

Date of Meeting: December 1, 2020

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**BOARD OF SUPERVISORS
BUSINESS MEETING
ACTION ITEM**

SUBJECT: **Finance/Government Operations and Economic Development Committee: Response to Board Member Initiative – County Environmental Initiatives Review**

ELECTION DISTRICT: Countywide

CRITICAL ACTION DATE: At the pleasure of the Board

STAFF CONTACTS: Dennis Cumbie, General Services
Ernest N. Brown, General Services

PURPOSE: As recommended by the Finance/Government Operations and Economic Development Committee (FGOEDC), this item presents the Board of Supervisors (Board) with the information requested in the April 21, 2020 Board Member Initiative (BMI) including a comprehensive history of environmental initiatives, and an analysis of current environmental programs and initiatives related to water quality, energy and solid waste. This item also provides staff recommendations that include: expansion of C-PACE eligibility to the fullest extent allowed by the Code of Virginia; review of Power Purchase Agreement (PPA) potential; continued review of County fleet and alternative fuels; and the creation of an Environmental Advisory Council.

RECOMMENDATIONS: At the FGOEDC meeting on November 10, 2020, the FGOEDC recommended that the response to the BMI initially requested to be brought to the FGOEDC as an information item, be forwarded to the Board of Supervisors (Board) as an action item with the included staff considerations presented as actionable recommendations.

Staff concurs with the FGOEDC recommendation.

BACKGROUND: At their April 21, 2020, Business Meeting¹, the Board directed (9-0) staff to prepare an information item for the FGOEDC that reviews current and past environmental initiatives, strategies, and actions as referenced in the April 21, 2020, item and provide recommendations. Staff provided the FGOEDC with the requested information at the November 10, 2020 meeting, and the FGOEDC directed staff (5-0) to forward the information to the Board in December, 2020, and to bring the staff recommendations forward as actionable items.

¹ [Item 9 BMI-County Environmental Initiatives Review to Recognize Earth Day.](#)

HISTORIC REVIEW OF ENVIRONMENTAL INITIATIVES:

As directed by the Board, staff has compiled a historic review of environmentally oriented strategies, policies, actions and regulations as provided in Attachment 1. The document highlights some of the responses to passage of federal laws and regulations, and how those laws and regulations have been expressed through state and local strategies and actions.

Local jurisdictions in Virginia generally only have those powers provided under enabling legislation adopted by the Virginia General Assembly. For environmental regulations, state enabling legislation has historically followed a pattern where federal regulations are passed on to the state for enforcement and implementation. In many cases, the state will then provide enabling legislation to authorize local jurisdictions to enact local policies or ordinances that, in some instances, may be even more restrictive than the federal or state regulations.

Federal and State Environmental Regulations

Federal policies and regulations related to environmental protection were minimal until the mid-20th century, with most environmental protections occurring at the state or local level. For example, regulations regarding discharges of pollution into Virginia waters have existed in various forms since the late 1800's and were mostly enforced by the State Board of Health. In 1948, Congress passed the Federal Water Pollution and Control Act (FWPCA). This federal action did not pass on authority or responsibility of environmental protections to the States, although it did provide federal assistance to States in upgrading some treatment facilities that discharged into surface waters.

In 1946, Virginia established the State Water Control Board (SWCB) as an umbrella agency for water pollution efforts in the Commonwealth. Over time, the SWCB has evolved to have oversight of most issues involving water supply, water quality, stormwater and groundwater.

Stormwater control at both the federal and state level was largely unregulated until passage of the 1968 Federal Flood Insurance Act. In order for communities to participate in the associated Flood Insurance Program, they were required to enact regulations controlling development in floodplains and floodways. From roughly the 1960's through the 1980's, stormwater control measures involved getting stormwater away from structures and into the streams and drainageways as quickly as possible. State erosion and sediment control regulations, along with stormwater quality standards would come later in 1972, when the Federal Clean Water Act (CWA) was passed as a reorganization and expansion of the FWPCA.

The Air Pollution Control Act of 1955 was the first federal legislation involving air pollution and provided funds for federal research of air pollution. The Clean Air Act of 1963 (1963 CAA) was the first federal legislation regarding air pollution control. It established a federal program within the U.S. Public Health Service and authorized research into techniques for monitoring and controlling air pollution. In 1967, the Air Quality Act (ACA) expanded federal government activities. Enforcement proceedings were initiated in areas subject to interstate air pollution transport. The federal government for the first time conducted extensive ambient monitoring studies and stationary source inspections.

The Clean Air Act of 1970 (1970 CAA) authorized the development of comprehensive federal and state regulations to limit emissions from both stationary (industrial) sources and mobile sources.

The 1990 Clean Air Act Amendments (CAAA) substantially increased the authority and responsibility of the federal government. New regulatory programs were authorized for control of acid deposition (acid rain) and for the issuance of stationary source operating permits.

At the state level, the Virginia Air Pollution Control Board (established in 1966) is authorized to study, monitor, and make regulations for the control and abatement of air pollution throughout the Commonwealth or in affected areas.

Local Programs, Policies and Initiatives.

Locally, the first documented policies related to environmental protection in Loudoun County are found in the 1956 “**Plan of Land Use-1980.**” Although not actually ratified until 1964, the Plan of Land Use-1980 contains general descriptions of existing environmental conditions, including soils, rainfall, groundwater and surface water resources. Environmental elements within the Plan of Land Use-1980 include:

- a) Policies in regard to Floodplains, such as mapping the flood plains of the Potomac River and major tributaries based on presence of alluvial soils, proposals that those areas be kept clear of encroachments, and recommendations for uses such as forestry, grazing or recreation;
- b) A Parks and Recreation plan proposed a regional park of 1,000 to 1,500 acres to be located along Goose Creek from its mouth along the Potomac River upstream to where Goose Creek and Little River are crossed by Route 15; and
- c) A proposal conserving areas based on two soil types: (i) those lands too steep and stony for agricultural activity, and (ii) those areas of poor soils that are relatively impervious or have high water tables. The Plan of Land Use-1980 recommended that future zoning restrictions be placed on these conservation areas and listed some of the recommended restrictions.

Other environmental elements were included in the **1969 Comprehensive Plan**, which suggested that the County conduct a special study of the Broad Run Watershed, to include the effect of development on erosion, siltation and flooding, and that studies of other major or minor watersheds should occur regularly prior to intensive development.

The **1979 Resource Management Plan (RMP)** provided an inventory and analysis of the County’s natural and cultural resources, goals, and regional trends. The RMP established an Environmental Conservation Plan, which identified areas where development should not occur and other less critical areas where limited development is allowed, subject to performance standards.

Other area specific plans were adopted following the RMP up to and following the adoption of the **Choices and Changes: Loudoun County General Plan** (Choices and Changes Plan) in 1991. The Choices and Changes Plan organized natural and cultural resources into groups to address growth pressure and its effects on the environment. Groups included: Water-Related Resources, Geological Features, Vegetation and Wildlife Habitats, Cultural and Scenic Resources, and Environmental Noise and Air Quality. **Greenways and Trails Policies** were developed in 1994 to help protect and connect various natural, recreational, and cultural resources.

The **2001 Revised General Plan (RGP)** retained the grouping of elements established in the Choices and Changes Plan while also developing a Green Infrastructure strategy for the

conservation, preservation, and restoration of these elements. The RGP also identified a conservation design process to allow for the conservation of natural, environmental, and heritage resources while also providing for full development of a site. The **2019 General Plan** (2019 GP) similarly identified policies, strategies, and actions for protecting and enhancing the County's natural, environmental, and heritage resources. The 2019 GP continues many of the same goals as the RGP with a greater emphasis on water quality, ridgeline protections and tree preservation and includes a new section on sustainability. Many of the implementation steps in the 2019 GP are anticipated to be incorporated into ZOAM 2020-0001, Zoning Ordinance Rewrite.

Environmental protection zoning regulations were adopted as additions to the **1972 Zoning Ordinance** as environmental overlay districts:

- a) **Floodplain Overlay District** – Adopted in January 1981 (as Flood Hazard District (FHD)), and amended in 1988, to regulate and restrict land use in areas within the County which are subject to severe periodic flooding.
- b) **Mountainside Development Overlay District** – Adopted in December 1987, and amended in 1989, to regulate land use and development on the mountainsides of the County. Defined as those portions of the Blue Ridge and Short Hill Mountains above 700 feet mean sea level; and those portions of the Catoctin, Hogback and Bull Run Mountains above 550 feet mean sea level.

Several 1972 CWA elements have led to state authorization of local water related regulations, such as the 1975 adoption of the Erosion and Sediment Control ordinance (Chapter 1220 of the Codified Ordinances of Loudoun County (Codified Ordinances)). The Erosion and Sediment Control ordinance requires land disturbing activities to minimize the impact of erosion in compliance with the Virginia Erosion and Sediment Control Law (VESC).

Stormwater management was concurrently addressed at the County level through review of plans submitted as required by the Subdivision Ordinance (first adopted in 1948) to ensure that site drainage would not conflict with existing or off-site drainage. Most stormwater infrastructure installed prior to the 1990's was designed primarily for water quantity control. With the 1984 revisions to the Land Subdivision and Development Ordinance (LSDO) and adoption of the Facility Standards Manual (FSM), the County began recording easements on private property where stormwater infrastructure was installed. The FSM also included stormwater design standards that reflected quantity control measures.

In the early 1990's, the U.S. Environmental Protection Agency (EPA) issued its Phase I National Pollutant Discharge Elimination System (NPDES) stormwater discharge permits to many of the larger jurisdictions in Virginia (Loudoun not included). In 1999, Loudoun County was included in the Phase II NPDES General Permit requirements for small Municipal Separate Storm Sewer Systems (MS4). Locally, FSM amendments were made effective in July of 2002 that added water quality standards in compliance with the 1999 Virginia Stormwater Management Handbook. In order to meet the March 2003 MS4 permit compliance deadline, the Board approved the creation of the Loudoun County Stormwater Management Program in December 2002. As an MS4 permittee, the County approach towards stormwater management was changed to include water quality in addition to water quantity. Chapter 1096 of the Codified Ordinances (Stormwater

Management) was adopted by the Board in October 2003 and was followed by necessary amendments to the FSM.

The **1993 Zoning Ordinance** was adopted to replace the **1972 Zoning Ordinance**, and over a period of time was amended to include several new environmental overlays:

- a) **Quarry Notification (QN) Overlay District** – This district was established to acknowledge the unique land use impact of a quarry on neighboring land uses and the need to notify the owners of the presence of a neighboring quarry.
- b) **Airport Impact (AI) Overlay District** – This district was established to acknowledge the unique land use impacts of airports, regulate the siting of noise sensitive uses, ensure that the heights of structures are compatible with airport operations, and complement Federal Aviation Administration regulations regarding noise and height.
- c) **Scenic Creek Valley Buffer**. Established to govern the construction of buildings, structures, parking, and other impervious surfaces in areas adjacent to scenic rivers and all waterways draining greater than 640 acres, by providing for a setback area from the channel scar line in which construction of improvements would not occur.

The 1993 Zoning Ordinance also included development standards for noise and Steep Slopes. In 2003, the **Limestone Overlay District (LOD)** was adopted as an amendment to regulate land use and development in areas underlain by limestone and in areas with karst² features and karst terrain. The LOD was later rescinded, and in 2010, a new LOD was readopted. In 2017, amendments were made to the **Floodplain Overlay District**, as mandated by Federal Emergency Management Agency (FEMA), that were necessary to bring the ordinance into compliance with the county's programmatic obligations to the federal government so that the County could continue to be a participating community in the National Flood Insurance Program (NFIP).

The policies and regulations listed above do not represent a complete list of County initiated actions through the years. A more comprehensive and detailed chronicle of past actions can be found in Attachment 1.

REVIEW OF EXISTING ENVIRONMENTAL INITIATIVES:

Water Resources:

- **Stormwater Management Program** – (Chapter 1096 of the Codified Ordinances) The County is subject to Phase II of the Federal CWA's NPDES permit program. In Virginia, the NPDES permit program is administered by the Department of Environmental Quality (DEQ) as the Virginia Pollutant Discharge Elimination System (VPDES) program through the State Water Control Law and the Virginia Stormwater Management Program (VSMP) Regulations. The state's VPDES program results in issuance of permits for discharges of stormwater from Small Municipal Separate Storm Sewer Systems (MS4) and from Construction Activities. Compliance with the VPDES program requirements is shared by the Departments of Building and Development (B&D) and General Services (DGS), and met through multiple initiatives:

² Karst is an area of limestone terrane characterized by sinks, ravines, and underground streams.

