PLAN FORWARD

Green Building Policies

Executive Summary

"Green building" refers to a series of practices within the design, construction, and operation of buildings, and their associated landscapes, that serve to minimize adverse impacts to the environment and to building occupants. The Environmental Protection Agency (EPA) defines green building as the practice of creating structures that are environmentally responsible and resource-efficient through a building's lifecycle. Green building and sustainable building design have long been a priority for the Fairfax County Board of Supervisors. In 2007, Fairfax County first adopted green building policies for private development as part of Objective 13 of the Comprehensive Plan Policy Plan Environment Element. These policies are implemented through the entitlement process and generally reflect an applicant's intent to certify a project through a third-party green building program such as such as the U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) program or an equivalent. They have had a significant impact on development within Fairfax County by encouraging the application of green building practices within developments, and attainment of formal third-party certification.

In addition to the Policy Plan, the Board of Supervisors (Board) has adopted a green building policy for the county's capital projects[1] as well as a series of other environmental and climate-related plans that include green building considerations. Further, the Countywide Strategic Plan emphasizes the importance of greenhouse gas emission reductions and the use of green building technology to maximize energy efficiency. These changes in county policy and practice have warranted a comprehensive review and update of the Comprehensive Plan green building policies to align with county climate goals. Included in this paper are the evolution of the Comprehensive Plan green building policies, linkages to county plans, trends, and potential policy areas that could be addressed in the Policy Plan update.

Policy History and Implementation

History

- In December 2007, the Board adopted the county's first green building policies for private development under Objective 13 of the Comprehensive Plan Policy Plan Environment Element. These policies addressed green building practices that should be incorporated into entitlement applications; identified areas based on the Concept Map for Future Development that should attain formal third-party green building certification; and set a baseline goal for energy designations for residential applications. When this policy was adopted, the Board directed staff to conduct a review of the policy after two years to evaluate its effectiveness and determine if modifications were needed, as the green building technologies field was rapidly evolving.

[1] Capital projects refers to the construction of publicly-funded projects. This involves the design, land acquisition and construction services for governmental facility projects such as libraries, courts, police and fire stations, and infrastructure improvement projects such as roads, sanitary sewer extensions, walkways, bus stop shelters and stormwater drainage projects.

- In 2009, Fairfax County adopted a Sustainable Development Policy for Capital Facilities that required new county buildings and major renovations or additions to existing buildings of more than 10,000-square-feet meet LEED Silver certification.
- In July 2014, the Comprehensive Plan policies were amended to ensure Plan language reflected advances in specific rating systems and provided clarifications on various terms used. The amendment also strengthened the expectation for increased green building performance for entitlement applications, added guidance for electric vehicle charging, and added guidance regarding expectations for public-private development. In addition, the change set the standard expectation that all new residential development (subject to an entitlement application) countywide be certified through an established residential green building rating system. This is more rigorous than the 2007 policies for residential development in that a residential green building rating system considers other elements of green building practice such as site assessment, water efficiency, and materials sourcing, among others.
- In December 2019, the Board adopted an update to the Comprehensive Plan policies which placed a focus on energy efficiency and conservation. This change was the first time the Board adopted a policy with an emphasis on one element of green building practices over another and represented the desire of the Board to move toward an increased emphasis on energy efficiency.
- In 2020 the Board updated the Sustainable Development Policy for Capital Projects to increase the expectation for development to meet LEED Gold certification with the incorporation of electric vehicle charging and solar -readiness features, and on-site renewable energy generation as practicable.
- In 2021 the Board adopted an updated Operational Energy Strategy (OES) which is intended to advance the Board's Environmental Vision through setting goals, target, and actions across 11 focus areas including greenhouse gas emissions reductions, energy use and efficiency, water use and efficiency, green buildings, renewable energy, fleet electrification, waste management and recycling. The 2021 update to the OES included a new greenhouse gas emissions reduction goal and enhanced green building standards for county facilities including adding net-zero targets for county facilities.
- In 2021 the Board accepted the Community-wide Energy and Climate Action Plan (CECAP) which is a community-driven greenhouse gas emission reduction plan. CECAP included recommendations to update Comprehensive Plan policies to address the causes of climate change.
- In 2021 a Zero Waste Plan was established focusing on waste reduction and diversion for county and school operations, which is a large consideration for holistic green building practices.
- In 2022 the Board adopted Resilient Fairfax which is a plan and program to help the county adapt and become more resilient to changing climate-related conditions. Resilient Fairfax included recommendations to update Comprehensive Plan policies to address the effects of climate change.

