



ARLINGTON COUNTY, VIRGINIA

County Board Agenda Item Meeting of December 12, 2020

DATE: December 4, 2020

SUBJECT: Updates to the Green Building Incentive Policy for Site Plan Projects

C. M. RECOMMENDATION:

Amend the County's Green Building Incentive Policy for Site Plans (see Attachment 1) to evaluate special exception site plan requests for bonus density under Arlington County Zoning Ordinance (ACZO) §15.5.7.A.1.

ISSUES: Proposed changes to the Green Building Incentive Policy (the Policy) are based on the success of the Policy to date, green building market transformations in the construction industry, changes in the building code, and recent updates to the LEED green building rating system (introduction of LEED version 4.1). Although the proposed revisions were negotiated in collaboration with NAIOP and were generally agreed upon, NAIOP remains concerned that the proposed changes will make it more costly to do business in Arlington. Other stakeholders including the Climate Change, Energy and Environment Commission (C2E2), formerly named the Environment and Energy Conservation Commission (E2C2), EcoAction Arlington, National Audubon Society, and citizens have encouraged more stringent energy and sustainability requirements.

SUMMARY: On September 19, 2019, Arlington County adopted an updated Community Energy Plan (2019 CEP), which includes a goal for Arlington to be a Carbon Neutral Community by 2050. The 2019 CEP reports that 58% of greenhouse gas emissions are generated by buildings in Arlington. The Green Building Incentive Policy is the primary tool currently available to encourage the private sector to reduce energy use and greenhouse gas emissions in new construction to help achieve Arlington's long-term carbon emission goals. In the policy, bonus density is offered in exchange for new developments that commit to specific sustainability criteria.

This update to the Green Building Incentive Policy for site plan development is a significant step toward strengthening Arlington County's commitment to sustainability and carbon neutrality.

County Manager:

MJS/SFW

County Attorney:

AM

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The updates to the County’s program are detailed in **Attachment 1 – 2020 Green Building Incentive Policy** and are summarized below:

- LEED Gold is now the minimum level of green building certification required in order to receive bonus density in the program (Earthcraft is allowed for multifamily).
- In addition, all levels must do the following:
 - Include baseline items that address specific energy measures including energy and water efficient appliances, electric vehicle charging, renewable energy, ventilation performance, refrigerant leakage, and energy benchmarking.
 - Other baseline community sustainability priorities including equity, human interaction with nature (biophilia), light pollution reduction, and bird-friendly materials.
 - Meet specified energy optimization criteria to ensure energy efficiency above the LEED baseline.
 - Achieve the Energy Star Building Certification (or equivalent) post-occupancy, with increasing levels of compliance stipulated for higher FAR levels.
- The Green Building Incentive Policy adds one additional level for participation, increasing the flexibility of the program for participants. The Policy now offers five levels of participation ranging from .25 FAR to .70 FAR, each with increasing requirements for energy efficiency.
- For participation above the baseline 0.25 FAR level, projects must meet the above-noted requirements and must include a specific number of additional items selected from the “Extra” list. Items on the “Extra” list incentivize additional renewable energy, energy storage and resilience, electrification of building systems, additional energy efficiency, low carbon materials, and affordable housing.
- At the three highest levels of participation, applicants may opt to use a more stringent building certification such as Passive House, Net Zero Energy or Zero Carbon certifications.
- In order to ensure that the Policy continues to remain rigorous and in line with the Community Energy Plan goals, the Policy includes an Automatic Update that will take effect on June 30, 2023. This update will increase the minimum requirements for energy optimization specified for each level of participation.