- **Virginia Stormwater Management Program (VSMP)** (Section 1096.01 of the Codified Ordinances). Established to manage the quality and quantity of runoff resulting from land-disturbing activities, including standards and guidelines, technical materials, and requirements for plan review, inspection and enforcement, and long-term maintenance of the SWM system. *(Administered by B&D)*
- **Virginia Erosion and Sediment Control Program³ (VESCP)**– (Chapter 1220 of the Codified Ordinances) Issues land disturbance permits to ensure that measures are implemented to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources during construction, particularly due to erosion and sediment deposition. *(Administered by B&D)*
- **Maintenance of the Stormwater Management System** – (Section 1096.02 of the Codified Ordinances). Provides for the inspection, maintenance and repair of the County’s stormwater management system to its original design capability. *(Administered by DGS)*
- **MS4 Permit Compliance** – Loudoun County, as a municipal jurisdiction, is a permittee under the VPDES Phase II MS4 general permit. To meet MS4 general permit requirements, the County must track and report compliance with six Minimum Control Measures (MCMs) *(Administered by DGS)*:
 1. **Public Education and Outreach Plan.** Updated during each 5-year MS4 permit cycle, the PEOP is intended to identify the community involvement approach Loudoun County will use to promote methods to reduce the discharge of pollutants in stormwater runoff.
 2. **Public Involvement.** This MCM requires the County to provide opportunity for public input, and to allow public participation in water quality improvement activities.
 3. **Illicit Discharge Detection and Elimination (IDDE) Program** to detect and eliminate prohibited entry into the public storm drainage system of substances that are not stormwater.
 4. **Construction Site Stormwater Runoff Control.** This MCM is met through VESCP administration.
 5. **Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands.** This MCM is met through VSMP administration.
 6. **Pollution Prevention/Good Housekeeping for Municipal Operations.** This MCM requires identifying, reporting and maintaining pollutant discharge reduction practices on all facilities owned by the County.

The MS4 general permit also requires the County to meet special conditions, including development of Action Plans to meet pollutant reduction targets required

³ Erosion and Sediment Control and Stormwater Management are currently administered as separate programs. Pursuant to Virginia Stormwater Management Act amendments, the County will consolidate these programs into a single Virginia Erosion and Stormwater Management Program (VESMP).

by the Chesapeake Bay Total Maximum Daily Load (TMDL) and any Local TMDL located within the MS4 general permit's boundary.

- **Water Resources Monitoring Program** - This program was developed, in part, through a 2002 EPA Water Resource Management Program grant, and in cooperation with the United States Geological Survey (USGS) and DEQ. Ongoing efforts of the program, overseen by B&D, include monitoring precipitation, water quality and flow in streams, and groundwater levels within a network of 14 wells. B&D produces an Annual Report summarizing the data collected during the calendar year.
- **Loudoun County Soil and Water Conservation District (LCSWCD)** - Administers Virginia Cost Share Programs, such as Agricultural Cost Share (livestock exclusion stream fencing, forest buffer planting, and cover crops), urban cost share through the Virginia Conservation Assistance Program (VCAP), and Septic Pump Out rebate program.
- **Watershed Planning** – Both federal and state agencies recommend that watershed management plans be used as a planning tool by local governments to help meet the goals and requirements of managing the quantity and quality of their water resources. Following through on a recommendation from the Strategic Watershed Management Solutions (SWMS) project, the Comprehensive Watershed Management Plan (CWMP), funded by a grant from the EPA, was completed in 2008 and recommended nearly 90 watershed management tasks. The CWMP was the second major phase of watershed management planning by the County; the first being the SWMS project completed in 2006. Thus far, two local watershed plans have been completed by the County:
 1. The Upper Broad Run Watershed Management Plan (2014)
 2. The Western Hills Watershed Management Plan (2019)
- **Limestone Overlay District (LOD)** – Adopted in 2003, rescinded, then readopted in 2010, the provisions of Section 4-1900 of Revised 1993 Zoning Ordinance preserve and protect the unique geologic characteristics and the quality of the groundwater in its limestone area. A large area just east of the Catoclin Mountain range in the Rural Policy Area of Loudoun County is comprised of limestone and “Karst terrain” areas. The limestone geology of carbonate deposits in Karst terrain areas is dissolved over time by mildly acidic precipitation, creating fissures. The deposits are highly permeable, allowing surface water to pass through quickly to underlying aquifers and groundwater, and possibly to reappear elsewhere as springs. The terrain is also characterized by the presence of certain natural features, such as sinkholes and rock outcrops. Thus, development on Karst terrain has a direct correlation to the potential for ground surface collapse and the susceptibility of groundwater and surface water pollution, and spring contamination, posing serious risks to public health, safety and welfare. The limestone cannot support land development activity without performance standards and monitoring. The referenced regulations are intended to guide land use and development in areas underlain by limestone and in areas with Karst features and Karst terrain.

- **Mountainside Development Overlay District** – First adopted on June 16, 1993, the provisions of Section 4-1600 of the Revised 1993 Zoning Ordinance regulate land use and development on the mountainsides of Loudoun County in such a manner as to provide for low density residential development in remote areas, and to: 1) ensure mountainside development will not result in substantial damage to significant natural resource areas, wildlife habitats or native vegetation areas; 2) ensure that mountainside development is compatible with the slope of the land; 3) ensure proper design is utilized in grading and in the development of structures, roadways and drainage improvements; 4) ensure mountainside conditions are properly identified and incorporated into the planning process for subdivision and site development; 5) prevent erosion and minimize clearing and grading; 6) ensure that all development is compatible with the existing topography and soils conditions; and 7) implement the intent of the Comprehensive Plan.
- **My Backyard Program** - Virginia Cooperative Extension-Loudoun Master Gardeners Program designed to assist and guide residents with healthy soil, lawns, trees, shrubs, perennial flowers and more, with the ultimate goal of conserving and preserving our natural resources.
- **Northern VA Clean Water Partners Program.** Multi-jurisdictional agreement through Northern Virginia Regional Commission to provide community outreach regarding Stormwater best management practices. The County participates for partial fulfillment of MS4 Public Education MCM.
- **Strategic Watershed Management Solutions** - (December 2006) A diverse group of government agencies, stakeholders and watershed experts conducted a series of meetings to develop a shared vision for watershed management planning strategies for Loudoun County. Recommendations led to development of Comprehensive Watershed Management Plan (2008).

Energy and Conservation Initiatives:

- **Loudoun County Energy Strategy (CES)** - (2009) The CES was developed as a long-range roadmap (to the year 2040) to address energy consumption and environmental considerations in the County. The vision statement indicates that “Loudoun County will always have reliable and affordable energy, be energy efficient, and have reduced greenhouse gases.” Recommendations from the CES led to several Energy Efficiency projects, including;
 - Energy Star Benchmarking
 - Virginia Green Initiative (*formerly Green Business Challenge*)
 - Energy Efficiency and Conservation Block Grant Projects (*completed by 2012*)
 - Energy and Water Saving Audits
- **Green Building Guidelines** – The Department of Transportation and Capital Infrastructure (DTCI) applies the Green Building Guidelines Policy to County projects with a goal to attain a minimum of a Leadership in Energy and Environmental Design

(LEED) Silver Certification level of compliance; however, DTCI staff will evaluate and review individual projects for LEED attainability based on reasonable costs.

- **County Fleet Alternative Fuels** – The Fleet Management Division in DGS provides for the acquisition, equipping, licensing, assignment, maintenance, replacement and disposal of the County fleet. Fleet staff periodically review information regarding alternative fuel technologies and prices to determine if alternative fuel use is appropriate for the County fleet.
 - *Compressed Natural Gas (CNG)*. In 2015, 2017 and again in 2019, Fleet staff performed a study to determine cost-effectiveness of conversion to CNG for the bus fleet. Due to the high cost of CNG fueling infrastructure and the low cost of diesel, CNG conversion was not shown to provide a fiscal return on investment. DGS reviews the market conditions on a biannual basis to determine if a fiscal benefit becomes evident.
 - *Electric Vehicles*. Conversion to electric vehicles has not been attractive due to the high cost of available models and the lack of charging stations. Recent Fleet staff analysis has shown that fully electric vehicles (sedans) have higher initial costs and maintenance costs, and lower resale value than the current preferred fleet vehicles. Another factor is that approximately 70% of the County fleet is made up of emergency and public safety vehicles. Commercially available electric vehicles are not capable of supporting the high level of electronic devices needed for such vehicles.
 - *Hybrid Vehicles*. From 2002 to 2013, the County purchased 72 hybrid vehicles of various makes for the general fleet. Hybrid vehicle purchases were discontinued due to high maintenance costs, complaints about off-road capability and complaints about passenger transport issues due to lack of interior space. Like electric vehicles, hybrids also cannot be used as public safety vehicles since they cannot support necessary electronic devices.
 - *Hybrid Buses*. Recently, the County purchased 2 gasoline/electric hybrid buses for Parks, Recreation and Community Services (PRCS) that are enhancements to existing factory vehicle chassis. These buses differ slightly in that the gasoline engine can operate independently of the electric assist if that system were to fail or run out of charge. Other studies of this type of vehicle have shown significant savings over the life of the vehicle. Based on performance and cost effectiveness, this approach will continue as short route buses are replaced.
- **Commercial Property Assessed Clean Energy Program (C-PACE)** - Following passage of state enabling legislation, the Loudoun County C-PACE was established in 2019 to assist commercial property owners and developers with financing approved energy and water efficiency projects.
- **Energy Conservation Challenge** - County employee program to incentivize energy conservation in the workplace through random awards to employee participants.
- **Regional Energy and Environmental Initiatives with County participation:**

- LEAP Local Energy Alliance Program
- Solarize NOVA Program
- 2030 Regional Climate Energy Plan
- SolSmart Community Silver Designation (U.S. Department of Energy)

Solid Waste:

Code of Virginia, Section 10.1-1411 and the Virginia Regulations for Solid Waste Management Planning 9 VAC 20-130-10 require a Solid Waste Management Plan. This solid waste management plan (SWMP) provides an integrated strategy for the management of nonhazardous solid waste generated within the Loudoun County Solid Waste Management Planning District (LCSWMPD). The LCSWMPD is comprised of all unincorporated and incorporated areas within Loudoun County, including the Towns of Hamilton, Hillsboro, Leesburg, Lovettsville, Middleburg, Purcellville, and Round Hill.

The SWMP complies with the Code of Virginia (Section 10.1-1411) and the Virginia Regulations for Solid Waste Management Planning (9 VAC 20-130-10 et seq.), which give statutory authority and regulatory responsibility and accountability to local governments for planning for the handling of all types of nonhazardous solid waste.

The LCSWMPD adopted the following goals to ensure that the District's solid waste management needs are met:

- Establish a dynamic planning process and document that meets Virginia Statutory and Regulatory requirements, that fosters public participation, and that ensures that the District's solid waste management needs are met.
- Identify and foster mechanisms to ensure that adequate solid waste collection services are available throughout the District.
- Identify and provide for the availability of facilities to ensure that adequate options for solid waste disposal are available throughout the District.
- Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with Federal and State laws and regulations in a manner that protects public health, safety, and the environment.
- Develop and sustain a countywide program that will achieve or exceed the State's mandatory recycling rate.
- Provide safe recycling and disposal options for special wastes that may pose harm to the environment and/or to public health and safety.
- Develop an Implementation Plan that sets forth how the Objectives of the SWMP will be met.

Additional information on Solid Waste Management activities are found in Attachment 1.

Related Environmental Initiatives:

- **Water and Wastewater Program (2015)** - Designed to provide assistance to Loudoun County communities that may have inadequate water or wastewater availability. Although generally considered a public health initiative, environmental gains can be realized through elimination of substandard or failing on-site wastewater disposal systems.
- **The Agricultural and Forestal District (AFD) Program** - Established in 1979, as a means to "...conserve, protect and encourage the development and improvement of agricultural and forestal lands for the production of food and other agricultural and forestal products, and conserve and protect agricultural and forestal lands as valued natural and ecological resources which provide essential open spaces for clean air sheds, as well as for aesthetic purposes".
- **Conservation Easement Assistance Program.** Launched in 2019 to help landowners with the upfront costs of placing land under conservation easement. Landowners interested in placing their land under a conservation easement should contact a land trust which will apply to the Conservation Easement Assistance Program on behalf of the landowner. Funding for half of these costs (maximum \$15,000) for creating the conservation easement will be provided to land trusts working with qualifying County landowners.

Environmental Initiatives Regulated by the State:

Drinking Water Regulations

The Virginia Department of Health Office of Drinking Water (ODW) is the lead agency for enforcing the Virginia Public Water Supply Law and the federal Safe Drinking Water Act. All the public water supply systems in the County must adhere to ODW regulations. This includes the Loudoun Water central service system, which serves the suburban unincorporated portions of the County, Loudoun Water owned and operated community and non-community systems, privately owned community systems, and the municipal water systems serving the incorporated Towns (Leesburg, Purcellville, Hamilton, Round Hill, Middleburg, Lovettsville, and Hillsboro).

