Joint Environmental Task Force

Fairfax County Board of Supervisors

Fairfax County School Board

Final Report

October 1, 2020

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Background

On October 30, 2018 then Chairman Sharon Bulova brought forward a Board Matter, passed unanimously, that instructed County staff to identify potential areas of environmental collaboration with Fairfax County Public Schools (FCPS) to be presented at a joint Board of Supervisors – School Board meeting. At the subsequent Environmental Policy Meeting between the two Boards on April 2, 2019, the Boards discussed and decided to move forward to establish a joint committee, the Joint Environmental Task Force (JET). The respective Board Chairs, Chairman Bulova and then School Board Chair Karen Corbett Sanders, presented the framework of the JET to their Boards. The JET was charged with working with staff and engaging the community to identify areas for collaboration between Fairfax County Government and FCPS to further County efforts in energy efficiency and environmental sustainability, developing implementation strategies and making recommendations to the Boards.

In spring and summer 2019, the JET Executive Committee solicited community members to round out the membership, drafted a mission statement and developed focus areas. In September 2019 the JET held its first full membership meeting. At subsequent meetings, the mission and organizational areas were finalized and approved. From the organizational areas identified, four overarching focus areas were chosen for priority focus and subcommittees were formed to work with staff to understand existing practices and policies and to draft recommendations. The subcommittees included: energy, transportation, waste management and recycling, and workforce development. On September 2, 2020, the JET adopted the draft report from the subcommittees and recommended the Executive Committee members present them to their respective Boards.

Mission, Authority, Organization and Focus Areas

Mission

The mission of the Fairfax County Board of Supervisors/School Board Joint Environmental Taskforce ("JET") is to join the political and administrative capabilities of the County and the school system to proactively and equitably address climate change and environmental sustainability. The JET will include community partners from higher education, industry, community and student advocacy groups to recommend aggressive goals in areas of common County and school operations and influence, such as workforce development, infrastructure and sustainability of public facilities and transportation, land use planning, communication and community engagement, and other challenges and opportunities as they arise. The JET will provide a forum for informing, advising, collaborating and addressing Countywide issues and aligning institutional policies and practices pertaining to climate change and environmental sustainability through the lens of One Fairfax and to appointing bodies.

Authority

Communication and Authority

The JET will communicate to the Board of Supervisors and School Board on a regular basis. Items identified by the JET, Superintendent or County Executive that require modifications to budget, policy, or capital improvement planning will be referred to respective Boards for consideration. In addition, the JET has a unique opportunity to get our environmental message out to the community. Joint efforts by the County and Schools amplify our messages and broaden our audience as we seek to engage, inform and change behaviors.

Organization

Facilities/Infrastructure

Many efforts are already underway to improve the environmental quality of our existing and new facilities and to reduce greenhouse gasses through passive and active designs, solar power, lighting, HVAC, etc. The JET will focus on identifying, co-locating and combining facilities and uses for accelerating these improvements, exploring new and innovative concepts, encouraging pilot initiatives to test these concepts, and educating/tasking building managers and leaders as to findings and implementing them in their own facilities. SMART goals for achieving net zero carbon emissions and energy or carbon emissions per industry appropriate measures will be recommended by the JET. SMART goals should include energy use per anticipated user, comparable best practices for similar facilities, LEED or like rating organization certifications and other third-party measures.

Land Use

In order to enhance and accelerate our collaboration resulting in more environmentally sustainable land use decisions, the JET will prioritize co-locating resources, usage densities, types and intensities of development, and green space planning and preservation. Plans will incorporate walking, biking and multi-modal trails, employing green energy opportunities and carbon capture. Comprehensive Plan decisions, which more effectively partner and plan for "smart growth" and align with nearby, right-sized public facilities, will be key JET goals essential for reducing misaligned facility needs and transportation costs. The JET will recommend measures for assessing improvements and best practices for land use.

Transportation

This element provides significant potential and opportunities for partnering on climate change mitigation. The JET will identify SMART goals consistent with our Board's environmental policies and leadership expectations by developing recommendations for decreasing per person carbon emissions per mile traveled.