MITRE Report

As part of a rezoning application that was approved in 2008 (RZ 2008-PR-011/PCA 92-P-001-5), the MITRE Corporation provided a proffer commitment to a Future Tysons & Fairfax County Sustainability Program. This rezoning application was processed immediately following the Board direction to review the green building policies adopted under Objective 13. To support that review, MITRE proffered to allocate time to monitoring, participating in, hosting, and contributing resources to a sustainability program and related activities that were supported by the 2007 green building policies. MITRE produced two reports as part of this proffer; the first provided electric vehicle charging infrastructure recommendations in 2011, and the second provided building energy technology recommendations in 2013. These reports provided valuable guidance on market conditions and appropriate considerations for policy setting, resulting in policy changes implemented with the 2014 green building review and Plan amendment process. One of the most impactful recommendations is related to "continuing the practice of using design and performance guidelines to set environmental goals while allowing developers to choose the best means of achieving them." This has allowed staff to work with developers to address environmental goals though mechanisms best suited to a project's unique circumstances, as well as modify the requests associated with facilities such as electric vehicle charging station infrastructure based on market demand, without requiring a formal policy update process.

USGBC LEED Rating System

The USGBC LEED rating system is used across the world and is the most widely used green building system; LEED is constantly evolving. Formal certification programs accepted under the Comprehensive Plan policies are based on the LEED rating system, but equivalent programs, as defined by the policy and approved by staff, are acceptable. Equivalent programs currently accepted include the National Green Building Standard (NGBS) and the EarthCraft Program. As new programs are developed and proposed, staff continues to review the program requirements and consider them for acceptance based on criteria set forth in the policy.

LEED provides a framework for identifying, implementing, and measuring green building and neighborhood design, construction, operations, and maintenance, and it addresses commercial, institutional, and residential buildings and neighborhood developments where varying levels of certification can be achieved (Certified, Silver, Gold, Platinum). The LEED rating system specifically emphasized in the Policy Plan is LEED for Building Design and Construction (LEED BD+C) which features a wide range of development types including new construction and major renovations; core and shell developments; schools; retail; data centers; warehouses and distribution centers; hospitality; healthcare; homes and multifamily buildings. Other LEED rating systems include Interior Design and Construction (LEED-ID+C), Building Operations and Maintenance (LEED-O+M), Neighborhood Development (LEED-ND), Homes, and Cities.

Buildings seeking LEED certification must comply with the energy and environmental criteria set forth by the rating system, which include meeting or exceeding the baseline requirements of certain standards such as those set by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE). ASHRAE creates standards and guidelines for building design, energy efficiency, and indoor air quality. For example, regarding energy standards for sites and buildings, except low-rise residential buildings (AHSRAE 90.1), projects must demonstrate energy performance above the ASHRAE 90.1 baseline by using either the whole building energy simulation or one of the prescriptive compliance paths. Projects need to follow mandatory provisions related to building envelope, HVAC, service water heating, power, lighting, and other systems, as well as

prescriptive and performance-based paths for additional energy efficiency improvements. Compliance with ASHRAE 90.1 is a prerequisite for earning LEED points in the Energy and Atmosphere category.

County policies have historically focused on the LEED BD+C rating system as the Comprehensive Plan already incorporates many of the LEED for Neighborhood Development (LEED-ND) principles and goals. While LEED-ND is a helpful program providing guidance on topics like site location and linkages, neighborhood pattern and design, and green infrastructure and buildings, Fairfax County's Comprehensive Plan provides context-sensitive guidance based on a particular area. Therefore, it is recommended that the use of LEED-BD+C remains the prevalent approach to the implementation of the green building policies. Through LEED-BD+C, project teams have the ability to create "campus" developments to allow for buildings to share the benefits of overall site development for larger redevelopment projects. While other LEED rating systems have been used in the past when appropriate, they have been approved in close collaboration with staff and developers on a case-by-case basis. Selection of other LEED rating systems has been predominantly determined by the LEED Rating System Selection Guidance.