Individual on-site water wells and non-community wells (wells with fewer than 25 consumers) are permitted and regulated by the Environmental Health Services Division of the County Health Department.

Surface Water Quality

DEQ is responsible for carrying out the mandates of the State Water Control Law and meeting the requirements of the federal Clean Water Act. DEQ administers state laws and regulations to improve and protect Virginia's streams, rivers, bays, wetlands and ground water for aquatic life, human health and other beneficial water uses. Part of DEQ's surface water quality responsibilities is administration of the VPDES program which drives MS4 permitting. DEQ permitting also includes discharges of wastewater treatment facilities into surface waters.

DEQ water supply programs mandate that every five years, comprehensive regional water supply planning will take place. In Loudoun, the Northern Virginia Regional Commission leads the

regional effort, while Loudoun Water staff, with County staff and municipal systems staff support, provide data specific to County water supply usage and needs.

Air Quality

The DEQ Air Division is responsible for carrying out the mandates of the Virginia Air Pollution Control Law, as well as meeting Virginia's federal obligations under the Clean Air Act. The Air Division's programs protect and enhance public health and the environment by controlling present and future sources of air pollution. The Air Division ensures the safety and quality of the air in Virginia by monitoring and analyzing air quality data, regulating sources of air pollution, and working with local, state and federal agencies to plan and implement strategies to protect Virginia's air quality.

Regionally, the Metropolitan Washington Council of Governments (COG) Metropolitan Washington Air Quality Committee (MWAQC) is the entity certified by the mayor of the District of Columbia and the governors of Maryland and Virginia to prepare an air quality plan for the DC-MD-VA Metropolitan Statistical Area under Section 174 of the federal Clean Air Act Amendments of 1990. MWAQC members include elected officials of COG member jurisdictions, the air management and transportation directors of the District of Columbia, Maryland, and Virginia, members of the Maryland and Virginia General Assemblies, and the chair of the Transportation Planning Board. The MWAQC coordinates air quality planning activities among COG, other external committees, and the Transportation Planning Board; reviews policies; resolves policy differences; and supports regional air quality planning.

The region has not attained the National Ambient Air Quality Standard (NAAQS) for ozone. The MWAQC supports implementation of the Regional Air Quality Action Plan designed to address the current NAAQS, as well as to achieve reductions in air pollutant emissions through a broad range of cost-effective control measures across multiple sectors.

Implementation of Environmental Policies and Activities

Previous Review of Organizational Structure

Within the past twelve years, staff has completed two reviews of the status of existing environmental programs, policies and initiatives; the **2008 Environmental Policy and Program Review**, and the **2014 Environmental Programs Strategic Plan** initiative that specifically addressed the organizational structure.

Below is a summary of those two previous efforts.

- **Loudoun County Environmental Policy and Program Assessment** (June 10, 2008 Transportation and Land Use Committee (TLUC)) Prepared by the Department of Planning at the request of the County Administrator to provide an assessment of the County's environmental policies and programs for the next Board term and any future strategic planning. The Loudoun County Environmental Policy and Program Assessment document provided the Board with a list of potential actions that could be taken as part of its strategic planning efforts, such as consideration of pursuing new grant and recognition opportunities (awards) to reinforce current efforts, as well as pursuing some of the other initiatives

recommended in the Assessment. Those initiatives included reviewing and amending County codes, ordinances and regulations where they are inconsistent with the Green Infrastructure policies of the Revised General Plan, including reinstating “Conservation Design” and the environmental overlay districts into the Revised 1993 Loudoun County Zoning Ordinance and revising the requirements of the FSM.

- **Loudoun County Environmental Programs Strategic Plan (2014)** Appointed by the Deputy County Administrator, the Environmental Programs Strategic Plan Steering Committee and staff were directed to prepare an assessment of the organizational structure of environmental programs in the County to determine if a change in structure would improve communications, provide a common vision for environmental programs, provide a coordinated approach to administer programs and initiatives, and establish more uniform environmental policies. Among the assessment’s recommendations were several actions that would provide some level of departmental reorganization. Actions taken because of the assessment included some hardline shifts in responsibilities for implementation of certain ordinances, but no significant changes to the County’s organizational structure.

There are many programs, policies and initiatives at the County level that may have input from multiple departments or other agencies. Table 1 is a matrix updated from the 2014 Environmental Strategic Planning report showing many of those tasks directly related to environmental initiatives, along with the shared responsibility for implementation. Included within the table is identification of those programs, policies and initiatives that are mandatory. In this table, some of the listed items may be mandated to be performed by state or regional entities but are not considered mandated if they are not required to be performed at the County level.

Table 1. Matrix of Environmental Activities

		Department/Agency														
Program	Program Detail	Mandated Activity	Building & Development	County Administration	Family Services	Fire and Rescue	General Services	OMAGI	PRCS	Planning & Zoning	Public Affairs	DTCI	Loudoun Water	Environmental Health	Loudoun Extension	Loudoun SWCD
Air Quality	Air Quality	N				•	•			•	•	•		•		
Drinking Water	Municipal Water Systems	Y								•	•		•	•		
Drinking Water	Private Water Wells	Y	•				•	•			•			•	•	
Drinking Water	Source Water Protection	Y								•	•		•	•		
Education & Outreach	Education & Outreach	Y	•	•	•	•	•	•	•	•	•	•	•	•	•	•
Energy	C-PACE	N		•			•									
Energy	Green Building Design	N	•									•				
Energy	Facility Management	N	•		•		•				•					
Hazards	Hazard Response	Y				•	•	•			•				•	
Floodplain	Floodplain Mgmt. Program	Y	•					•		•	•					
Forestry	Urban Forestry/Buffers	N	•					•		•	•					•
Groundwater	Quality/ Quantity	Y	•				•	•		•	•		•	•		
Heritage Preservation	Historic Resources	N	•							•						
Policy	Land Use Planning	N	•					•		•	•	•				
Soils	Soil Mapping	N	•					•		•						
Solid Waste	Illicit Dumping	N					•			•						
Solid Waste	Waste Disposal/Recycling	Y					•	•	•	•	•				•	
Stormwater	Compliance/Maintenance	Y					•				•					
Stormwater	Pre-Construction /E&SC	Y	•				•				•	•				•
Surface Water	Stream Monitoring	N	•								•		•			
Surface Water	TMDL Implementation	Y	•				•				•			•		•
Wastewater	Wastewater Disposal	Y					•			•	•		•	•		

ISSUES:

Water Quality:

- Current initiatives are mostly driven by state and federal regulations (MS4, VSMP, Erosion and Sediment Control, Water Supply Planning, etc.) and are therefore subject to rigid administrative requirements. There is limited ability to adopt more stringent requirements, or to encourage innovative Best Management Practices (BMPs) that do not have state or federal approval.
- Past initiatives related to Comprehensive Watershed Management Planning and Water Resources Monitoring were supported through federal grants, and not mandated by federal or state regulations. Those federal funding sources are now more difficult to obtain, and staff positions required to manage grants are unavailable.
- Current Watershed Management Planning efforts have been initiated by the Water Resources Technical Advisory Committee (WRTAC). From the release of the CWMP in 2008, the WRTAC efforts were mostly tied to review and recommendations on a subset of 15 priority recommendations from the CWMP that were incorporated into a Board approved work plan. Since completion of the work plan in 2015, the WRTAC, with Board direction, has completed Watershed Management Plans for two of the County's ten sub-watersheds, but currently has no direction to continue further efforts and only meets on an "as needed" basis.
- Although the Stormwater Management Ordinance (Chapter 1096 of the Codified Ordinances) covers the entire County (excluding Dulles Airport, the Dulles Greenway and the incorporated Towns), the Loudoun MS4 permit boundary only covers the County's urbanized areas as defined by the U.S. Census, and excludes any properties that are currently subject to other VPDES permits. Projects initiated to assist with meeting MS4 permit Chesapeake Bay TMDL Action Plan pollutant reduction goals outside the Loudoun MS4 permit boundary may not receive full credit for that project's reduction efficiency. Therefore, it is less likely that such projects will be initiated in the rural areas of the County, as this decreases the cost effectiveness of nutrient reduction projects.

Loudoun County Energy Strategy:

As described in this item and in Attachment 1, the 2009 CES was developed as a long-range roadmap (to the year 2040) to address energy consumption and environmental considerations in the County. The vision statement indicates that "Loudoun County will always have reliable and affordable energy, be energy efficient, and have reduced greenhouse gases." Several project recommendations from the CES were completed using funds from the Department of Energy's Energy Efficiency and Conservation Block Grant (EECBG) program. Since the EECBG funding ended in 2012, staff has implemented components of the CES as existing resources have allowed.

The CES also included the following goals:

- 1) *Loudoun County will be recognized as a location of choice for investment in part because of its innovative energy strategy.*

- 2) *Loudoun County will strive to have consistently lower energy costs relative to surrounding areas.*
- 3) *Loudoun County will have greenhouse gas emissions among the lowest in the country.*
- 4) *Loudoun County will be recognized as a regional, state, and national role model of effective energy and climate management.*
- 5) *All major investments will visibly contribute to meeting the CES goals.*

The long range CES goals are macro in nature and encompass the entire County and are not just specific to County government operations. Although the CES contains action items that could be implemented to support the goals, metrics to measure progress towards the goals were not established. Staff presented the FGOEDC with a best attempt at measuring that progress at the November 13, 2018, meeting⁴. The FGOEDC acknowledged that the CES had not been updated since 2009, and that such a revision or editing of the CES goals should be initiated by the Board. In addition, the 2019 GP calls for the CES to be updated and implemented (*2019 GP, Chapter 3, SUS Action 8.1.A*).

Stakeholder Input on Environmental Matters:

The County currently has limited avenues for regular input on environmental matters. Existing Board appointed citizen committees chartered to provide input on such matters are the Agricultural District Advisory Committee (ADAC); the Parks, Recreation and Open Space (PROS) Board; the Facilities Standards Manual Public Review Committee (FSMPRC); the Goose Creek Scenic River (GSR) Advisory Board; the Catocin Creek Scenic River (CCSR) Advisory Board; and the WRTAC.

Agricultural District Advisory Committee - The ADAC advises the Planning Commission and the Board and assists in creating, reviewing, modifying, renewing or terminating Agricultural and Forestal Districts (AFDs) within the County. In particular, the ADAC shall render expert advice as to the nature of farming and forestry and agricultural and forestal resources within the AFDs and their relation to the entire County. Inclusion into AFDs often comes with expectations of meeting certain practices that are consistent with protection of water quality and other natural resources. However, the ADAC review activities are limited only to AFDs, and do not provide expert advice on other County matters.

Parks, Recreation and Open Space Board - One of the stated purposes of the PROS Board is to serve in an advisory capacity to the Board of Supervisors in recommending policies and procedures relating to focusing public attention upon the need for adequate provisions for open space and year-round, healthful recreation for all which also protect the environment and historic resources. This function is one of many purposes of the PROS Board, which provides information and details of activities through an annual report to the Board of Supervisors. While there is an inherent environmental component to the activities of the PROS Board, most actions relate to the review and enhancement of recreational programs, and to assist with the procurement of park lands and facilities.

⁴ [November 13, 2018 FGOEDC Item #7, County Energy Strategy Update.](#)

Facilities Standards Manual (FSM) Public Review Committee (PRC) - The purpose of the PRC is to review and provide comments on the proposed amendments to the FSM prior to the public hearing process. The PRC is also responsible for hearing appeals of interpretations or decisions made by the Director of Building and Development in the administration of the FSM's standards and requirements and provides a written recommendation in regard to the appeal to the Director. Often, proposed FSM amendments relate to environmental development standards, and the PRC provides expert advice on those standards, and details potential impacts on the development community and County citizens.

Goose Creek Scenic River Advisory Committee (GCSRAC) and Catoctin Creek Scenic River Advisory Committee (CCSRAC) - The GCSRAC and CCSRAC are state-recognized and designated citizens' committees that advocate for riparian protections along Goose Creek and the scenic portion of the Catoctin Creek.

Water Resources Technical Advisory Committee (WRTAC) - The overall purpose of the WRTAC is to advise the Board on all matters related to water resources within the County. Specifically, the Board has adopted the following role and responsibilities for the WRTAC to:

- Provide a quality control function for the County's groundwater quality and quantity, surface water quality, quantity and habitat, watershed management, flood control management and stormwater management programs from both the local and regional perspective;
- Review and provide recommendations for work plan parameters, review collected data, and review program enhancements for the County's water resource programs;
- Provide the Board with reports of the WRTAC's findings and recommendations related to the County's water resource programs;
- Provide the Board input/recommendation for policy direction related to programs and associated issues; and
- Provide technical assistance to County staff.