Workforce Development

The JET will recommend County/school partnerships in collaboration with continuing education entities to create and enhance educational programming, internships, and co-op programs to support workforce development in green energy and environmental sustainability fields. Educational partnerships SMART goals will include career ready graduates and local talent retention.

Public Health

Impacts of climate change to public health will be considered in our joint roles of protecting and improving quality of life in our community. The JET will work to identify needs, seek and grow available public health resources, and advance use of modern health care technology.

Focus Areas

After outlining the organizational areas of the JET, four overarching focus areas were identified as priorities. The four overarching focus areas inherently encompass many of the organizational areas. The four main areas of focus were determined to be **energy, transportation, waste management and recycling, and workforce development**.

Executive Summary

The challenges of climate change are growing exponentially and we, as County leaders, need to set a clear and determined agenda to move as swiftly as possible to reduce our greenhouse gas emissions and mitigate the effects of climate change. Today, we not only hear the news and statistics about the environmental challenges across the globe, but we hear regularly from Fairfax County residents that they are concerned and want us to lead and be leaders.

The County and Schools have done much to advance environmental efforts, but in light of the urgency of the climate crisis, we must do more. The evidence is clear. We are experiencing more frequent and intense storms, sea level rise and extreme rain events, increasing temperatures with July 2020 being the hottest on record in the Northern Hemisphere and wildfires burning out of control.

Across the globe this past year we have seen unprecedented fires in Australia, the flooding of Venice due to sea level rise and extreme heat in Siberia. Here in Fairfax County we are prone to sea level rise along our east coast. The July 2019 rainfall and flooding event cost more than 14 million in recovery. We experienced 26 days over 90 degrees in July 2020. We also know that much like COVID-19, the effects of climate change will impact our low-income residents and communities most severely.

We must act now, and the Joint Environmental Task Force (JET) was established to do just that.

The following subcommittee sections detail the recommendations of the JET. Below is an executive summary of the JET recommendations for consideration by the Fairfax County Board of Supervisors and the Fairfax County Public Schools (FCPS) Board:

- **Energy:** The Fairfax County Board of Supervisors, the Fairfax County Park Authority, The Fairfax County Regional Housing Authority, and the Fairfax County School Board should commit to being energy carbon neutral by 2040.
- **Solid Waste and Recycling:** Fairfax County government and schools should set an aspirational goal to be at zero waste by 2030.
- **Workforce:** Fairfax County government and schools should provide additional resources for students and adult learners to know about and pursue “green” career paths.
- **Transportation:** Fairfax County Connector bus fleet should be transitioned to electric (or other non-carbon emitting) alternatives by 2030, and the FCPS fleet by 2035. All non-bus fleet vehicles that have electric alternatives should be transitioned by 2025.

Recognizing the importance of environmental justice, all County and school initiatives undertaken as a result of these recommendations shall be implemented through the One Fairfax Lens with a prioritization on equity.

Report of the Energy Subcommittee

Members of the Energy Subcommittee are Mount Vernon District Supervisor Dan Storck; Rich Aiken (Fairfax resident and climate expert), Smita Chandra Thomas (Fairfax resident and energy expert), and Wendy Gao (student). Others participating as presenters or advocates were Kambiz Agazi, Director of the Office of Environmental & Energy Coordination of Fairfax County, Justin Moss, Director of Facilities Management at Fairfax County Public Schools and John Lord, Coordinator III for Energy Management at Fairfax County Public Schools.

This report by the Energy Subcommittee of the JET summarizes the recommendations for a vision and goals for adoption by the Fairfax County Board of Supervisors and the Fairfax County School Board that are aspirational, achievable, and reflect the Boards' strong commitment to addressing the global climate crisis, placing it among the leaders in climate action and resilience planning nationwide. These recommendations are also aimed at reducing operational expenses for the County immediately and for the long-term. Any reference to "County" in this report means resources managed or owned by the Fairfax County Board of Supervisors, the Fairfax County Park Authority, the Fairfax County Regional Housing Authority, or the Fairfax County School Board unless otherwise stated.