Implementation

Current green building policies have been implemented through the entitlement process, most often as proffer commitments from the applicant or development conditions coordinated with the applicant, which provide specific parameters that developments must comply with during the design and construction process. Early green building commitments started in 2007 and ranged from formal LEED Certification to a more informal approach of individual elements to be incorporated within a project, otherwise referred to as "soft commitments". After the Board directed staff in 2021 to review the use of soft commitments, given the advances in green building technologies and rating systems; it was determined that use of soft commitments is no longer appropriate. Since 2021, the county has been successful in moving away from the use of soft commitments and has been obtaining commitments to formal certification for all eligible projects undergoing the entitlement review process. This has been reflected in the monitoring and tracking progress reports on CECAP and Resilient Fairfax implementation to the Board.

Green Building Practices in the Plan

Proposed entitlement applications must meet applicable county code requirements, as well as many state, local, or federal requirements, and are reviewed for conformance or harmony with policies in the Comprehensive Plan. All other development, typically referred to as "by-right-development" must meet applicable county code requirements, in addition to other state, local, or federal requirements. The current Comprehensive Plan green building policies identify green building practices that should be incorporated within the design and construction of development proposals that are seeking entitlement. These practices:

- Encourage the application of energy conservation, water conservation and other green building practices in the design of new development and redevelopment countywide.
- Set the expectation for formal third-party green building certification for nonresidential development or multifamily residential development proposals within the Tysons Urban Center, Suburban Centers, Community Business Centers, Industrial Areas and Transit Station Areas as identified on the Concept Map for Future Development through the LEED rating system or equivalent program unless otherwise recommended in the Area Plan.

- Set the expectation that all development proposals for residential development attain formal third-party green building certification through an established residential green building rating system.
- Encourage commitments to monetary contributions to support the county's environmental initiatives to be refunded upon demonstration of attainment of certification through the applicable LEED or equivalent rating system (to ensure that a project that fails to meet certification is not left out of compliance with a proffer).
- Encourage energy conservation through the provision of measures to support non-motorized transportation such as showers, lockers, and bicycle parking.
- Encourage public-private partnerships where land is provided by the county to meet or exceed the county guidelines for green building certification for capital projects.
- Encourage the provision of or readiness for electric vehicle charging stations particularly within residential development.
- Encourage participation in periodic regional and local evaluations of the outcomes achieved by the application of sustainable land use principles and technology with the energy providers and resource industry.

The Sustainable Development Policy for Capital Facilities and the Operational Energy Strategy (OES) serve as directives to the Department of Public Works and Environmental Services (DPWES), who is responsible for designing and constructing capital projects to include facilities such as fire stations, police stations, libraries, and county governmental facilities. Items from these directives must be incorporated whether the development is by-right or requires an entitlement application. DPWES is responsible for reporting to the Office of Environment and Energy Coordination (OEEC) and the Board regarding the progress and attainment of these goals, and any updates to these policies occur in conjunction with the Board, DPWES, OEEC, and other county agencies outside of the Comprehensive Plan review process. Therefore, these policies do not reside within the Comprehensive Plan; however, the green building policies within the Comprehensive Plan encourage public-private partnerships and projects where county land is utilized to meet or exceed the green building guidelines that apply to capital projects.

The Sustainable Development Policy for Capital Facilities does not apply to capital projects under the purview of entities other than the Board of Supervisors. Fairfax County Public Schools (FCPS) has an environmental stewardship program for public school projects (FCPS Get2Green) and projects on Fairfax County Redevelopment and Housing Authority (FCRHA) land may have additional criteria to meet to be competitive for funding from the state. For any of these projects going through the entitlement process, review is informed by the Green Building policies in the Comprehensive Plan Policy Plan.

In addition to the Policy Plan, which provides guidance for the county as a whole, the Area volumes of the Comprehensive Plan have varying levels of site-specific guidance which often have expectations of higher levels of certification in areas such as Tysons.

Local Trends and National Influences

Green building practices have been an emphasis in the region with localities updating green building policies for private development within recent years to help meet climate goals and reduce emissions. Further, federal actions have also placed an increased emphasis on topics such as

electric vehicle charging. The following provides brief summaries of a few policies and bills related to green building practices that could help inform new or enhanced Plan policies.

Alexandria, VA

The City of Alexandria has a green building policy for both public and private development. The policy was updated in 2019 and applies to new public developments, new private developments, and major renovations that require a Development Site Plan or Development Special Use Permit. For private development, the policy seeks LEED Silver certification while also focusing on energy use reduction, water efficiency, and indoor environmental quality. Similar to Fairfax County, the City of Alexandria policy includes alternative programs that may be accepted but it includes detailed descriptions of performance design targets for use of non-LEED programs.