In past years, input from the WRTAC has assisted the Board by providing guidance through development of the Water Resources Monitoring Program (WRMP), the Comprehensive Watershed Management Plan (CWMP), and development of a Work Plan for implementation of the priority recommendations from the CWMP. These efforts have resulted in several work products including the 2009 Countywide Stream Assessment, the Upper Broad Run Watershed Management Plan, and the Western Hills Watershed Management Plan. Since the completion of the approved Work Plan, the WRTAC has not been provided guidance from the Board for continuation of additional efforts.

Initially organized in 2001, the WRTAC met monthly and provided quarterly reports to the TLUC. At the January 3, 2017 Business Meeting, the Board directed (8-0-1: Saines absent) that the WRTAC charter be changed to eliminate the monthly meeting mandate in favor of meeting on an "as needed" basis.

RECOMMENDATIONS:

In April 2020 staff was directed to provide the FGOEDC with recommendations on further action. Staff has identified several actions below that, with Board direction, could be performed with existing resources. To go beyond the recommendations below, additional resources would be needed to perform the analysis required to make specific programmatic or policy changes related to many of the issues contained in this item. Should the Board wish to pursue actions other than those listed below, these requests could be forwarded to the FY 2022 budget deliberations for review and approval. At the Board's recent Strategic Planning retreat, four of the five items below were discussed: Environmental Policies of the 2019 General Plan, Expansion of C-PACE eligibility, Continued Review of County Fleet and Alternative Fuels and an Environmental Advisory Council.

1. *Environmental Policies of the 2019 GP.* Many of the implementation steps identified in the 2019 GP are currently being considered as part of ZOAM 2020-0001, Zoning Ordinance Rewrite. Board direction could also include updating the FSM and LSDO to implement the 2019 GP policies. The 2019 GP identifies several implementation steps involving environmental initiatives beyond updates to the Zoning Ordinance, FSM, and LSDO. Further analysis is needed to determine which of these initiatives can be completed with existing staff and resources and which would require reallocated or newly programmed resources. Implementation of this recommendation can proceed without further Board approval. A list of these implementation steps is provided in Attachment 1.
2. *Expansion of C-PACE Eligibility.* Currently, the Loudoun County C-PACE ordinance limits eligible projects to non-residential uses. However, the Virginia Code allows for C-PACE projects implemented on commercial and multi-family residential (>15 units) uses. State code also allows C-PACE funding not only for energy and water efficiency projects, but also for stormwater and resiliency projects. By making simple changes to Chapter 825 of the Codified Ordinances and to the C-PACE Program Guide, Loudoun's C-PACE program could be brought into full alignment with the state authorizing legislation.
3. *Review of Power Purchase Agreement Potential.* Power Purchase Agreements (PPAs) are financing tools that allow renewable energy developers (such as solar) to build, own and maintain projects, and then sell the power to customers, who are often tax-exempt entities such as local governments that cannot directly claim federal tax credits for renewable projects. Loudoun County Public Schools (LCPS) recently entered into a PPA that would allow a private company to build solar generation on school properties to be sold back to power the schools. Until the 2020 Virginia General Assembly session, a statewide cap on PPAs existed that limited the availability of such Agreements. The Virginia Clean Economy Act expanded the cap from 50 Megawatts (Mw) up to 2,000 Mw, greatly increasing PPA potential. Staff recommends further exploration of PPAs as a tool for both investing in off-site renewable energy projects, or for installation on appropriate County owned properties.

4. *Continued Review of County Fleet and Alternative Fuels.* While this type of evaluation is performed periodically, Fleet Management staff are continuously reviewing data regarding fuel costs, cost-of-service trends for various fueled vehicles, and end of life value of various vehicle types. Staff recommends that Fleet staff continue its practice of alternative fuels and potential changes to fleet vehicles.
5. *Creation of Environmental Advisory Council.* Staff recognizes that there are limitations on the existing framework for citizen input and review of the many environmental issues listed in this staff report, and in the April 2020 Board Member Initiative (BMI.) For example, if initiated by the Board, no appropriate advisory board exists that has the broad expertise required to adequately review an update or revision of the 2009 CES.

The April BMI specifically mentioned the Fairfax County Environmental Quality Advisory Council (EQAC) as an example of an advisory body with such broad expertise. The EQAC was established in September 1971 and advises the Fairfax County Board of Supervisors (Fairfax Board) on environmental matters in the County. The structure of the EQAC includes an annual public hearing where members of the public, whether private, commercial or non-profit, can speak before the EQAC on any environmental topic.

The EQAC advises the Fairfax Board through two methods, an Annual Report and a Resolution/Position Memorandum. The Annual Report details recommendations for the Fairfax Board to consider, provides a progress report on previous EQAC recommendations and initiatives, reports on the outcome of environmental legislation from the previous General Assembly Session, and includes a summary of environmental matters directly related to the Fairfax County school system. A more detailed review of the EQAC can be found in Attachment 2.

The most closely related Board appointed Citizen Advisory Committee in Loudoun is the WRTAC. As defined in its charter, the WRTAC is made up of citizens who have expertise in disciplines related to the protection of the County's water resources. While the WRTAC is well suited to advise the Board on watershed management issues, it would not be an appropriate use of the WRTAC to review non-water resources related topics such as energy conservation, renewable energy or air quality matters. WRTAC meetings are open to the public, but there is no formal means of public input such as the annual EQAC public hearing. The WRTAC is also bound to meet "as needed", and therefore will not meet unless there is a water resources issue of significance that requires its review. Staff recommends that a new Environmental Advisory Committee should be proposed for creation that will meet the above criteria.

The most important similarity between the EQAC and the WRTAC is that both groups are made up of individuals with varied expertise in related disciplines, and not merely a group of community stakeholders. This factor is important because it allows for consensus to be made based not upon desires of individual outcomes, but on thoughtful analysis of scientific and engineering principles.

FISCAL IMPACT: There is no anticipated fiscal impact associated with approval of the staff recommendations. If the Board directs staff to initiate work on any issues that may require additional resources, staff will come back during the FY 2022 proposed budget discussions with an estimate of resources and time required to complete those tasks.

ALTERNATIVES:

1. The Board may move the staff recommended motions below
2. The Board may move select staff recommended motions from the list below
3. The Board may move alternate motions
4. The Board can take no action.

DRAFT MOTIONS:

- 1a. I move that the Board of Supervisors direct staff to initiate the amendment of Chapter 825 of the Codified Ordinances of Loudoun (Commercial Property Assessed Clean Energy (C-PACE) Program) to expand eligible properties and projects to align with the full extent of Virginia's Clean Energy Financing Law. And;
- 1.b I further move that the Board of Supervisors direct staff to investigate the potential for executing Power Purchase Agreements as a tool for expanding use of renewable energy sources. And;
- 1.c. I further move that the Board of Supervisors direct the Department of General Services to continue review of the County fleet and alternative energy sources specifically Electric, Hybrid and natural gas options. And;
- 1.d. I further move that the Board of Supervisors direct staff to develop the framework for creation of an Environmental Advisory Council, and to provide an estimate of staff resources that may be required to create and support such a Council. And;
- 1.e. I further move that the Board of Supervisors direct staff to provide an estimate of resources needed to replace or update the County Energy Strategy (CES), including the cost of an outside consultant to manage the CES update process, and host a Board Workshop on potential CES outcomes to form the basis of the consultant's scope of work.

OR

2. I move an alternative motion.

ATTACHMENTS:

1. Historical and Existing Environmental Programs, Policies and Initiatives in Loudoun County
2. Program Review - Fairfax County Environmental Quality Advisory Council



November 10, 2020

HISTORICAL AND EXISTING ENVIRONMENTAL PROGRAMS, POLICIES AND INITIATIVES IN LOUDOUN COUNTY

PURPOSE:

The purpose of this document is to provide a history of environmental programs, policies and initiatives that have occurred or are in place. This document only provides an overview of each initiative, and is not intended to be a comprehensive record of activities, work products or environmental impact. Part II of this document provides a review of environmental programs, policies and initiatives currently being performed by County government or other agencies operating within the County.

PART I: History of Environmental Programs and Initiatives;

Historical Timeline of Planning and Policy Development:

1. **1942** – Planning Commission Created.
2. **1942** – Zoning Ordinance Adopted.
3. **1946** – Board of Zoning Appeals and Zoning Administrator established.
4. **1946** – **Virginia Water Control Board** established.
5. **1948** – Subdivision Ordinance Adopted.
6. **1956 – Plan of Land Use—1980.** Although not actually ratified until 1964, the plan contains general descriptions of existing environmental conditions, including soils, rainfall, groundwater and surface water resources. Under the section **Purpose of the Plan**, the document states “The County Master Plan...will tend...(2) To reduce the wastes of physical, financial or human resources which result from either excessive congestion or excessive scattering of population; and (3) Toward an efficient and economic utilization, conservation and production of the supply of food and water and of drainage, sanitary and other facilities and resources.”

Environmental Elements of the Plan:

- a) **Flood Plains** – The plan included a map depicting the flood plains of the Potomac and major tributaries based on presence of alluvial soils, and proposed that those areas be kept clear of encroachments, recommending uses such as forestry, grazing or recreation.
- b) **Parks and Recreation** – The plan proposed a regional park of 1000 to 1500 acres to be located along Goose Creek its flood plain and other points of

natural beauty from its mouth along the Potomac River upstream to where Goose Creek and Little River are crossed by Route 15.

- c) Conservation Areas - The plan proposed conserving areas based on two soil types, (i) those lands too steep and stony for agricultural activity, and (ii) those areas of poor soils that are relatively impervious or have high water tables. The plan recommended that future zoning restrictions be placed on these conservation areas and listed some of the recommended restrictions.

7. 1959 – Loudoun County Sanitation Authority (LCSA, now doing business as Loudoun Water) Created. Established as a state-chartered authority with the purpose of providing water and sewer service to the unincorporated areas of Loudoun County.

8. 1963 – Federal Clean Air Act. The first federal legislation regarding air pollution control. It established a federal program within the U.S. Public Health Service and authorized research into techniques for monitoring and controlling air pollution.

9. 1966 – Virginia Air Pollution Control Board. The Board is to develop a comprehensive program for the study, abatement, and control of all sources of air pollution in the state. Rules and regulations are to be adopted after a public hearing. The Board is authorized to grant local variances.

10. 1969 - Comprehensive Development Plan

This proposed plan included another detailed assessment of current environmental conditions including soils, watersheds and natural resources.

Recreation and Conservation: The plan included recommendations for additional Recreation areas to be set aside, specifically the area on Goose Creek between the Potomac River and the Route 7 crossing. The plan also recommended the continued conservation of stream valleys and mountainous areas that should be devoted to farming and forestry activities.

Watershed Studies: The plan also suggested that the County conduct a special study of the Broad Run Watershed, to include the effect of development on erosion, siltation and flooding. Recommendations of the study should include methods to control these problems and to save the stream valley for conservation purposes. The plan went on to suggest that studies of other major or minor watersheds should occur regularly prior to intensive development.

11. 1970 - The Clean Air Act of 1970 (CAA) authorized the development of comprehensive federal and state regulations to limit emissions from both stationary (industrial) sources and mobile sources. The 1990 Clean Air Act

Amendments (CAAA) substantially increased the authority and responsibility of the federal government. New regulatory programs were authorized for control of acid deposition (acid rain) and for the issuance of stationary source operating permits.

12. 1972 – Federal Clean Water Act (CWA). Enacted as reorganization and amendments to the 1948 Federal Water Pollution Control Act, the “Clean Water Act”, among other elements, created the National Pollution Discharge Elimination System (NPDES) which would form the basis for regulating both point source and non-point source water pollution by permitting discharges into the nation’s surface waters. Many states, including Virginia, were given primacy for enforcement of CWA regulations. In time, Virginia would enable local jurisdictions to enact regulations for some CWA components, such as Erosion and Sediment Control and Stormwater Management.

13. 1972 – Zoning Ordinance

Adopted in June, 1972, replacing the previous Zoning Ordinance adopted in 1959. Special Districts: Included two Zoning Overlay Districts with environmental protection impacts.¹

- a) Floodplain Overlay District – Adopted in January, 1981 (as Flood Hazard District (FHD)), amended in 1988, to regulate and restrict land use in areas within the County which are subject to severe periodic inundation.
- b) Mountainside Development Overlay District – Adopted in December, 1987, amended in 1989, to regulate land use and development on the mountainsides of the County. Defined as those portions of the Blue Ridge and Short Hill Mountains above 700 feet mean sea level; and those portions of the Catoctin, Hogback and Bull Run Mountains above 550 feet mean sea level.

