional funding would be needed to purchase compost bins.
- Larger-scale composting would require contracting with a commercial compost hauler.
- Custodial services contracts may need to be amended and costs may increase to include funding for a higher level of service.
- Funding will be required to make posters available in county and school buildings in multiple languages. Additional funding would be required for redesigning and printing posters to include information about composting or to create a composting poster.
- An outreach program about waste and recycling for the general public would require funding to develop and produce outreach materials.
- Training for employees on proper waste stream protocols.
- Resource implications to contracted cafeteria vendors are unknown at this time.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

- Ongoing facility collection costs for commercial composting pickup.
- Potential additional costs for custodial services due to increased workload.

Waste Management and Recycling #4
Continued

- Damaged bins or posters will need periodic replacement.
- Continued implementation of the waste and recycling outreach program for the general public would require continued funding of program materials. Resources may need to be updated to reflect future changes in recycling practices.
- Training for employees on proper waste stream protocols.
- Resource implications to contracted cafeteria vendors are unknown at this time.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

Implementation is ongoing with some composting taking place already in county and school buildings. Given the pandemic, there is some uncertainty as to what the new normal for waste collection will be post-pandemic. The results of the waste audit requested in the Waste Management and Recycling Recommendation #2 will also impact how composting moves forward for county and school facilities in alignment with the JET's zero waste goal.

Response to JET Recommendations

Recommendation: Waste Management and Recycling #5

(Page 14 of the JET Final Report)

Schools

These recommendations focus on schools and, most likely, would need to be delayed until schools reopen to in-person classes:

- Find an advocate for recycling/reduction in each school
- Expand and continue school partnerships with the Green Flag Program of the National Wildlife Federation
- Seek business sponsorships
- Find a model for sharing school supplies

LEAD AGENCY: FCPS
COORDINATION AGENCIES: None

Please identify a lead agency contact person:

- Ali Culhane (FCPS-Get2Green)
- Donna Volkmann (FCPS-Get2Green)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

Per FCPS Regulation 8541, "The principal or program manager shall appoint a liaison to administer and implement the recycling program within each school or building."

Get2Green has a formal partnership with the National Wildlife Federation to support hands-on environmental action in FCPS. Get2Green advertises the National Wildlife Federation's Eco-Schools USA program to schools and supports schools in following the Eco-Schools framework and applying for awards through Eco-Schools. In addition, Get2Green supports schools with grant funding (as available) to provide infrastructure required for action on Eco-Schools Pathways. The Eco-Schools Consumption and Waste pathway is one of the more popular and accessible pathways for schools getting started on their green journey.

In 2018 and 2019, Get2Green hosted recycling challenges where student-led teams at 29 schools conducted waste stream audits and created action plans to improve their school's waste stream. Teams were then supplied with infrastructure required to implement their plan. Teams that completed these challenges were able to submit their audit and action plan to earn an award through Eco-Schools. A third challenge was planned for spring 2020 but was halted due to the pandemic-caused shift to virtual instruction. The challenge may be offered again when school resumes in person.

Waste Management and Recycling #5
Continued

Republic Services, the recycling and waste hauler for FCPS, provides a representative to schools as part of their contract. This representative supports schools in improving their recycling. While this is not a business sponsorship, this relationship is valuable in supporting the recycling program in schools. Some schools participate in alternative disposal programs offered by businesses such as the Trex recycling challenge for plastic film or Crayola ColorCycle for markers and highlighters.

School supply requirements are handled at the school level. Some schools may already make recommendations on reusing supplies or offer families the opportunity to donate lightly used or new supplies to other families at the school.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

The current recycling regulation does not define the role of recycling liaisons, nor does it require that a list of recycling liaisons for each school be maintained. Additionally, there is no process for the recycling liaisons to receive training on best practices for recycling and waste reduction in schools. Additional consideration is required to determine the precise scope of the liaisons' responsibilities and training requirements as well as the support required for them to be effective. Providing this training and support may require additional staffing or funding. The recycling regulation would need to be updated to reflect any changes pertaining to recycling liaisons.

Get2Green will continue sharing information on Eco-Schools through the Get2Green website, newsletter, social media, and professional development or outreach events. Get2Green will also continue outreach to schools and staff members who express interest in Eco-Schools and environmental action.