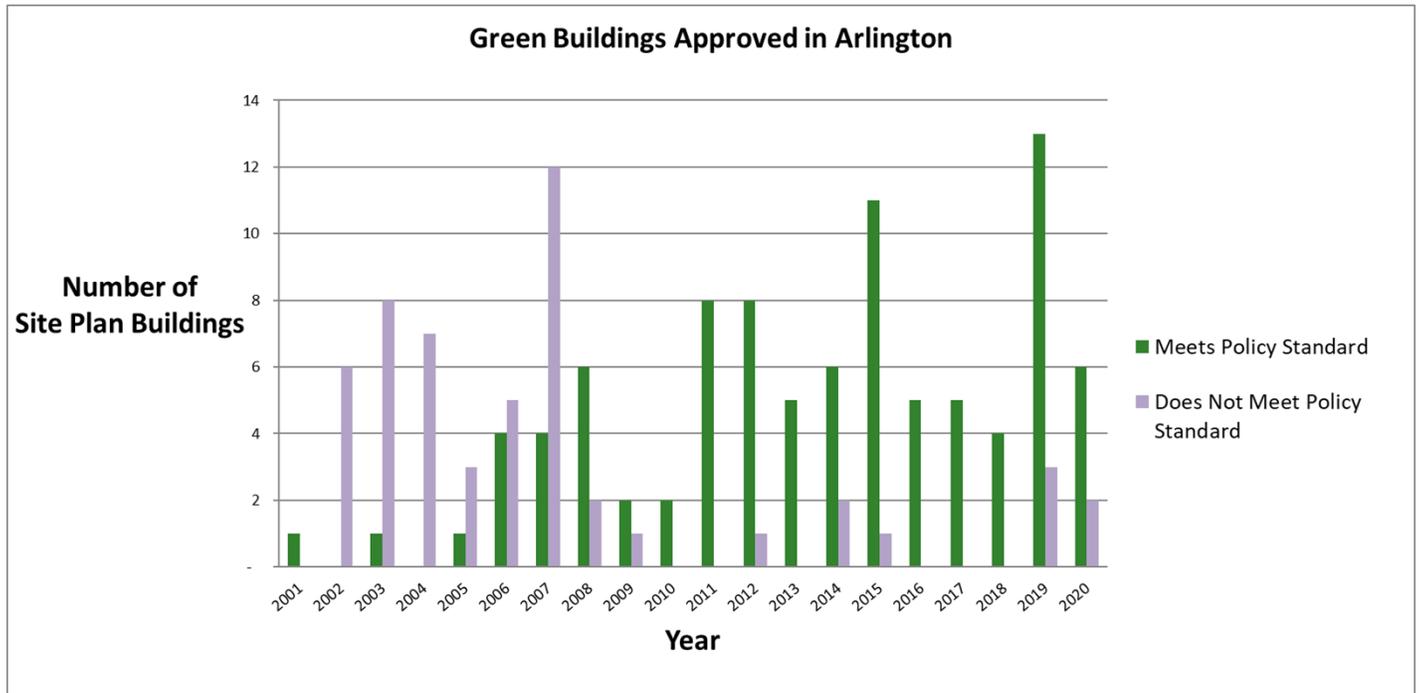
The Policy will be reviewed (and updated if appropriate) every three to five years or when the LEED green building rating system is updated to ensure that the program remains current with emerging green building technologies, national trends, and the needs of the community.

BACKGROUND: This report proposes enhancing and upgrading the Green Building Incentive Policy for site plan projects. Originally adopted in 1999 and updated in 2003, 2009, and 2012, 2014, and 2019, the Policy has been an effective tool for reducing the environmental impacts of buildings on the community. Program history is further discussed in **Attachment 2**.

The Green Building Incentive Policy has been highly valued and utilized by developers in Arlington. The following chart summarizes the site plan buildings that have been approved with bonus density in exchange for LEED certification. Since the first LEED bonus density project

was approved in 2001, 146 site plan buildings have been approved by the County Board. Of these 146 buildings, 92 have agreed to achieve LEED certification. Of these 92 buildings, 57 have completed construction, achieved their LEED commitments, and complied with the green building site plan conditions. **Figure 1** summarizes the green buildings approved in Arlington.

Figure 1



Approximately 17 million square feet of development in Arlington have been certified green in the last 20 years.

DISCUSSION: The proposed changes to the Green Building Incentive Policy are intended to incentivize exceptional energy efficient design and construction as well as efficient post-occupancy energy performance, while continuing to focus on holistically designed and constructed buildings. A higher level of energy efficiency has been incorporated into the Policy’s baseline requirement to ensure that participating developments are built to a more stringent standard than building code. This Policy advances and accelerates building energy efficiency more than any other County policy or program.

New prerequisites include renewable energy, electric vehicle charging, social equity, and other energy and community sustainability criteria. Higher levels of bonus density are earned for a commitment to exceptional energy performance standards, including Passive House or Zero Carbon certification, in addition to the incorporation other “extra” energy innovations such as renewable energy and battery storage, grid harmonization, and the electrification of building systems.

Proposed changes to Arlington’s Green Building Incentive Policy

Since the last update of the Policy in 2014, there have been many changes in technology, building codes, and the LEED rating system. The 2020 Policy update addresses these issues to ensure the Policy encourages site plan projects to strive for higher levels of energy efficiency and sustainability to support Arlington's Community Energy Plan goals. Please see the summary table on the first page of **Attachment 1 – 2020 Green Building Incentive Policy** for an overview.