14. 1975 – Chapter 1220 of the Codified Ordinances of Loudoun. Also known as the “Erosion and Sediment Control” ordinance, this requires land disturbing activities to minimize the impact of erosion by following guidelines set forth in the Virginia Erosion and Sediment Control Handbook in compliance with the Virginia Erosion and Sediment Control Law (VESCL) and the Virginia Erosion and Sediment Control Regulations (VESCR). Amended as required by state law in 1995, 2001, 2005, and 2017.

¹ Overlay districts are overlaid upon other districts and the land so encumbered may be used in a manner permitted in the underlying district only if and to the extent such use is also permitted in the overlay district.

15. 1976 – Chapter 1040 of the Codified Ordinances of Loudoun. Chapter 1040 defines permitting, construction standards, inspection and operation of water wells in the County. Amended in 1988 to establish more restrictive water well construction standards and reporting requirements.

16. 1979 – Resource Management Plan. The Resource Management Plan was developed as the first phase of the new Comprehensive Plan, and would continue as one of its elements. The plan was an inventory and analysis of the County's natural and cultural resources, goals and regional trends. The plan provided an **Environmental Conservation Plan** with environmentally sound policies and goals for several aspects of the County's resources worthy of either conserving or developing, including; Natural Resources, Agricultural Resources, Historical and Open Space Resources, Housing Resources, Employment and Economic Resources, Transportation Resources, Public Facilities and Utilities, and Fiscal Resources.

The Resource Management Plan also identified Environmentally Critical Resource Management Areas and Environmentally Sensitive Resource Management Areas where preservation and continued maintenance of these areas were designated as necessary. These areas included:

- a) soil with high percolation rates that could lead to pollution of groundwater through wastewater disposal,
- b) groundwater recharge areas,
- c) surface waters (creeks, streams, rivers),
- d) unique geographical areas whose topography and geological conditions trap air masses and pollutants with insufficient means to circulate and dilute,
- e) steep slopes,
- f) flood prone areas, and
- g) areas of air stagnation.

17. 1983 – The Chesapeake Bay Program. Created by a one-page agreement between three Bay States (Maryland, Virginia, and Pennsylvania), the District of Columbia and the U.S. Environmental Protection Agency recognizing that a cooperative approach was necessary to address the Bay's pollution problems. The 1987 Chesapeake Bay Agreement set the first numeric goals to reduce pollution and restore the Bay ecosystem. Among other goals, the agreement aimed to reduce nitrogen and phosphorus entering the Bay by 40 percent by 2000. A third agreement, the Chesapeake 2000 agreement refined those goals and added Delaware, New York, and West Virginia as Bay Program Partners.

18. 1984 – Title Four of the Codified Ordinances of Loudoun County adopted. Includes Chapters 1241, 1242, 1243, 1244, 1245 and 1246, updating the Land Subdivision and Development Ordinance (LSDO) and establishing the Facilities Standards Manual (FSM). The FSM has been updated many times through the years through a series of Development Ordinance Amendments (DOAMs) in order to provide development standards that reflect both regulatory and industry best practices. Environmental standards are found in:

- *Chapter 2: Water Supply and Distribution Systems*
- *Chapter 3: Waste Collection and Disposal Systems*
- *Chapter 5: Water Resource Management (includes stormwater)*
- *Chapter 6: Soils, Geotechnical, Geophysical and Hydrogeological Studies*
- *Chapter 7: Environmental Design Standards (includes lighting, tree conservation, stream restoration, and archaeological and historical preservation standards).*

19. 1984 – Chapter 1090 of the Codified Ordinances of Loudoun County. The purpose of this chapter is to provide the safe application of Class B biosolids on agricultural land by applying requirements designed to assure proper management, thereby minimizing associated problems, including health hazards, environmental degradation, and nuisance complaints. Included County oversight in the application of biosolids, including approval by the County Soil Scientist that all features that required a setback were correctly identified (steep slopes, rock outcrops, depth to bedrock, seasonal high water table, sinkholes, intermittent streams). Amended in 1988, and again in 1999 to reflect changes in State regulations.

20. 1986 – Amendments to the Federal Safe Drinking Water Act (SDWA). Along with additional amendments in 1988 and 1996, states were given greater authority to provide protections to surface and groundwater drinking water sources. Virginia soon began providing enabling legislation for localities to provide protections.

21. 1988 – Chesapeake Bay Preservation Act. Enacted by the Virginia General Assembly in 1988, the Bay Act program is designed to improve water quality in the Chesapeake Bay and other waters of the State by requiring the use of effective land management and land use planning. Although Loudoun was not included in the Bay Act, it is significant to the state in that it was the first regulatory attempt to place numerical limits on non-point source pollution, such as stormwater and agricultural runoff.

22. 1988 – Chapter 1245.10 Amendment. Chapter is modified to allow the County Health Director to require hydrogeologic testing for subdivisions to be served by

onsite well water systems to ensure that the groundwater resources are able to meet the quantity and quality needs of the subdivision as designed. Changes made to FSM to reflect modifications.

- 23. 1991 – Chapter 1080 of the Codified Ordinance of Loudoun.** Restricts the disposal of solid waste to only facilities as permitted by this ordinance, including prohibitions on open dumps, burning solid waste, and acceptance of infectious solid waste at any facility.
- 24. 1991 Choices and Changes: Loudoun County Plan.** Grouped natural, environmental, and heritage resources into categories that shared common elements, emphasizing the relationships among them. **1994 – Greenways and Trails Policies.** Protects and connects various natural, recreational, and cultural resources.
- 25. 1992 - Chapter 1084 “Solid Waste Collection and Transportation”.** This chapter regulates the local refuse collection and hauling business, requires curbside collection of source separated recyclable materials and prohibits their disposal except at a recycling facility or approved facility for ultimate disposition as a recycled material. Chapter 1084 repealed and re-enacted in its entirety in 2002.
- 26. 1992 - Chapter 1086 “Solid Waste Reduction and Recycling”.** This chapter contains provisions for residential and commercial recycling which require the source separation of specific recyclable materials and prohibits their willful disposal as solid waste. Chapter 1086 repealed and re-enacted in its entirety in 2002.
- 27. 1993 Zoning Ordinance/Revised 1993 Zoning Ordinance (2003)**

Special Districts: Retained the two existing Environmental Zoning Overlay Districts, with addition of three Overlay Districts, and additional requirements for development in areas of steep slopes. Below is a brief history of the overlay districts and special requirements adopted as amendments to the 1993 Zoning Ordinance:

1998 – Quarry Notification Overlay District (QN) adopted.

2003 – ZOAM-2002-0003 and ZMAP-2002-0014 – Mountainside Development Overlay District (MDOD), River and Stream Corridor Overlay District (RSCOD), Limestone Overlay District (LOD), steep slopes, conversation design.

- MDOD included ridgeline standards, clarified “minimization of land disturbing activity” changed SPEX to only subdivisions and LDAs in MDOD, not engineering performance standards for highly sensitive

- LOD similar in substance to today's version
- Steep Slopes shifted in definition from the soil mapping unit to topographic contour data
- Conservation design provided a review mechanism during the land development process to ensure growth in the County considered various natural and cultural resources such as steep slopes, streams, wetlands, riparian buffers, viewsheds, prime agricultural soils, etc.

2004 – Circuit Court of Loudoun County overturns the environmental overlay districts established by ZOAM-2002-0003 due to insufficient notification.

- As a result, the environmental overlays established or revised by ZOAM-2002-0003, were removed.
- Limestone Overlay District and River and Stream Corridor Overlay District were removed.
- Mountainside Development Overlay District reverts back to previous version.

2005 – Virginia Supreme Court rules that all conservation design policies should be removed from the Revised 1993 Zoning Ordinance.

- As a result, the Board of Supervisors voted (April 19, 2005) to suspend staff review of legislative applications for compliance with Conservation Design.

With additional amendments, the current Revised 1993 Zoning Ordinance contains the following environmental Overlay Districts and requirements;

- ***Mountainside Development Overlay District (MDOD)***. Created to regulate land use and development on the mountainsides of the County, in such a manner as to provide for low density residential development in remote areas and to: (1) assure mountainside development will not result in substantial damage to significant natural resource areas, wildlife habitats or native vegetation areas; (2) assure that mountainside development is compatible with the slope of the land; (3) assure proper design is utilized in grading and in the development of structures, roadways and drainage improvements; (4) assure mountainside conditions are properly identified and incorporated into the planning process for subdivision and site development; (5) prevent erosion and minimize clearing and grading; (6) ensure that all development is compatible with the existing topography and soils conditions; and (7) implement the intent of the Comprehensive Plan.

- ***Limestone Overlay District (LOD) (2010)***. New LOD established, intended to regulate land use and development in areas underlain by limestone and in areas with Karst features and Karst terrain in such a manner as to: (A) Protect the health, safety and welfare of the public; (B) Protect groundwater and surface water resources from contamination; and (C) Reduce potential for property damage resulting from subsidence or other earth movement.
- ***Floodplain Overlay District (FOD) (revised 2017)***. The purpose of these provisions is to conserve the natural state of watercourses and watersheds and to prevent: the loss of life and property, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base. The 2017 revisions were mandated by Federal Emergency Management Agency (FEMA) in order for the County to continue to be a participating community in the National Flood Insurance Program (NFIP) and necessary to bring the ordinance into compliance with the county's programmatic obligations to the federal government.
- ***Quarry Notification (QN) Overlay District***. This district is established to acknowledge the unique land use impact of a quarry on neighboring land uses and the need to notify landowners of the presence of a neighboring quarry.
- ***Airport Impact (AI) Overlay District***. This district is established to acknowledge the unique land use impacts of airports, regulate the siting of noise sensitive uses, ensure that the heights of structures are compatible with airport operations, and complement Federal Aviation Administration regulations regarding noise and height.
- ***Scenic Creek Valley Buffer***. Established to govern the construction of buildings, structures, parking, and other impervious surfaces in areas adjacent to scenic rivers and all waterways draining greater than 640 acres, by providing for a setback area from the channel scar line in which construction of improvements would not occur
- ***Noise Standards***. To protect citizens from excessive sound (noise), which is detrimental to the health and peaceful enjoyment of property.
- ***Steep Slopes Standards***. Provisions include a general prohibition of land disturbing activities on naturally occurring very steep slope areas greater than 25% grade and performance standards for development on steep slope areas with grades of 15% to 25%.

- 28. 1994 – Chapter 1066 of the Codified Ordinances of Loudoun.** Adopted to implement the regulations of the State Board of Health regarding the permitting, construction, and inspection of private onsite sewage treatment systems.
- 29. 1994 –** Virginia Department of Health receives primary authority for regulating the land application of biosolids. Loudoun’s Chapter 1090 of the Codified Ordinances is permitted to still be enforced and provide additional oversight to land application.
- 30. 1996 – Potomac Tributary Strategies.** Developed by the Potomac watershed states and the District of Columbia, this document was a plan for reaching the nutrient reduction goals called for in the Chesapeake 2000 agreement.
- 31. 1999 – Ad-Hoc Groundwater Advisory Committee (GAC).** In response to previous years’ drought, the Land Use Committee appointed the GAC to collect and analyze the necessary data to determine the appropriate action to address groundwater resource issues. The GAC action recommendations included;
- Updating the County’s hydrogeologic data files,
 - Investigate the major impacts of recent drought conditions,
 - Initiate a monitoring program to evaluate both ground and surface water resources,
 - Consider new groundwater policies to address quality, regional impact due to land use and well head protection, and
 - Explore available funding options to execute the planned actions.
- 32. 2001 Revised General Plan (RGP).** Retained the grouping of elements established in the Choices and Changes Plan while also developing a Green Infrastructure strategy for the conservation, preservation, and restoration of these elements. Also identified a conservation design process to allow for conservation of natural, environmental, and heritage resource elements while also providing for full development of a site.
- 33. 2001 – Water Resources Technical Advisory Committee (WRTAC).** In December of 2000, the Land Use Committee dissolved the GAC in favor of creation of the WRTAC to continue the work plan developed by the GAC. In January, 2001 the Board approved creation of the WRTAC to consist of nine Loudoun County citizens with particular expertise and interest in surface and groundwater watershed management.
- 34. 2002 -- Chapter 1096 of the Codified Ordinances of Loudoun County—**Adopted to provide local enforcement of the Virginia Stormwater Act regulations promulgated in 2001. Amended in 2008 to provide for compliance with Virginia Pollutant Discharge Elimination System (VPDES) Phase II General Permit for the

discharge of stormwater by small Municipal Separate Storm Sewer Systems (MS4). Amended in 2014 to establish Loudoun as a Virginia Stormwater Management Program (VSMP) Authority, as required in State Code.