To formulate the recommendations, the subcommittee met in person and virtually seven times between September 2019 and August 2020 at broader JET meetings that broke out into subcommittees and reported back to the JET. County staff presented the current state of the County energy use and emissions; following which the subcommittee and staff discussed appropriate goals for the future and a timeline to reduce energy use and related emissions and increase the use of clean renewable energy by the County.

The subcommittee took the approach of setting goals that were supported by sub-goals and strategies that the subcommittee believes are practically possible and achievable with sufficient political will, an innovative mindset towards financing options, and a continuation of the focus on results by County staff.

Recommendation #1:

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

Recommendation #2:

Subgoals must be adopted to achieve near-term impact and ensure the successful achievement of the 2040 energy carbon-neutral goal. The recommended subgoals are:

1. Carbon emissions: Achieve 50% emissions reductions by 2030, as compared to the 2019 baseline.
2. 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.

3. 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.
4. 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.

Net-Zero Energy (NZE) definition: A net-zero energy building is defined 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.

Recommended Initiatives to Achieve Goals:

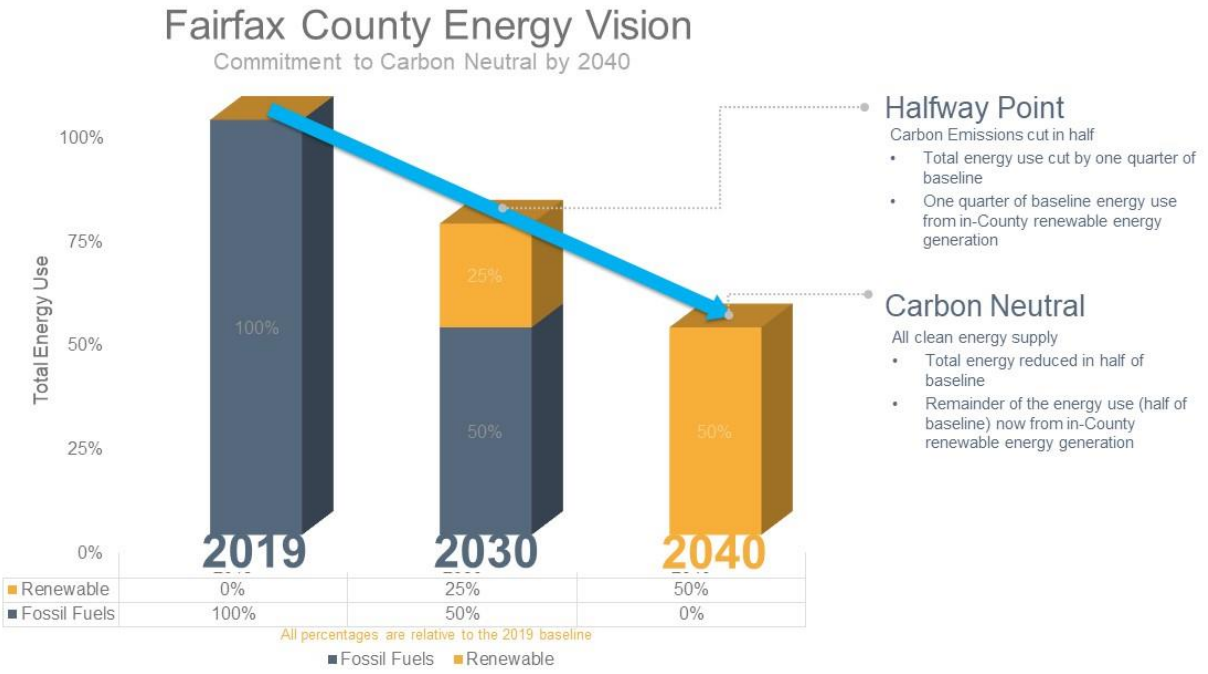
1. Use of Energy Service Companies (ESCOs) and Energy Saving Performance Contracts (ESPCs) to renovate existing buildings on an accelerated schedule.
2. Assess feasibility of additional solar installations at sites like brownfields and parking lots.
3. As part of NZE projects, the project team should set the maximum energy use intensities (EUI in terms of kBtu/sf/year) for the facilities.