The primary updates to the Policy include:

- 1) New and updated “baseline prerequisites” (see detailed criteria in Appendix 1 of Attachment 1)
 - *Energy Optimization:* The primary energy standard that is referenced by LEED is ASHRAE 90.1. This energy standard has been revised and improved over time as energy efficiency improvements gain traction in the design and construction industry. The most current energy baseline in LEED version 4.1 (which references ASHRAE 90.1-2016) is estimated to improve energy performance in buildings by 10% more than the prior energy baseline in LEED version 4 (which references ASHRAE 90.1 – 2010) for the primary building types in Arlington. If a Developer chooses to certify under LEED version 4, the development must demonstrate an energy performance improvement of at least 20%. If a Developer selects to certify under LEED version 4.1, the development must demonstrate a 10% improvement in energy performance. Either baseline can be used to achieve an equivalent result.
 - *Post-Occupancy Building Performance and Certification:* Energy models are predictive and guide the design and construction of the building. However, they do not ensure that the building will operate to the specified level of energy efficiency. All building types must comply with post occupancy energy performance standards either through Energy Star certification or by demonstrating with utility data that the project meets the LEED approved energy model's predicted energy use.
 - *Renewable Energy/Solar:* The Policy update requires applicants to install on-site solar generation (or other acceptable forms of renewable energy) equal to at least 2.0 watts per square foot of roof area. For most buildings this would result in about 15-20% of the roof area being covered by solar panels. An off-site renewable purchase option is available. For buildings without sufficient solar exposure due to unavoidable shading, a contribution to the Green Building Fund (\$4/ square foot or roof area) is permitted. This update supports Arlington's Community Energy Plan goal to increase Arlington's renewable energy resources with the installation and use of 160 megawatts (MW) of on-site solar electricity.
 - *Equity:* In keeping with the County Board's Equity Resolution (September 21, 2019), staff included a provision to support racial equity, diversity, and inclusion policies and programs within the firms on the development team. This was provision was modeled after similar criteria developed by Arlington's Department of Human Services and also used in CPHD's NOFA Guidelines.

- *Energy Star appliances:* This is a longstanding provision of the Policy and has been expanded to include clothes dryers.
 - *Electric Vehicle Charging:* All projects will include electric vehicle charging stations and electric vehicle “ready” infrastructure to support anticipated future demand for electric vehicle charging.
 - *Enhanced Ventilation:* To ensure fresh air is delivered as intended to all occupied spaces in the building, all supply and exhaust ventilation ductwork must meet enhanced sealing and performance test requirements.
 - *Refrigerant Leakage:* Refrigerants are a potent greenhouse gas emission. This new provision requires the team to have a third-party consultant oversee the on-site refrigerant charging process for any building systems to reduce refrigerant leakage.
 - *Human Interaction with Nature (Biophilia), Bird Friendly and Light pollution reduction:* In order to address how buildings interact with nature, the Policy includes three new provisions focused on the relationship between urban development and nature. First, applicants must submit a narrative describing how the project optimizes energy efficiency and environmental conservation in the community. Second, the project must minimize bird strikes by meeting specific criteria outlined by the American Bird Conservancy. Finally, minimum light pollution reduction criteria for exterior light fixtures must be met to safely reduce light pollution.
- 2) Advanced Green Building Certifications and “Extra List” options for higher levels of bonus density.
- *Passive House Construction:* At the mid-level density levels (0.45 and 0.55 FAR), the program offers the option of using the PHIUS + certification instead of LEED Gold certification. The Passive House certification focuses on building envelope integrity, ventilation, and energy efficient equipment. The Baseline Prerequisites must also be achieved.
 - *Net Zero Energy or Zero Carbon Construction:* In order to encourage site plan projects in Arlington to achieve superior levels of energy performance, 0.70 FAR bonus is offered in exchange for projects that are designed and constructed to achieve the Net Zero Energy building certification or the Zero Carbon building certification (as defined by the International Living Futures Institute) in addition to at least LEED Gold certification and the Baseline Prerequisites as part of the initial design and construction. Projects committed to Net Zero Energy or Zero Carbon certification must generate as much clean energy (on-site or off-site) as is used by the building over the course of a year.
 - *Extra List Options* (see detailed criteria in Appendix 2 of the attached policy): Items on the extra list were identified as specific performance targets and technologies that are currently not commonly implemented in Arlington but are important to reach Arlington’s Community Energy Plan Goals.