Further clarification is needed to understand what the intended role of business sponsorships is in the recycling program. Before the pandemic, some schools participated in alternative recycling programs offered by businesses, such as the Trex plastic film recycling challenge and Crayola ColorCycle. To increase participation in these programs, Get2Green could feature them more prominently on the Get2Green website, advertise them each year, and seek additional opportunities offered by businesses for alternative disposal programs.

Further clarification is also needed about the model for sharing school supplies - is this for sharing within schools or between schools? For having students share a set of school supplies in a classroom? For donating or recycling new or lightly used school supplies? School supplies are handled at the school level rather than through central office, although central office can make recommendations to schools about reducing wasteful purchasing of school supplies.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Waste Management and Recycling #5
Continued

Additional staffing and funding may be required to track, train, and support recycling/waste reduction liaisons at each school. Additional consideration would be required to determine the short-term budget implications. Due to the uncertainty of when FCPS will return to a normal operating status, updates would likely be put on hold until schools are operating normally again.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

To increase recycling liaison engagement, FCPS may need additional staffing and funding to develop, track, train, and support recycling/waste reduction liaisons at each school. The exact scope of potentially required funding or staffing would require additional consideration.

Since liaisons at each school would likely be school staff taking on responsibility above and beyond their assigned duties, a stipend would help attract school staff to this role. This role could potentially be combined or connected to the wellness liaisons at schools.

While the Eco-Schools program itself is free, addressing Eco-Schools pathways can require a financial investment. Get2Green sometimes has grants to support schools in their Eco-Schools journey, but a more sustainable funding source would ensure the longevity of the program and expand equitable access to fully participating in Eco-Schools.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

Most schools in FCPS that participate in Eco-Schools have put that work on hold due to the pandemic. We anticipate being able to move forward with supporting Eco-Schools work, helping schools start alternative waste disposal programs offered by businesses, and exploring school supply sharing models when schools are operating normally again.

Response to JET Recommendations

Recommendation: Workforce Development #1

(Page 15 of the JET Final Report)

Green Career Toolkit

The JET recommends that FCPS guidance counselors and career center staff be equipped with a standardized toolkit for talking with students about the range of green careers and the background necessary to enter those careers. Ensure the presence of green career professionals in career days and student interview days.

LEAD AGENCY: FCPS
COORDINATING AGENCIES: FCPA, DPWES, DVS

Please identify a lead agency contact person: Keith Snyder (FCPA, coordinating agency)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

FCPA: Many Fairfax County and FCPA green career program spotlights and training media are already developed and could be packaged into toolkits.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

FCPA: Initially, staff should identify Green Career Vendors and current efforts in the county to identify educational tools already developed. Staff should focus career day outreach efforts on green industries to bring in more representatives from green companies. Staff could provide FCPS with position descriptions of Fairfax County and FCPA green careers including job duties and information on the necessary backgrounds. In addition, they could provide and expand on available media focusing on county and FCPA green careers including webpages, videos, showcases/spotlights, etc.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

FCPA: Any staff time to determine green position description for review by FCPS will require necessary budgeting. The development of new media, videos, spotlights, etc. will incur costs in

staff time and through the use of a consultant/contractor to develop these products. Staff time for green career professionals at career/student interview days should also be considered. Budgeting for toolkit materials such as printed brochures, displays, etc. will be required for printing, design, and upkeep.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

FCPA: N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

FCPA: The timeline depends on the level of implementation. In the short-term, staff could post current projects and efforts online. Short videos could be made to showcase equipment implementation and operation. Future efforts could include Green Career Professionals facilitating webcasts with students during their normal curriculum.

Response to JET Recommendations

Recommendation: Workforce Development #2

(Page 15 of the JET Final Report)

Solar Job Opportunities

Work with local solar installers to investigate job opportunities for new high school graduates, those with a two-year degree, and those graduating from Fairfax County job programs. Determine what training is needed for job entry and how jobs can be advertised to the potential employees.