Recommended Coordination:

It is recommended that County staff among the respective organizations coordinate on the following:

- Develop baseline energy use and emissions data for the year 2019.
- Complete the inventory of all potential solar sites, potential for array size and order of magnitude energy potential for site.
- Identify potential sites for shared solar/geothermal installations.
- Undertake a strong awareness program about energy and emissions for the staff and general public.

Note: The subcommittee has additional information, if desired, about achieving net-zero energy performance and carbon-neutrality.


Fairfax County Energy Vision
Commitment to Carbon Neutral by 2040
Total Energy Use
100%
75%
50%
25%
0%
100%
25%
50%
50%
2019
2030
2040
Renewable 0% 25% 50%
Fossil Fuels 100% 50% 0%
All percentages are relative to the 2019 baseline
Fossil Fuels
Renewable
Halfway Point
Carbon Emissions cut in half
• Total energy use cut by one quarter of baseline
• One quarter of baseline energy use from in-County renewable energy generation
Carbon Neutral
All clean energy supply
• Total energy reduced in half of baseline
• Remainder of the energy use (half of baseline) now from in-County renewable energy generation

Report of the Transportation Subcommittee

Members of the Transportation Committee are Karl Frisch, Fairfax County School Board; Karen Campblin, Richard Clayton, and Susan Stillman. Others participating as presenters or advocates were Julie Kimmel and Bobby Monacella, Mothers Out Front Fairfax; Kambiz Agazi, Director, Fairfax County Office of Environmental and Energy Coordination; Tom Biesiadny, Director, Fairfax County Department of Transportation; Francine Furby, Director of Transportation, Fairfax County Public Schools; and Marguerite Guarino, Deputy Director of Administration, Fairfax County Department Vehicle Services.

FCPS and County Bus and Vehicle Fleets

Fairfax County Public Schools and the Fairfax Connector system should transition to entirely electric bus fleets as rapidly as possible because traditional diesel buses are harmful to the environment and our public health. Diesel bus emissions release climate-changing carbon pollution into the atmosphere and cause respiratory diseases while also making existing problems like asthma even worse. Around the globe, electric buses are one of the fastest-growing portions of the electric vehicle market. By moving quickly toward electrification, the county and school system can "lead by example."

Fairfax County Public Schools has a fleet of 1625 diesel buses, each with an average age of 18 years at the time of replacement. Currently, there are 520 buses within five years of the average replacement age. In addition to the bus fleet, the school division has 815 non-bus vehicles, including large service trucks. The average age for non-bus vehicle replacements is 12 years. Currently, there are 395 non-bus vehicles within five years of the average replacement age. None of the FCPS buses or other vehicles are hybrid or electric, though FCPS will receive eight electric buses this fall.

Fairfax Connector has a fleet of 350 diesel buses, each with an average age of 15 years at the time of replacement. Currently, there are 94 buses within three years of the average replacement age. In addition to the bus fleet, Fairfax County also has a very large number of fleet vehicles ranging from motorcycles to trash trucks. The only non-bus vehicles under consideration for electrification today are 4-seater passenger vehicles. The County owns 3 and plans to purchase a small number of 100% electric vehicles in the 2021 replacement cycle.

Recommendations:

- **Bus Fleet Replacement:** The Fairfax Connector diesel bus fleet will 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.
- **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.

- **Charging Infrastructure:** Necessary charging infrastructure will be installed to scale as fleets grow. Wherever possible, charging infrastructure will serve FCPS and the County.
- **Take Advantage of Grants:** Apply for grant funding for electric buses and the affiliated charging infrastructure whenever possible.
- **Use 100% 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. Appropriate benchmarks will be determined to help measure progress toward achieving these goals.
- **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.
- **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.
- **Coordination:** 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.

Biking, Walking, and Running

Transportation is one of the largest contributors to greenhouse gas emissions in the United States. On-road vehicles such as cars, light trucks, buses, and freight contribute to 39% of greenhouse gas emissions in Fairfax County. Providing residents with safe, well-designed, and ADA compliant alternative transportation choices will help reduce greenhouse gas emissions, promote healthier living, and increase access to jobs, education, medical services, local businesses, and other quality of life amenities. Thoughtful investments in our local infrastructure will lead to a more connected and robust series of bike lanes, trails, walkways, pedestrian bridges, and sidewalks so that students have safe options for getting to school, workers have more options for getting to the office, and all residents can enjoy all that Fairfax County has to offer.