Arlington, VA

Arlington County operates a green building incentive policy which was updated in 2020 and is currently under revision. The Arlington program is voluntary for projects requiring a site plan, but awards participating developers with bonus densities based on the Floor Area Ratio (FAR) that is being pursued. In order to achieve bonus densities, developments must pursue LEED Gold certification, meet additional energy requirements, and incorporate other environmental components. The revision of this policy is anticipated to include four incentive pathways including traditional, a climate adaption pathway, an adaptive reuse pathway, and an existing buildings pathway.

City of Fairfax, VA

The City of Fairfax is currently developing a new green building policy to establish standards and incentives for new public and private construction, and major renovations. The draft policy would apply to major renovation projects and new construction projects that are 5,000-square-feet or greater and are subject to the special exception, variance, rezoning, planned development review, or special use review process. The draft policy seeks LEED Silver certification, with alignment to specific credits expected regardless of green building program selection. This draft policy is anticipated to be presented to the City Council in 2025.

National Trends

While local trends have an influence on potential policy considerations, additional federal actions have increased the prevalence of electric vehicles and the infrastructure needs associated with them that should be considered with any policy modifications.

The Bipartisan Infrastructure Law (BIL) also referred to as the Infrastructure Investment and Jobs Act (IIJA) provided substantial funding for transportation infrastructure improvements, including investments in public transit, electric vehicles, and emerging mobility technologies. The Inflation Reduction Act (IRA) was focused primarily on addressing climate change and reducing carbon emissions, with significant funding for clean energy and sustainable transportation initiatives. The IRA provided incentives for electric vehicles and associated investments in electric vehicle charging infrastructure.

These actions have increased the emphasis on electric vehicles nationwide. While the Comprehensive Plan currently includes a policy to encourage the provision of or readiness for electric vehicle charging opportunities within new and redevelopment proposals, the registration of

electric vehicles continues to increase, therefore infrastructure needs will continue to increase. It is important to ensure that the Comprehensive Plan policies anticipate this for all development types.

Linkages and Areas for Enhancement

The county is pursuing a number of initiatives that could directly relate to the green building policies within the Policy Plan. These topics are explored below and intended to be limited to items that could be actionable through the land development process. These parameters allow for county verification of the incorporation of green building practices prior to occupancy or final project closeout.

Electric Vehicle Charging

In 2014 the Board adopted the electric vehicle charging policy within the Policy Plan, which encourages the provision of or readiness for electric vehicle charging stations, particularly within residential development. No specific percentage was provided to allow the policy to be flexible and respond to the changing market; this has allowed staff to gradually increase the electric vehicle expectation over time. In 2021 the Board adopted a new Zoning Ordinance as part of the Zoning Ordinance Modernization (zMOD) effort. With zMOD, Electric Vehicle Charging spaces were specifically included as spaces that count toward the minimum required number of parking spaces. Land Development Services (LDS) provides a fee exemption for all electrical and building permits associated with electric vehicle charging stations. The Office of Environmental and Energy Coordination (OEEC) administers the Charge Up Fairfax program to help provide electric vehicle charging stations in older developments where current charging opportunities do not exist. There is an ever-present need to provide additional electric vehicle charging stations in the county, and new developments offer the opportunity to address this need proactively.

The LEED rating system currently seeks between 2- and-5-percent of parking spaces as electric vehicle charging spaces, which was past practice during development review. However, in recent years, staff has been successful in securing increased percentages of electric vehicle charging stations and including commitments for developers to provide conduits and infrastructure within garages and parking areas to facilitate the easy installation of charging stations in the future.

The registration of electric vehicles continues to grow and the infrastructure needed to support this change is crucial. OEEC is developing an Electric Vehicle Readiness Strategy that is anticipated to be completed in 2025 and could provide specific recommendations for quantities of stations that could be implemented through the review of development projects.

Bird-Friendly Design Practices

Development proposals for non-residential or multi-family buildings are encouraged to minimize short- and long-term impacts to the environment. One mechanism of accomplishing this is through the incorporation of bird-friendly design practices. The objective of bird-friendly design strategies is to make the building visible to birds in flight and reduce reflections that distract or confuse birds through the use of appropriate glazing treatments or architectural elements, such as using color, texture, opacity, patterns, louvers, screens, interior window treatments, or ultraviolet materials that are visible to birds. Staff has been successful in obtaining commitments for these practices in some developments and areas, and has identified the need for the formalization of a policy to ensure consistent application throughout the county.