- 35. 2007 – Predictive wetlands model published.** This was the outcome of a grant process to create a pre-development predictive model to help identify potential wetland areas to support the RGP policy at that time (Policy 23, p 5-11) supporting no net loss to wetlands in the County.
- 36. 2007 – Primary authority for regulating biosolids** is transferred from VDH to Virginia Department of Environmental Quality (DEQ) per the General Assembly. With the transfer of responsibility and related Code of Virginia changes, localities no longer have the ability to be more restrictive than the state in regulating the land application of biosolids. Enforcement of Chapter 1090 of the Codified Ordinances ceases, but staff continue to perform site visits by accompanying DEQ prior to some applications.
- 37. 2008 – Chapter 1067 of the Codified Ordinances of Loudoun.** Adopted to implement the regulations of the State Board of Health regarding the permitting, construction, and inspection of private onsite sewage treatment systems, with specific requirements related to alternative onsite sewage treatment systems. Amended in 2013.
- 38. 2009 – Chesapeake Bay Preservation Act, Local Adoption.** In April, 2009, the Board approved the Chesapeake Bay Preservation Act Work Plan for development of a Comprehensive Plan Amendment (CPAM-2009-0002), directing staff to draft policies related to the minimum requirements of the Chesapeake Bay Preservation Act (Bay Act) as defined in the Virginia Administrative Code as an implementation mechanism for current water-related Green Infrastructure policies. Ultimately, in May, 2011, the Board chose not to adopt CPAM-2009-0002, but instead directed staff to initiate local ordinance changes that would integrate several of the water-quality improvement strategies contained in the Bay Act;
 - October 2011, changes to Chapter 1066 requiring 5-year septic pump-outs
 - October 2011, changes to Chapter 1220 reducing the threshold requiring grading permits from 10,000 to 5,000 square feet, and increased the E&SC Alternative Inspection Program minimum frequency.
- 39. 2009 – County Energy Strategy.** The CES was developed as a long-range roadmap (to the year 2040) to address energy consumption and environmental considerations in the County. The vision statement indicates that “Loudoun County will always have reliable and affordable energy, be energy efficient, and have reduced greenhouse gases.” The CES was endorsed by the Board in

December of 2009, along with a list of proposed projects and initiatives that would be supported by Federal funding through the Dept of Energy, or with existing County resources. Those projects were completed, and the federal funding ended in 2012. The CES has not been updated to date.

40. 2010 – Chesapeake Bay TMDL. On December 29, 2010, the EPA established the Chesapeake Bay Total Maximum Daily Load (TMDL). The TMDL is a historic and comprehensive "pollution diet" to restore clean water in the Chesapeake Bay and the region's streams, creeks, and rivers. The TMDL – the largest ever developed by EPA – identifies the necessary pollution reductions of nitrogen, phosphorus and sediment across Delaware, Maryland, New York, Pennsylvania, Virginia, West Virginia and the District of Columbia and sets pollution limits necessary to meet applicable water quality standards in the Bay and its tidal rivers and embayment's.

41. 2012 – Chesapeake Bay TMDL Phase II Watershed Implementation Plan (WIP). In order to complete Virginia's Phase II WIP as required by the Bay TMDL, the Virginia Department of Conservation and Recreation (DCR) requested information from individual jurisdictions (Loudoun included) to develop scenarios and strategies that will help the state meet its required pollutant reduction goals. In 2012, the County established a Community Outreach Work Plan in an effort to find the most reasonable and cost-effective strategies for meeting the requirements of the WIP. A letter was sent from the County to the state in October 2013 describing the County's Phase II WIP work plan, significant findings of the work plan process, and the support needed from the state of Virginia and the federal government.

42. 2019 General Plan (2019 GP)

- Chapter 3 – Natural, Environmental, and Heritage Resources – Chapter 3 of the 2019 GP identifies policies, strategies, and actions for protecting and enhancing the County's natural, environmental, and heritage resources. Many of these policies, strategies, and actions were adapted from the 2001 RGP. The 2019 GP continues to encourage the use of a design process to better protect and enhance the County's natural, environmental, and heritage resources and incorporate such features into site design. Greater emphasis on water quality, ridgeline protections, and tree preservation have been included in the 2019 GP. Additionally, a new section on Sustainability has been added to the 2019 GP. Topic areas include the following:
 - i. Water Resources
 1. Impaired Streams
 2. Surface and Groundwater Resources

- ii. Geologic and Soil Resources
 - 1. Limestone
 - 2. Prime Agricultural Soils
 - 3. Mountainside and Steep Slopes
 - iii. Forests, Trees, Vegetation
 - iv. Historic and Archaeological Resources
 - v. Cultural Landscapes
 - vi. Plant and Wildlife Habitats
 - vii. Complementary Elements
 - 1. Air Quality
 - 2. Aural Environment
 - 3. Lighting and the Night Sky
 - viii. Sustainability
- Many of the implementation steps in the 2019 GP are anticipated to be incorporated into ZOAM 2020-0001, Zoning Ordinance Rewrite. However, the 2019 GP identifies several implementation steps involving environmental initiatives beyond updates to the Zoning Ordinance, LSDO, and FSM. These implementation steps include:
 - i. Study and, if feasible, aid in the establishment of a public-private conservation partnership to facilitate communication, grants, easements, education, and partnership opportunities to conserve and protect natural, environmental, and heritage resources.
 - ii. River and Stream Corridor Resources:
 - 1. Develop and implement watershed management plans for those watersheds not already studied.
 - 2. Develop and use incentives to encourage property-owners to establish and maintain a minimum 100-foot riparian stream buffer within those areas outside of areas defined as the River and Stream Corridor (RSCR).
 - 3. Establish incentives and/or a funding program for reforestation, SWM/BMP projects, and SWM/BMP retrofits.
 - 4. Prepare and implement TMDL Action Plans, as necessary to meet TMDL requirements.
 - 5. Prepare and implement a Potomac River shoreline management plan.
 - 6. Develop a community-based Source Water Protection Plan in cooperation with Loudoun Water and other agencies and organizations.

7. Develop and implement a comprehensive groundwater protection strategy.
 8. Develop and implement a comprehensive pollution management program.
 9. Assess the recharge and consumption rates for groundwater in each watershed.
 10. Study best practices/guidelines to reduce impervious surfaces and minimize increases in post-development runoff peak rate, frequency, volume.
- iii. Soils and Geologic Resources:
1. Identify pollution sources and establish appropriate standards for reducing pollution in areas underlain by limestone.
 2. Develop a public education program that will focus on communicating advantages associated with private protection of Prime Agricultural Soils.
- iv. Forests, Trees, and Vegetation:
1. Develop and adopt a Tree Preservation Ordinance.
 2. Inventory and map trees and native vegetative resources to be preserved or managed in accordance with County standards and create and maintain a database of these resources.
 3. Develop Countywide goals and objectives for the creation, maintenance, and preservation of the County's tree canopy.
- v. Scenic Resources:
1. Prepare and implement corridor management plans, including identifying and defining viewsheds for the County's Scenic Rivers in order to protect their natural and scenic quality.
- vi. Natural Heritage Resources:
1. Identify essential wildlife corridors and encourage protection of these areas.
- vii. Air Quality:
1. Evaluate and implement methods to reduce emissions or airborne pollutants.
- viii. Sustainability:
1. Update and implement the CES.

2. Develop a Sustainability Plan that provides the framework to balance economic development, social well-being, and environmental health.
3. Research and support opportunities for micro-grid energy and district energy systems.
4. Prioritize public investment in energy efficient, clean products, and infrastructure.
5. Create partnerships with universities and private sector companies to foster growth of sustainable economy that supports workers and students in the advanced technology and science industries.
6. Establish incentives for sustainable development.
7. Become certified as a “solar-ready” community under the U.S. Department of Energy’s SolSmart program.

43. 2019 CTP

- Chapter 7 – Environmental and Heritage Resources – Specific policies addressing the protection of environmental and heritage resources from transportation-related impacts. Specific topic areas include the following:
 - i. Air Quality
 - ii. Water Quality
 - iii. Noise Exposure and
 - iv. Heritage Resources
- Chapter 2 – The Countywide Transportation Network includes the Bicycle and Pedestrian Plan (BPP).

PART II: Existing Environmental Programs

WATER RESOURCES:

- **Stormwater Management Program** – (Chapter 1096 of the Codified Ordinances) The County is subject to Phase II of the Federal Clean Water Act’s National Pollutant Discharge Elimination System (NPDES) permit program. In Virginia, the NPDES program is administered by the Department of Environmental Quality (DEQ) as the Virginia Pollutant Discharge Elimination System (VPDES) program through the State Water Control Law and the Virginia Stormwater Management Program (VSMP) Regulations. The program results in issuance of permits for discharges of stormwater from Small Municipal Separate Storm Sewer Systems (MS4) and from Construction Activities. Compliance with the VPDES program requirements is met through multiple initiatives:

- **Virginia Stormwater Management Program ²(VSMP)** - Established to manage the quality and quantity of runoff resulting from land-disturbing activities, including standards and guidelines, technical materials, and requirements for plan review, inspection and enforcement, and long-term maintenance of the SWM system.
- **Virginia Erosion and Sediment Control Program (VESCP)** - (Chapter 1220 of the Codified Ordinances) Issues land disturbance permits to ensure that measures are implemented to prevent the unreasonable degradation of properties, stream channels, waters, and other natural resources during construction, particularly due to erosion and sediment deposition.
- **Maintenance of the Stormwater Management System** - Section 1096.02 of the Codified Ordinances provides for the inspection, maintenance and repair of the County's stormwater management system to its original design capability.
- **MS4 Permit Compliance** – Loudoun County, as a municipal jurisdiction, is also a permittee under the VPDES general MS4 permit. To meet permit requirements, the County must track and report compliance with six Minimum Control Measures (MCMs):
 1. **Public Education and Outreach Plan.** Updated during each 5-year MS4 permit cycle, the PEOP is intended to identify the community involvement approach Loudoun County will use to promote methods to reduce the discharge of pollutants in stormwater runoff.
 2. **Public Involvement.**
 3. **Illicit Discharge Detection and Elimination (IDDE)** Program to detect and eliminate prohibited entry into the public storm drainage system of substances that are not stormwater.
 4. **Construction Site Stormwater Runoff Control.** This MCM is met through VESCP administration.
 5. **Post-Construction Stormwater Management for New Development and Development on Prior Developed Lands.** This MCM is met through VSMP administration.
 6. **Pollution Prevention/Good Housekeeping for Municipal Operations.** This MCM requires identifying, reporting and maintaining pollutant discharge reduction practices on all facilities owned by the County.

The MS4 general permit also requires the County to meet special conditions, including development of Action Plans to meet pollutant reduction targets

² Note: Erosion and Sediment Control and Stormwater Management are currently administered as separate programs. However, pursuant to amendments to the Virginia Stormwater Management Act, the County will be required to consolidate those programs into a single Virginia Erosion and Stormwater Management Program (VESMP), under a single ordinance, following development of a model ordinance by the DEQ.

required by the Chesapeake Bay Total Maximum Daily Load (TMDL) and any Local TMDL located *within the County's MS4 general permit boundary*.

- **Northern VA Clean Water Partners Program** (MS4 Minimum Control Measure) Multi-jurisdictional agreement through the Northern Virginia Regional Commission to provide community outreach regarding Stormwater best management practices.
- **Water Resources Monitoring Program** - This program was developed, in part, through a 2002 EPA Water Resource Management Program grant, and in cooperation with the United States Geological Survey and DEQ. Ongoing efforts of the program are overseen by the Department of Building & Development (B&D) that includes monitoring precipitation, water quality and flow in streams, and groundwater levels within a network of 14 wells. B&D produces an Annual Report summarizing the data collected during the calendar year.
- **Loudoun County Soil and Water Conservation District (LCSWCD)** - Administers Virginia Cost Share Programs, such as Agricultural Cost Share (such as stream fencing, forest buffer planting, and cover crops), urban cost share through the Virginia Conservation Assistance Program (VCAP), and Septic Pump Out rebate program.
- **Watershed Planning** - As a recommendation from the Strategic Watershed Management Solutions (SWMS) project, the Comprehensive Watershed Management Plan (CWMP), funded by a grant from the U.S. EPA, recommended nearly 90 watershed management tasks. Both federal and state agencies recommend that watershed management plans be used as a planning tool by local governments to help meet the goals and requirements of managing the quantity and quality of their water resources. The CWMP was the second major phase of watershed management planning by the County; the first being the SWMS project completed in 2006. Thus far, two such watershed plans have been completed by the County;
 - **The Upper Broad Run Watershed Management Plan (2014)**
 - **The Western Hills Watershed Management Plan (2019)**
- **Limestone Overlay District (LOD)** - Adopted in 2003, rescinded, then readopted in 2010, the provisions of Section 4-1900 of Revised 1993 Zoning Ordinance preserve and protect the unique geologic characteristics and the quality of the groundwater in its limestone area. A large area just east of the Catoctin Mountain range in the Rural Policy Area of Loudoun County is comprised of limestone and "Karst terrain" areas. The limestone geology of carbonate deposits in Karst terrain areas is dissolved over time by mildly acidic precipitation, creating fissures. The deposits are highly permeable, allowing surface water to pass through quickly to underlying aquifers and groundwater, and possibly to reappear

elsewhere as springs. The terrain is also characterized by the presence of certain natural features, such as sinkholes and rock outcrops. Thus, development on Karst terrain has a direct correlation to the potential for ground surface collapse and the susceptibility of groundwater and surface water pollution, and spring contamination, posing serious risks to public health, safety and welfare. The limestone cannot support land development activity without performance standards and monitoring. The referenced regulations are intended to guide land use and development in areas underlain by limestone and in areas with Karst features and Karst terrain.