Supporting a comprehensive, countywide transportation system can prove to be an effective tool to not only combat climate change but to support health, equity, and economic sustainability for all Fairfax County residents. With a little strategic planning we can integrate travel via roadways with parks, trails, and continuous sidewalks as well as improve connections to transit stations by foot, bike, and bus.

Recommendations:

- **Improve Options for Safe Biking and Walking:** The forthcoming Active Fairfax Plan should prioritize increasing safe, well-designed, ADA compliant, and interconnected (including with mass transit) options for biking, walking, and running.
- **Develop 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.

- **Increase 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.
- **Encourage 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.
- **Improve the User Experience:** Develop a plan for adding porta-potties or other restroom options; publicizing and marketing trail systems maps, to businesses, schools, and the general public; increasing tree canopy for better shade and shelter.
- **Coordination:** 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.

Note: The Transportation Committee has suggested sub tasks, summary information, contacts and additional detail for each recommendation.

Report of the Waste Management and Recycling Subcommittee

Members of the Solid Waste and Recycling Subcommittee are Mason District Supervisor Penny Gross; Meg Mall, executive director of Faith Alliance for Climate Solutions; Susan Stillman, and Wendy Gao (student). Others participating as presenters or advocates were Eric Forbes, Solid Waste Division Manager; Donna Volkmann, Educational Specialist, Get2Green; Ali Culhane, Coordinator, Get2Green, Elizabeth Ende, citizen; and Daphne Balotas, Jasmin Salous, and Jessica Butturff, Pre-K/Head teachers at Bailey's Elementary School.

The subcommittee met several times, in person and virtually, between February and August 2020, to formulate recommendations for the JET report to the Fairfax County Board of Supervisors and the Fairfax County School Board. We examined a number of approaches to reducing waste and increasing recycling, including a presentation by Pre-K/Head Start teachers at Bailey's Elementary School that focused on requirements that result in wasting resources, especially plastics mandated by federal regulations. Discussions with staff from the Solid Waste Division also were very helpful in determining current practices and industry operations.

The COVID-19 pandemic has changed some traditional approaches to Solid Waste and Recycling. With many offices closed, and people working from home, business trash has decreased significantly, but that decrease has been balanced with significant increases in residential trash and recycling. Fairfax County schools closed in mid-March 2020, and distance learning is planned for at least the first quarter in the Fall of 2020, so the normal waste cycles from schools (paper, cafeteria food waste) also changed. However, that situation is not expected to be long-term, so the recommendations listed below for schools are suggested for a time when teachers and students physically return to the classroom.

Recommendation #1:

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

Recommendation #2:

A plan for achieving zero waste by 2030 must be prepared 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.

Recommendation #3:

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 discarded could be recycled or reused.

Recommendation #4:

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 expensive 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.

Recommendation #5:

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.

Recommendation #6:

These recommendations focus on schools and, most likely, would need to be delayed until schools re-open 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

Note: The subcommittee has additional information, if desired, about trash and recycling audit operations as well as Pre-K/Head Start requirements.

Report of the Workforce Development Subcommittee

Members of the Workforce Development Committee are Elaine Tholen, Fairfax County School Board; Greg Ulses, Citizen; Ire Kim, Student. Others participating as presenters or advocates were Rachael Domer, FCPS Career and Technical Education; C. Flint Webb, Leidos, Inc.

The Workforce Development working group investigated career opportunities in the Fairfax County geographic area around renewable energy, energy conservation, green building, resource and wildlife management, stormwater management, wastewater management, sustainable landscaping and more. The subcommittee recognizes and addresses the need for additional resources for FCPS and Fairfax County adult learners to know about and to understand how to pursue "green" career paths.

In reaching out to Fairfax County for possible collaborations, discussions with the Fairfax County Park Authority, the Department of Vehicle Services and the Department of Public Works and Environmental Services resulted in several immediate ways to collaborate and many ideas for longer term joint work.