Modification of Green Building Levels Identified in Comprehensive Plan

Since 2007 when the Comprehensive Plan green building policies were first adopted, proposed entitlement applications have continued to achieve a range of certification levels based on advances in technology and the market, increased demand for sustainably designed buildings, and increased policy guidance. While the current policy allows for a wide range of certifications, it has been found that most new buildings in the county are meeting LEED Silver certification. While this trend can be attributed to many things like increased consumer expectations, one factor that drives higher certification levels (i.e., LEED Silver v. basic LEED) is the current implementation of the policy, which supports a base commitment and optional goals for higher certification. Updates to the green building certification levels recommended in the Comprehensive Plan should continue to reflect this practice. Area Plans, such as Tysons, which have recommendations for higher green building certification levels than found in the Policy Plan may also need to be reviewed.

While certification through the LEED rating system continues to be recommended, to better align with climate goals and commitments found in public developments, the Comprehensive Plan green building policies could take the approach of emphasizing specific aspects of energy and climate, and focusing concepts and techniques rather than specific credits. The focus should be on strategies geared toward emission reduction strategies or rating systems that strongly emphasize energy efficiency.

Current policies for residential development rely on the EnergyStar® program. Through the implementation and verification of green building practice commitments, it has been found that this reflects a time when EnergyStar® was the only program available for residential projects. Now, there are many more paths to compliance for residential developments that result in equal or better energy performance, and higher levels of certification which should be encouraged.

Adaptive Reuse, Building Retrofit, and Major Renovation Projects

The addition of a policy specific to adaptive reuse, building retrofit, and major renovation projects is needed as this type of development has become more prevalent. The Land Use Element of the Policy Plan includes Appendix 13 – Guidelines for Commercial Building Repurposing, which provides excellent guidance for repurposing buildings, however the green building policies in the Environment Element could provide additional framework for adaptive reuse projects, building retrofit, major renovations, and other types of redevelopment, and could apply to projects even if they are not using Appendix 13. The addition of such policy would acknowledge that based on the modifications proposed in a particular project, formal green building certification programs may or may not be appropriate or even possible. When formal certification is not appropriate, components of the green building policies could be emphasized during the review process to ensure projects are maximizing building efficiency.

Policy Recommendations

While the current Comprehensive Plan green building policies address the short- and long-term impacts on the environment and building occupants, there are areas that could be further strengthened to align with climate goals, county plans, regional efforts, and to formalize the practices that have been implemented through the development review process of entitlement applications.

The following is a list of initially identified topics where policies could be enhanced or added in the Environment Element. Staff will continue to coordinate with county agencies and applicable stakeholders to develop policies to address topics listed in this paper, as well as any additional policies that are appropriate for incorporation into the Comprehensive Plan's Policy Plan.

Identified topics are presented in two general groups for consideration, additional topics may be added based on continuing outreach, and specific policy text will be developed as the Policy Plan project continues.

Enhancing Policies within Objective 13 to Address Climate Goals

- Modify Policy A to more specifically focus zero-waste strategies on waste reduction and future diversion strategies, aligned with the EPA waste reduction hierarchy. Methods could include encouraging mixed-use developments to provide space within waste collection areas for future waste diversion strategies such as, but not limited to, composting and glass collection.
- Modify Policy A to increase the focus on renewable energy resource utilization within projects, including on-site generation, and provide examples such as but not limited to solar and geothermal.
- Expand Policy A to introduce the concept of building electrification; explore inclusion of language introducing climate concepts in the illustrative technologies listing currently included within Policy A.
- Modify Policy B to recommend minimum certification at the LEED Silver level; explore the potential inclusion of linkages to specific credits related to climate and resiliency concepts to reduce building emissions and increase resiliency; and focus on emission reduction credits or rating systems that strongly emphasize energy efficiency.
- Broaden Policy B beyond EnergyStar® to allow for additional solutions resulting in higher quality building products.

Formalizing Practice

- Policy flexibility should remain for electric vehicle charging; however, implementation practice should be modified to request at least 10-percent of initial spaces as electric vehicle charging spaces with the wiring and infrastructure incorporated in the rest of the development to support easy future installation of spaces. This implementation recommendation is subject to change based on the final Electric Vehicle Readiness Strategy that is developed by the county in 2025.
- Add a policy to address adaptive reuse, building retrofit, and major renovation projects.
- Add a bird-friendly design policy to ensure impacts to migrating bird populations from buildings is reduced.