- **Mountainside Development Overlay District (MDOD)**– First adopted on June 16, 1993, the provisions of Section 4-1600 of the Revised 1993 Zoning Ordinance regulate land use and development on the mountainsides of Loudoun County in such a manner as to provide for low density residential development in remote areas, and to: (1) assure mountainside development will not result in substantial damage to significant natural resource areas, wildlife habitats or native vegetation areas; (2) assure that mountainside development is compatible with the slope of the land; (3) assure proper design is utilized in grading and in the development of structures, roadways and drainage improvements; (4) assure mountainside conditions are properly identified and incorporated into the planning process for subdivision and site development; (5) prevent erosion and minimize clearing and grading; (6) ensure that all development is compatible with the existing topography and soils conditions; and (7) implement the intent of the Comprehensive Plan.
- **My Backyard Program** Virginia Cooperative Extension-Loudoun Master Gardeners Program designed to assist and guide residents with health soil, lawns, trees, shrubs, perennial flowers and more, with the ultimate goal of conserving and preserving our natural resources.
- **Northern VA Clean Water Partners Program.** Multi-jurisdictional agreement through Northern Virginia Regional Commission to provide community outreach regarding Stormwater best management practices. The County participates for partial fulfillment of MS4 Public Education MCM.
- **Strategic Watershed Management Solutions** - (December 2006) A diverse group of government agencies, stakeholders and watershed experts conducted a series of meetings to develop a shared vision for watershed management planning strategies for Loudoun County. Recommendations led to development of Comprehensive Watershed Management Plan (2008).

SOLID WASTE:

Code of Virginia, Section 10.1-1411 and the Virginia Regulations for Solid Waste Management Planning 9 VAC 20-130-10 require a Solid Waste Management Plan. This solid waste management plan (SWMP) provides an integrated strategy for the management of nonhazardous solid waste generated within the Loudoun County Solid Waste Management Planning District (LCSWMPD). The LCSWMPD is comprised of all unincorporated and incorporated areas within Loudoun County, including the Towns of Hamilton, Hillsboro, Leesburg, Lovettsville, Middleburg, Purcellville, and Round Hill.

The SWMP complies with the Code of Virginia (Section 10.1-1411) and the Virginia Regulations for Solid Waste Management Planning (9 VAC 20-130-10 et seq.), which give statutory authority and regulatory responsibility and accountability to local governments for planning for the handling of all types of nonhazardous solid waste.

The LCSWMPD adopted the following goals to ensure that the District's solid waste management needs are met:

- Establish a dynamic planning process and document that meets Virginia Statutory and Regulatory requirements, that fosters public participation, and that ensures that the District's solid waste management needs will be met.
- Identify and foster mechanisms to ensure that adequate solid waste collection services are available throughout the District.
- Identify and provide for the availability of facilities to ensure that adequate options for solid waste disposal are available throughout the District.
- Identify, implement, and/or maintain programs for ensuring that solid wastes are managed in accordance with Federal and State laws and regulations in a manner that protects public health, safety, and the environment.
- Develop and sustain a countywide program that will achieve or exceed the State's mandatory recycling rate.
- Provide safe recycling and disposal options for special wastes that may pose harm to the environment and/or to public health and safety.
- Develop an Implementation Plan that sets forth how the Objectives of the SWMP will be met.

Recycling Rate Requirement/Report. Virginia regulation 9VAC20-130-165 requires the Loudoun County Solid Waste Management Planning District to annually submit a recycling survey report to DEQ detailing the amount of municipal solid waste generated in the District that is collected for recycling and disposal. The Department of General Services (DGS) Waste Management Division compiles the data and completes and submits the required report.

Solid Waste Programs: DGS has implemented multiple initiatives for the safe disposal and recycling of solid waste. DGS operates and maintains the county landfill ensuring the safe, efficient and environmentally sound disposal of waste generated from within the County. At the solid waste facility, staff manage the disposal and recycling of residential, commercial, and industrial, construction and demolition wastes. Site specific recycling programs include the collection of used oil motor, used antifreeze, used oil filters, scrap automotive batteries, waste paint, scrap tires, metal and refrigerated appliances (Freon removal) and propane cylinder recycling. Yard waste is ground into mulch and leaves and grass clippings are composted and latex paint is recycled. DGS manages the environmental monitoring and permit compliance for the facility conducting groundwater, surface water, subsurface/surface gas monitoring and control. The division handles the management and oversight of all landfill CIP projects. DGS also provides crucial services to our citizens including strategically located recycling drop off centers, household hazardous waste collection, business hazardous waste collection, special event recycling collection container loaner program and community outreach and education about recycling and other solid waste management services. DGS provides for regulated medical waste collection, rechargeable battery return programs, and mercury vapor bulb collection for county facilities.

Environmental Monitoring: The county solid waste facility operates under multiple environmental permits; DEQ Permit solid waste permit number SWP001, DEQ Air Permit NSR 2018 number NRO72348, EPA Federal Operating Permit Article 1 Title V 2019 Permit number NRO72348, Virginia Pollutant Discharge Elimination System (VPDES) General Permit Regulation for Discharges of Stormwater Associated with Industrial Activity – Registration # VAR051077, and Loudoun Water Wastewater Discharge Permit No. 008. Each of the permits require extensive environmental monitoring and sampling of multi-media to include surface water, groundwater, subsurface landfill gas, odor, and air. The DGS oversees the permitting compliance activities.

Virginia Litter Prevention and Recycling Grant (VLPRG) Program. Virginia DEQ provides annual funding for litter prevention and recycling grants to localities based on population and road miles. Loudoun County currently receives nearly \$60,000 from the VLPRG and DGS administers the grant for the county and on behalf of the incorporated towns. Activities / programs supported include household hazardous waste collection events, recycling bins and litter receptacles for public spaces, litter cleanup activities, town curbside recycling services, and outreach materials.

Virginia Environmental Excellence Program (VEEP). The Virginia Environmental Excellence Program was established to encourage superior environmental performance. VEEP drives environmental excellence by encouraging facilities and organizations within the Commonwealth that have strong environmental records to go above and beyond their legal requirements. On February 1, 2018, the Loudoun County Solid Waste Management Facility (LCSWMF) was recognized for its ongoing environmental programs and was accepted as an E2 member with the VEEP. The LCSWMF has maintained its E2 VEEP status since 2018.

Landfill Reclamation Project. This \$21 million project is managed by the Department of General Services. This county project is a voluntary remediation of the oldest closed and un-lined portion of the county landfill which was constructed prior to modern environmental regulation. This existing unlined area is the accepted source of pollutants in facility groundwater and poses a future remediation liability. This project was permitted by DEQ in March 2015. The multiyear project commenced in 2015 and is anticipated to be completed in 2021.

Recycling Codified Ordinances. There are two chapters in the County Codified Ordinances that pertain to recycling requirements, Chapters 1084 and 1086. DGS Waste Management Division implements Chapter 1086 of the Codified Ordinances while the Department of Planning and Zoning enforces Chapter 1084.

- Chapter 1084 “Solid Waste Collection and Transportation” was adopted in 1992 and repealed and re-adopted in its entirety in 2002. This chapter regulates the local refuse collection and hauling business, requires curbside collection of source separated recyclable materials and prohibits their disposal except at a recycling facility or approved facility for ultimate disposition as a recycled material.
- Chapter 1086: “Solid Waste Reduction and Recycling” was adopted in 1992 and repealed and re-enacted in its entirety in 2002. This chapter contains provisions for residential and commercial recycling which require the source separation of specific recyclable materials and prohibits their willful disposal as solid waste.

ENERGY AND CONSERVATION:

2009 County Energy Strategy:

Through the 2009 American Recovery and Reinvestment Act, the U.S. Department of Energy's (DOE) Energy Efficiency and Conservation Block Grant (EECBG) program provided \$3.2 billion in block grants to eligible entities to develop, promote, implement, and manage energy efficiency and conservation projects. Loudoun County was qualified for a formula-based grant, calculated to be \$2,215,600. All entities with a grant allocation greater than \$2 million were expected to submit a proposed Energy Efficiency and Conservation Strategy (EECS) for approval by the DOE prior to being awarded the full grant amount. Applicants were allowed to request an initial award of up to \$250,000 for development of an EECS. Loudoun County requested the initial grant award and contracted with the Northern Virginia Regional Commission to create the *Loudoun County Energy Strategy* (CES).

At the December 15, 2009, Board of Supervisors (Board) Business Meeting³, the Board endorsed with amendments the visions, goals and recommendations contained in the CES as the

³ [Item IX County Energy Strategy as Proposed](#)

directional basis for ongoing community energy planning in Loudoun County, and approved the submission of the CES as the County's EECS to apply for the remaining EECSBG funds. The Board adopted CES and Appendices are included as Attachment 1 of the December 2009 item. The Board also approved a list of recommended projects and budgets as part of the County's application to the DOE for the remaining EECSBG funds. Loudoun's energy strategy was a landmark and the National Association of Counties praised Loudoun County's work as a model of local sustainable energy planning for other communities of the United States.

It is important to note that the vision, goals, and recommended actions of the CES are voluntary, implementable county-wide (not just within County government), would require significant planning and community involvement, entail the need for additional resources, and may involve seeking enabling legislation. These issues were known by the Board during the deliberation of adoption of the CES.

At the July 19, 2018 Business Meeting⁴, the Board directed staff to provide the Board with a review of the progress made toward goal attainment of the 2009 CES, and to bring back recommendations for updating the CES in response to the dramatic changes in energy technology and costs and financing approaches. Staff completed the requested research, and returned to the Finance/Government Operations and Economic Development Committee (FGOEDC) in November of 2018 to present its findings, and received FGOEDC guidance on three issues;

- 1) Staff should continue with the current practices of energy efficiency consideration for new County facility design, and component replacement for existing facilities.
- 2) Staff should develop and report back to the Board methods for better tracking and reporting of energy efficiency practice results. This was completed and reported through a memorandum to the FGOEDC chair.
- 3) An update of the CES goals should be considered to allow actions more specific to County facilities, and to update goals that will be less lofty and vague than those contained in the 2009 CES. The FGOEDC agreed that this work should be done at the committee level, so that updated goals will be consistent with the Board's vision for the County.

Commercial Property Assessed Clean Energy (C-PACE).

The Board approved the creation of a Loudoun C-PACE program, and the C-PACE Ordinance was adopted in February, 2019. C-PACE is an innovative financing program that offers an open-market financing solution for property owners desiring to install energy and water efficiency improvements, and promotes energy and water conservation and economic development. The program enables nonresidential property owners to obtain low-cost, long-term financing for energy efficiency, renewable energy, and water efficiency improvements through loans secured

[4 Item 10 BMI-Review and Update of the 2009 County Energy Strategy](#)

by a voluntary special assessment, with repayment collected by the designated Program Administrator. In June of 2019, the County contracted with Virginia PACE Authority to serve as Program Administrator for the County program.

Eligible properties in the Loudoun C-PACE includes all properties located within the County except for single family or multifamily residential properties, properties owned by homeowners or condominium associations, or properties owned by local, state or federal governments.

Green Building Guidelines

The Department of Transportation and Capital Infrastructure (DTCI) applies the Green Building Guidelines Policy with a goal to attain a minimum of a Leadership in Energy and Environmental Design (LEED) Silver Certification level of compliance; however, DTCI staff will evaluate and review individual projects for LEED attainability based on reasonable costs.

Renewable/Clean Energy.