LEAD AGENCY: FCPS
COORDINATING AGENCIES: None

Please identify a lead agency contact person: _____

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

Response to JET Recommendations

Recommendation: Workforce Development #3

(Page 15-16 of the JET Final Report)

Green Career Programs

Develop a comprehensive plan to offer one or more green career/economy-related programs for high school students to encourage participation in this emerging job market. Opportunities could include specialized training or certificate programs, job shadowing, internships, and real-world workforce experience in fields such as electric vehicle maintenance, solar panel installation, LEED Green Associate Certification, sustainable landscaping, and more. This could be done as a module to an existing course, an afterschool program, curriculum substituted as appropriate in an existing course or program, a new course, etc.

LEAD AGENCY: DPWES, DVS, FCPA, FCPS
COORDINATING AGENCIES: None

Please identify a lead agency contact person:

- Sandy Tomberlin (DPWES)
- Marguerite Guarino (DVS)
- Keith Snyder (FCPA)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DPWES: DPWES has worked with some school counselors to place recent high school graduates in limited term plant operator positions. DPWES has also tried to establish a similar program to place recent graduates or other students who are now attending college in trades positions in DPWES-Solid Waste Management, Wastewater Management and/or Stormwater Management programs, all of which are environmentally focused. DPWES has attended job fairs as part of its outreach to encourage students to explore careers in the county's environmental services.

DPWES has worked nationally with the Water Environment Federation and other communities to develop a green Stormwater certification program that may lend itself to modification for use in the schools.

DVS: See below.

FCPA: Many Fairfax County and FCPA green career program spotlights and training media are already developed and available.

Workforce Development #3
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DPWES: DPWES does not need any additional legislative authority.

DVS: DVS implemented an internship program in 1999 to provide selected high school seniors an opportunity to gain technical knowledge and practice hands-on automotive skills. Working under the direct supervision of DVS technicians, interns participated in mandatory training based on criteria set by DVS and the school system. The program was eliminated in 2009 because of a countywide budget shortfall. In 2017, the program was re-established as an apprentice program, where, after completing the internship and graduating from high school, students may apply to underfill technician positions. After gaining the practical experience required and receiving approval from their direct supervisor, the former intern can be promoted to fill the position.

DVS staff meet with students enrolled in technical programs and the teachers and career resource specialists who teach and administer the programs, to recruit talented and interested high school students. DVS technicians are gaining experience with electric vehicles and hope to expand the existing apprentice program to include electric vehicle and sustainability related activities.

FCPA: Staff should initially identify Green Career Vendors and current efforts in the county to identify educational tools and opportunities already developed. Career day outreach efforts should be focused on green industries to bring in more representatives from green companies. County staff can provide FCPS with position descriptions of Fairfax County and FCPA green careers including job duties and information on the necessary background. In addition, staff could provide and expand on available media focusing on county and FCPA green careers including webpages, videos, showcases/spotlights, etc.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

DPWES: This does not have budget implications as the county would only be filling funded positions**.**

DVS: The DVS apprentice program is included in the FY 2022 Proposed Budget for the Department of Vehicle Services.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DVS: DVS leadership budgeted $40,000 to establish a student internship program to train the next generation of technicians and parts specialists and developed new position classifications to hire graduates after high school. Students are paid while learning the latest automotive maintenance and inventory control technology and the use of industry equipment. Students gain

work experience on a wide variety of vehicles and learn the importance of safety. Participation may diminish if students are not paid because they could gain the same experience for pay at private businesses.

FCPA: Any staff time to determine green position descriptions for review by FCPS will require necessary budgeting. The development of new media, video, spotlights, etc. will incur costs in staff time and through the use of a consultant/contractor to develop these products. Staff time for green career professionals at career/student interview days should also be considered. Budgeting for materials such as printed brochures, displays, etc. will be required for printing, design, and upkeep.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

DVS: If schools open in fall 2021, then the program will be started again.

FCPA: The timeline depends on the level of implementation. In the short-term, staff could post current projects and efforts online. Short videos could be made to showcase equipment implementation and operation. Future efforts could include Green Career Professionals facilitating webcasts with students and the public.

Response to JET Recommendations

Recommendation: Workforce Development #4

(Page 16 of the JET Final Report)

Utilizing Buildings as Learning Tools

Develop a plan to utilize county buildings as learning tools as solar panels are installed, Net Zero building practices are utilized, and the county continues its use of sustainable building and architecture. Ensure building occupants have the opportunities to learn about all of the building's sustainable features through educational tools such as signage, dashboards, and interactive models.