- 3) Automatic Update (see detailed criteria in Appendix 3 of Attachment 1): In order to ensure that the Policy continues to remain rigorous and in line with the Community Energy Plan goals, the Policy includes an Automatic Update that will take effect on June 30, 2023. This update will increase the minimum requirements for energy optimization specified for each level of participation.

Effective Date

The program will be effective immediately, but site plan projects accepted by the County Manager before March 31, 2021 may continue to use the 2014 version of the Green Building Density Incentive Policy. Site plan projects accepted after March 30, 2021 must use the updated Policy and associated criteria.

Regional Green Building Programs

Over the years, Arlington's program sparked interest in neighboring jurisdictions. It should be noted that Washington, D.C., and Maryland can use more stringent building codes, whereas the Dillon Rule restricts jurisdictions in Virginia from requiring a more stringent building code. Other local green building programs include:

- **Washington, D.C.**, uses the 2017 Energy Conservation Code and the International Green Construction Code (IgCC) in lieu of standard building codes. Both are more stringent codes, equivalent to LEED in many ways, with stricter energy efficiency requirements. Private commercial buildings greater than 50,000 square feet are required to achieve LEED certification at the Certified level. The city also requires green infrastructure and stormwater management for new construction and major renovations.
- **Montgomery County, Maryland**, uses the IgCC as the Building Code. As noted above, IgCC incorporates stricter energy requirements than the general building code. In addition, for buildings larger than 10,000 square feet, Montgomery County offers a property tax credit for 4 years for buildings that achieve 10% or more energy efficiency above the IgCC requirements. Additional tax credit is offered for buildings achieving LEED Gold equivalent or a more stringent green building standard
- As of June 2019, **Alexandria Virginia's** green building policy requires Site Plan and Use Permit projects to achieve LEED Silver certification with a few requirements including performance points for energy optimization, renewable energy installation, and stormwater management. The policy includes a flexibility provision so developers can ask for leniency for some of the requirements. If the project doesn't meet the LEED or the performance points, the developer must seek relief through a site plan amendment.
- **Fairfax County, Virginia**, has a countywide green building policy which emphasizes LEED Certification or its equivalent and is implemented through proffers and development conditions negotiated during the zoning process. The Fairfax policy recommends that higher than basic levels of certification be attained in certain areas. Developments in these areas seek commitments to LEED Silver or higher for nonresidential development and LEED Certified or higher for new residential development. In 2019 the Fairfax County Board of Supervisors adopted a text change to

the green building policy which places a focus on energy efficiency and conservation and reflects the desire of the Board to move toward an increased emphasis on energy efficiency.

Encouraging Market Transformation

An incentive program is needed in Arlington to encourage developers to incorporate high levels of energy efficiency and innovative energy technology into new buildings and to ensure performance post-occupancy. Because utility rates in Virginia are relatively low, it is difficult for developers to recognize an acceptable rate of return on their initial investment in buildings up front.

PUBLIC ENGAGEMENT:

Level of Engagement: The update to the Green Building Incentive Policy followed the “Involve” level of public engagement.

Outreach Methods: Over the past nine months, staff conducted extensive public engagement, meeting virtually with the following organizations and stakeholders:

- Arlington Commissions
 - Climate Change, Energy and Environment Commission (C2E2) (formerly named E2C2)
 - C2E2’s Energy Committee
 - Economic Development Commission
 - Urban Forest Commission
 - Park and Recreation Commission
 - Long Range Planning Commission
- National Association of Industrial and Office Parks (NAIOP) - working group and Arlington Committee
- Private developers
- Advisory Group (Energy Consultants, Engineers, Architects)
- Arlington Chamber of Commerce
- Washington Gas
- Dominion Energy
- Environmental Groups (EcoAction Arlington, Biophilic interests, citizens with environmental focus)

Staff also conducted an online feedback process using interactive comment software (Konveio) to collect comments. Comments with staff responses, the revised Policy based on community, and reference materials were posted on the County’s website.

Community Feedback: Comments from stakeholders and corresponding staff responses included the following:

- Nearing Net Zero/Zero Carbon: There is a significant technological leap between achieving LEED or Earthcraft certification and reaching Net Zero or Zero Carbon certification. To address this concern, staff added a “bridge” level of participation at the

0.55 FAR level that requires achieving some criteria of Zero Carbon certification, including of energy efficiency, post-occupancy energy performance, renewable energy, and purchasing carbon offsets, but at a slightly lower level than are required for certification.