Four recommendations are proposed below. There are components of each goal that can be initiated immediately and some that will be easier to implement and work toward once COVID-19 is behind us and students are again meeting in-person in our school buildings.

Recommendation #1:

Equip FCPS guidance counselors and career center staff with a standardized tool kit 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.

Recommendation #2:

Work with local solar installers to investigate job opportunities for new high school graduates, those with a 2-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.

Recommendation #3:

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.

Sample Certification List:

1. OSHA 10
2. HAZWOPER--40 hour certif course for chemical sampling training, MSDS (Material Safety Data Sheets)
3. National Green Infrastructure Certification Program
4. Chesapeake Bay Landscaping Professional
5. LEED Green Associate
6. National American Board of Certified Energy Practitioners (NABCEP)

Recommendation #4:

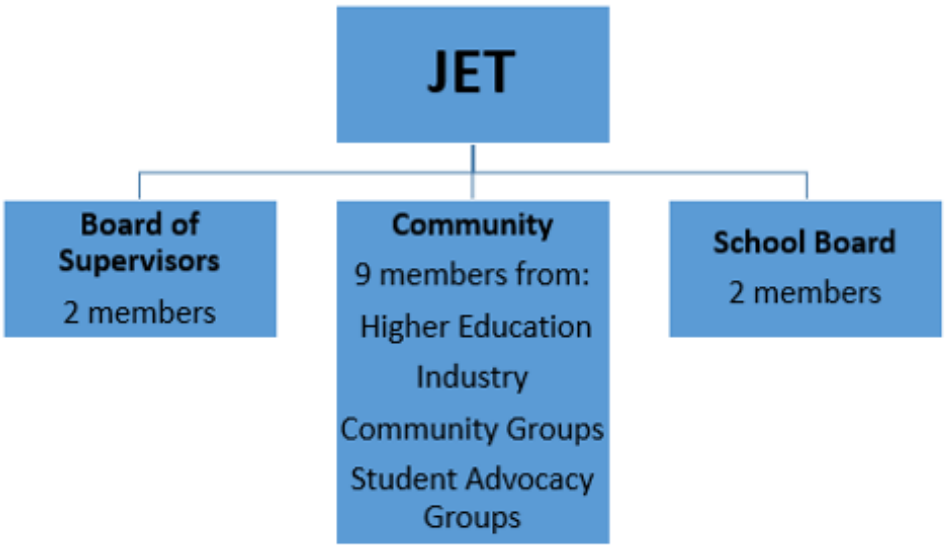
Develop a plan to utilize our county buildings as learning tools as we install solar panels and begin to utilize Net Zero building practices and continue our use of sustainable building and architecture. Ensure building occupants have the opportunities to learn about all of the building's sustainable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

Timely Sub Tasks:

1. Utilize the next new school as a laboratory to explore these practices as the building is designed, built and utilized. (Silver Line, 2022-2026)
2. Utilize Cooper Middle School and Frost Middle School renovations as a pilot as the renovations are done (2020-2024).
3. CHPS verify upcoming new construction projects in FCPS starting with those in planning in 2021.

Note: The Workforce Development Committee has suggested sub tasks, summary information, contacts and additional detail for each recommendation.

JET Membership



Executive Committee	**Subcommittee Membership**
Supervisor Dan Storck	Energy
Supervisor Penny Gross	Waste Management & Recycling
School Board Chair Karen Corbett Sanders *(April 2019 – August 2019)*	
School Board Member Pat Hynes *(April 2019 – December 2019)*	
School Board Member Dalia Palchik *(August 2019 – December 2019)*	
School Board Member Elaine Tholen *(January 2020 – present)*	Workforce Development
School Board Member Karl Frisch *(January 2020 – present)*	Transportation

Taskforce Members	
Richard Aiken	Energy
Karen Campblin	Transportation
Richard Clayton	Transportation
Meg Mall	Waste Management & Recycling
Susan Stillman	Transportation, Waste Management & Recycling
Smita Chandra Thomas	Energy
Greg Ulses	Workforce Development

Taskforce Student Members	
Wendy Gao	Energy, Waste Management & Recycling
Ire Kim	Workforce Development