In the 2020 Virginia General Assembly session, two legislative acts were passed that could have significant impact on the County in terms of renewable energy use and reductions in greenhouse gases.

The Virginia Clean Economy Act: This Act incorporates clean energy directions issued by Governor Ralph Northam in [Executive Order #43](#) in September 2019. The law requires new measures to promote energy efficiency, sets a schedule for closing old fossil fuel power plants, and requires electricity to come from 100 percent renewable sources such as solar or wind. Energy companies must pay penalties for not meeting their targets, and part of that revenue would fund job training and renewable energy programs in historically disadvantaged communities.

The law also advances solar and distributed generation by establishing that 16,100 megawatts of solar and onshore wind is “in the public interest.” The law expands net metering limits, making it easier for rooftop solar to advance across Virginia, and expands the ability to provide renewable energy through the use of Power Purchase Agreements (PPAs). The new law requires Virginia’s largest energy companies to construct or acquire more than 3,100 megawatts of energy storage capacity.

The Clean Energy and Community Flood Preparedness Act: The Act establishes a carbon dioxide cap-and-trade program to reduce emissions from power plants, in compliance with the Regional Greenhouse Gas Initiative (RGGI), and creates a Virginia Community Flood Preparedness Fund to enhance flood prevention, protection, and coastal resilience, funded by the sale of emissions allowances would fund it.

The RGGI is a market-based collaborative effort among several states to fight climate change and reduce greenhouse gas emissions from the power sector while also driving economic

growth. The RGGI originally did not include Virginia, which will now become the southernmost state in the consortium.

Alternative Fuels for County Fleet.

The Fleet Management Division in the Department of General Services provides for the acquisition, equipping, licensing, assignment, maintenance, replacement and disposal of the County fleet. Fleet staff periodically review information regarding alternative fuel technologies and prices in order to determine if alternative fuel use is appropriate for the County fleet.

- *Compressed Natural Gas (CNG).* In 2015 and again in 2019, Fleet staff performed a study to determine cost-effectiveness of conversion to CNG for the bus fleet. Due to the high cost of CNG fueling infrastructure and the low cost of diesel, CNG conversion was not shown to be appropriate. Additional reviews may be needed as conditions change.
- *Electric Vehicles.* Conversion to electric vehicles has not been attractive due to the high cost of available models and the lack of charging stations. Recent Fleet staff analysis has shown that fully electric vehicles (sedans) have higher initial costs and maintenance costs, and lower resale value than the current preferred fleet vehicles. Another factor is that approximately 70% of the County fleet is made up of emergency and public safety vehicles. Commercially available electric vehicles are not capable of supporting the high level of electronic devices needed for such vehicles.
- *Hybrid Vehicles.* From 2002-2013, the County purchased 72 hybrid vehicles of various makes for the general fleet. Hybrid vehicle purchases were discontinued due to high maintenance costs, complaints about off-road capability and complaints about passenger transport issues due to lack of interior space. Like EVs, hybrids also cannot be used as public safety vehicles since they cannot support needed electronic devices.
- *Hybrid Buses.* Recently, the County purchased 2 gasoline/electric hybrid buses for Parks and Recreation that are enhancements to existing factory vehicle chassis. These buses differ slightly in that the gasoline engine can operate independently of the electric assist if that system were to fail or run out of charge. Other studies of this type of vehicle have shown significant savings over the life of the vehicle.

Loudoun County Energy and Conservation Program.

The Loudoun County Energy Efficiency and Conservation Program provides leadership, guidance, education and technical expertise to reduce energy consumption, improve energy efficiency, reduce energy costs, and facilitate energy conservation in county facilities.

Regional Energy and Environmental Initiatives with County participation:

- LEAP Local Energy Alliance Program
- Solarize NOVA Program
- 2030 Regional Climate Energy Plan
- SolSmart Community Silver Designation (US Dept. of Energy)

OTHER PROGRAMS WITH ENVIRONMENTAL IMPACT:

- **Water and Wastewater Program (2015)** Designed to provide assistance to communities that may have inadequate water or wastewater availability. Although generally considered a public health initiative, environmental gains can be realized through elimination of substandard or failing on-site wastewater disposal systems.
- **The Agricultural and Forestal District (“AFD”) Program.** Established in 1979, as a means to “...conserve, protect and encourage the development and improvement of agricultural and forestal lands for the production of food and other agricultural and forestal products, and conserve and protect agricultural and forestal lands as valued natural and ecological resources which provide essential open spaces for clean air sheds, as well as for aesthetic purposes”.
- **Conservation Easement Assistance Program.** Launched in 2019, the Program is designed to help landowners with the upfront costs of placing land under conservation easement. Landowners interested in placing their land under a conservation easement should contact a land trust which will apply to the County Program on behalf of the landowner. Funding for half of the costs (maximum \$15,000) required to create an easement will be provided to land trusts working with qualifying County landowners.



PROGRAM REVIEW - FAIRFAX COUNTY ENVIRONMENTAL QUALITY ADVISORY COUNCIL

PREPARED FOR THE BOARD OF SUPERVISORS BY STAFF FROM THE DEPARTMENTS OF GENERAL SERVICES AND BUILDING & DEVELOPMENT COUNTY OF LOUDOUN

1. PURPOSE

On April 21, 2020 under Item 9 the Board of Supervisors (9-0) directed staff to prepare an information item for a Finance/Government Operations and Economic Development Committee meeting in October 2020 that reviews current and past environmental initiatives, strategies and actions as referenced.

Staff were directed to include an evaluation of past citizen advisory boards in Loudoun, and review of the Environmental Quality Advisory Council in Fairfax County. Information gathered would support the Board in determining if a similar advisory group should be considered in Loudoun, one that would take in Board and citizen input, consider pros and cons of each initiative, and make recommendations.

2. BACKGROUND (LOUDOUN)

Currently, Loudoun County has one citizen advisory board with the main focus of review of existing or proposed policies as related to the County's water resources, and that is the Water Resources Technical Advisory Committee (WRTAC). The WRTAC is a Board-appointed committee, created in 2001 at the recommendation of the now disbanded Ad-hoc Groundwater Advisory Committee, and has remained active on a variety of water resources issues.

The overall purpose of the WRTAC is to advise the Board on all matters related to water resources within the County. In past years, input from the WRTAC has assisted the Board by providing guidance through development of the Water Resources Monitoring Program (WRMP) and the Comprehensive Watershed Management Plan (CWMP), and development of a Work Plan for implementation of the priority recommendations from the CWMP. These efforts have resulted in

several work products including the 2009 Countywide Stream Assessment, the Upper Broad Run Watershed Management Plan, and the Western Hills Watershed Management Plan. Since the completion of the approved Work Plan, the WRTAC has not been provided guidance from the Board for continuation of additional efforts.

Initially chartered to meet monthly and provide quarterly reports to the Board, the WRTAC's charter has recently been changed to eliminate the monthly meeting mandate in favor of meeting on an "as needed" basis.

3. ENVIRONMENTAL QUALITY ADVISORY COUNCIL (FAIRFAX)

The citizen group recognized as the Environmental Quality Advisory Council ([EQAC](#)) has been established in Fairfax County since September 1971, and advises the Fairfax County Board of Supervisors (Fairfax Board) on environmental matters in the County. The EQAC's directive and mission is established in their Charter found [here](#).

The EQAC consists of fourteen Fairfax Board appointed positions; nine representing each Fairfax magisterial district, four at-large members, and one student representative. All members serve a three-year term, except the student representative, who serves a one-year term as part of an environmental outreach program. The EQAC meets once a month, in which Fairfax County Departments and external groups are invited to speak on a wide range of environmental items of interest.

Primary support for the EQAC was previously provided by the Fairfax County Department of Planning and Development, but these duties have recently transitioned to the Office of Environmental and Energy Coordination (OEEC). The OEEC is a new Fairfax County Department that was established in 2019, following an EQAC recommendation and report. The OEEC is now leading environmental and energy initiatives in Fairfax County. The OEEC also supports the EQAC by making staff available to assist with EQAC projects and crafting reports, and provides a designated staff member as a liaison between the EQAC and all other Fairfax County Departments.

The EQAC can bring any environmental matter to the Fairfax Board that they feel should be addressed or considered. EQAC topics appear to center around the Fairfax Board's Environmental Vision, which includes seven core service areas; Land Use, Transportation, Water, Waste Management, Parks and Ecological Resources, Climate and Energy, and Environmental Stewardship. Environmental topics for discussion are not bound to these areas, and include other areas such as Air Quality, Wildlife Management and Technology.

The EQAC advises the Fairfax Board primarily through two methods; an Annual Report and a Resolution/Position Memoranda. The Annual Report contains recommendations for Fairfax County to consider, provides a progress report on previous EQAC initiatives and recommendations, reports on the outcome of environmental legislation in the previous General Assembly Session, and includes a summary of environmental matters directly related to the Fairfax County school system.

The 2019 EQAC Annual [Report](#) addresses the documents purpose is to:

- Assist the Fairfax Board in evaluating ongoing environmental programs and to provide the basis for proposing new programs.
- Aid public agencies in coordinating programs to jointly address environmental issues.
- Inform residents and others who are concerned with environmental issues

Following presentation of the Annual Report to the Fairfax Board, Staff are tasked with following up on document recommendations. Regarding memoranda, several are sent each year to the Fairfax Board addressing environmental topics of Countywide applicability, as identified by the EQAC.

Based on conversations with Fairfax County Staff, other important EQAC efforts include a public hearing held by the EQAC each January to solicit public input on environmental issues of interest, legislative recommendations to the Fairfax Board in August for the upcoming General Assembly session, and administration of the Environmental Excellence [Awards](#). A joint award ceremony is generally held each Fall and includes the Environmental Excellence Award, Design Excellence Awards, and Friends of Trees Awards. The Environmental Excellence Awards are sponsored by the OEEC and winners selected by a sub-committee of EQAC members. EQAC also generally holds annual joint meetings with the Fairfax Board and the Fairfax County Park Authority Board of Directors, and bi-annual meetings with senior leadership of several departments.

4. Joint Environmental Task Force

In addition to the EQAC, Fairfax County has a Joint Environmental Task Force (JET) which was established in April 2019 by the Fairfax Board and Fairfax County School Board. The JET is made up of thirteen members, which includes two representatives from the Fairfax Board, two from the Fairfax County School Board, and nine from the community. The JET mission statement states that the mission of the 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 has focused on areas of land use, energy, transportation waste reduction/recycling and workforce development. The JET also has the ability to suggest modifications to budget, policy, and capital improvement planning. After speaking with Fairfax Staff, it was clear that JET is a new program, and there is little to report on at this time. Additional information on the mission of JET and their role in Fairfax County can be observed [here](#).

5. Additional Jurisdictions

Fairfax County’s EQAC is only one of several environmental advisory boards in the region. Table 1 below provides a brief summary of additional committees of adjacent jurisdictions.

Table1¹

Jurisdiction	Group	Duties	Environmental Topics
City of Alexandria	Environmental Policy Commission	Advise and make recommendations to the City Council and, where appropriate, to the Planning Commission and City Manager.	Clean Air, Land Use, Noise Pollution, Pesticides, Herbicides, Contaminants, Solid Waste, Water Quality and Quantity; Other matters referred to the EPC by the City and citizens; Other topics relating to the conservation and protection of Alexandria's environment.
Arlington County	Environment and Energy Conservation Commission	Reviews and advises on environmental and energy conservation issues.	The County's natural environment quality based on the interrelationships among air, water and land; Energy conservation in public and private buildings; Environmental issues impacting residents' health; County projects impacting the environment.
Falls Church	Environmental Sustainability Council	Originally established for the purpose of planning and promoting a comprehensive program of recycling and litter prevention activities. The ESC and its subcommittees have addressed a wide range of environmental and sustainability issues.	Climate, Air and Energy, Stormwater, Streams, and Natural Springs, Urban Forest and Biodiversity, Consumption and Waste, Community involvement.
City of Fairfax	Environmental Sustainability Committee	The committee will advise and assist the City Council and all Boards and Commissions on policies and practices related to the environment and energy conservation. The committee acts as an advocate for protecting, preserving, and enhancing the environment. The committee provides a means for promoting discussion between the public and private sectors on environmental issues	Environmental Sustainability, Energy, Green Transportation, Recycling and Waste Reduction, Water and Stormwater Resources.
Leesburg	Environmental Advisory Commission	The mission of the Environmental Advisory Commission (EAC) is to promote and protect the environmental interests of the town. The Commission reviews Town planning and policy documents, conducts an annual environmental awards program, and advises the Town Council on town environmental concerns.	As requested by staff and town council.

¹ Northern Virginia Regional Commission.

ATTACHMENT 2