LEAD AGENCY: DPWES, FCPA, FCPS, FMD
COORDINATING AGENCIES: OEEC

Please identify a lead agency contact person:

- Vrushali Oaks (DPWES)
- Keith Snyder (FCPA)
- Emmanuel Waleola (FMD)

Has this recommendation already been addressed, or is it in the process of being addressed? If so, please provide details.

DPWES-Capital Facilities: The Building Design and Construction Division (BDCD) incorporates sustainable design educational tools in new building projects, such as libraries, which are accessible to the public. Green building elements are featured as part of the guided tours provided when a new facility opens. Green education brochures with key maps and signage are available to the public for self-guided tours. Recently, green building features have also been presented on the electronic message boards located in the public lobbies of renovated county libraries and select new facilities.

FCPA: FCPA is in the final design phase of a facility to meet the Living Building Challenge, where, among other criteria, the facility must have positive net-metering (generate at least 5 percent more electricity than it produces); be water neutral; utilize sustainably sourced materials and products and feature educational programs. See: https://www.fairfaxcounty.gov/parks/planning-development/development/sully-woodlands-stewardship-education-center
Vendors awarded the solar RFP have dashboards available for sites to display generation and carbon offset data.

FMD: This recommendation is in the process of being addressed and will be addressed when Solar PV are installed at county facilities by the county's solar PPA service providers. FMD's role will be to coordinate with the OEEC.

Workforce Development #4
Continued

If this recommendation has not been addressed, or has only partially been addressed, what actions should be taken pursuant to the JET's recommendation? Do any of these actions require new legislative authority? If so, please note where authority is needed.

DPWES-Capital Facilities: No new legislative authority is required. Green building educational tools are incorporated in Capital projects that offer easy access to the public. These can be expanded to include innovative tools, such as dashboards or interactive models, and to allow the public safe access to view additional green building components such as stormwater ponds, vegetative roofs, and solar panel arrays.

While BDCD will continue to incorporate educational tools in new facilities, the development of a comprehensive sustainable building educational program will require ownership, implementation, and continual management, by the agencies operating the facilities.

FCPA: Legislation would be needed to require implementation of more sustainable features, mainly to cover the potential increased cost of these features.

Do the actions recommended above have any budget implications for FY 2022? If so, please explain.

While these actions do not have implications for the *FY 2022 Advertised Budget Plan*, staff has identified the following short-term funding implications:

DPWES-Capital Facilities: Additional design and construction funding may be required to expand the current educational programs to include innovative electronic technology tools and to create safe public access to view the various green building elements including solar arrays in select facilities.

Agencies operating the facilities will need to consider fiscal implications on their operating budgets to implement the program.

FCPA: Any staff time or equipment needed to pursue these goals would be needed for the current and upcoming fiscal years. Staff time would be needed to develop the programs and packages, implement, and actually teach or communicate to the public. Any signage (computers, televisions, posters, etc.) would need capital funding.

Do the actions recommended above have any long-range fiscal implications? If so, please explain.

DPWES-Capital Facilities: Additional design and construction funding may be required to continuously improve and support innovative educational programming and public access to the green building features in select facilities.

Workforce Development #4
Continued

Agencies operating the facilities will need to consider fiscal implications for ongoing management of the program.

FCPA: Funding would be needed for increased implementation of the program, including staff time for development and implementation, and potentially for teachers of the materials. Maintenance and upkeep on the interactive models, signage and curriculum would also need funding for labor and materials.

If the JET has identified a timeline for this recommendation, is this timeline feasible? Why or why not?

N/A

If no timeline has been identified by the JET, when might the agency/agencies anticipate implementing this recommendation?

DPWES-Capital Facilities: Expanded educational programs and tools can be incorporated on appropriate project types going into design as identified in the Capital Improvement Program. However, the implementation timeline for a comprehensive educational program will need to be developed by the agencies operating the facilities.

FCPA: Program outlines could be developed in the near term. With a number of renewable systems in the design and development phases, there are opportunities to document the implementation process for educational purposes (i.e., photos of the process, webcasts during major events, Q&A sessions with project teams). The county would likely want to restrict implementation to a small number of facilities for review prior to countywide implementation.