- Building Electrification: This is a controversial issue, with some stakeholders promoting more electrification and others advocating for fewer electrification requirements. Originally the Policy proposed requiring electrification of buildings systems with the automatic update in June 2023. In response to concerns, staff commissioned a study by Steven Winter Associates that concluded it is technologically difficult and costly to electrify some building systems, particularly central ventilation and domestic hot water in multifamily buildings. Staff added electric heat pump alternatives for domestic hot water and for ventilation systems (in multifamily and hotel buildings only) to the “Extra” list available at the higher levels of participation.
- Electric Vehicles (EVs): In response to stakeholder input, staff increased the baseline electric vehicle charging requirement to require more EV charging stations and EV “ready” infrastructure to all buildings. The Extra List encourages additional EV charging stations and infrastructure.
- Solar/renewable energy: Including on-site solar (or other acceptable renewable energy) was introduced in this update process. Because some buildings may not lend themselves to solar panels, options were added to comply with the renewable energy requirement. These include allowing off-site solar, a lower amount of solar if the installation is co-located with a vegetated roof, and an option for a financial contribution if the roof has insufficient solar exposure (due to shading).
- Green Building Rating Systems: The National Association of Homebuilders has requested that their rating system, The National Green Building Standard, be included in the policy. The minimum criteria of the rating system was not viewed as rigorous enough to warrant inclusion in the Policy at this time.
- Community Sustainability Priorities: Community members expressed interest in incorporating broader sustainability priorities in the Green Building Incentive Policy in keeping with other County policies and commitments.
 - Human Interaction with Nature: In light of Arlington’s recent designation as a Biophilic City, a constituency of citizens expressed interest in including components addressing the interaction among the buildings, humans, and nature. Developers expressed concern about making these requirements too rigorous. In response, staff added three items to the baseline requirement, striking a balance that addresses the County’s commitment to biophilia but scales compliance so as not to discourage participation in the green building program. The first item requires applicants to submit a Biophilia Narrative describing how the site plan project optimizes energy efficiency and environmental conservation in the community and enhances existing and/or creates new natural spaces for occupants and the public to interact with nature. Additionally, the Policy seeks to minimize bird collisions by meeting the American Bird Conservancy criteria for building facades. Finally, criteria for outdoor light pollution reduction were added.
 - Social Equity: In keeping with the County Board’s Equity Resolution (September 21, 2019), staff included a provision to encourage racial equity, diversity, and inclusion policy adoption by the companies working on the development team. A

request by citizens to include the LEED Checklist for Social Impact drew resistance from the development community as being too vague and unenforceable, and thus was not included. An extra list option was added to encourage social equity in operations and maintenance staff.

Planning Commission (PC): The PC considered the proposed updates to the Green Building Incentive Policy at its meeting on December 1, 2020 and voted unanimously (12-0) in support of the County Manager's recommendation with one amendment to expand the area of the façade required to be covered by bird-friendly materials.

Long Range Planning Committee (LRPC): The LRPC considered updates to the Policy at its September 29, 2020 meeting and reported general support for the Policy update verbally at the December 1, 2020 Planning Commission meeting.

Economic Development Commission (EDC): The EDC heard a presentation on the Policy update at its September 8, 2020 meeting. EDC did not take an official vote or make recommendations.

Urban Forestry Commission (UFC): The UFC considered updates to the Policy at its meeting on September 24, 2020. In a letter dated October 26, 2020, UFC offered general support of the Policy update with the recommendation to make the biophilic narrative more robust and to strengthen the bird friendly façade criteria.

Climate Change, Energy and Environment Commission (C2E2): C2E2 considered the proposed updates at its meeting on October 26, 2020. In a letter dated November 20, 2020, C2E2 stated general support for the Policy update with two recommendations: 1) update the Policy every three years instead of every 5 years, and 2) incorporate more effective measures advancing building electrification.

FISCAL IMPACT: There are no costs to the County. There is small fiscal benefit to the County in that the additional density increases the size of the building and thus increases property taxes paid by the participating projects over the life of the building.

The Green Building Policy is voluntary for site plan applicants. Each project will determine if participation is financially beneficial. The Green Building Incentive Policy offers density in exchange for achieving high levels of environmental performance.

Attachment 2

Green Building Program History

Since the early 1960s, Arlington has made a commitment to smart growth, primarily through Metro-oriented development planning and land use policies in the General Land Use Plan. In an effort to reduce the environmental impacts of increasing development along the Metro corridors, Arlington adopted the Green Building Incentive program for site plan projects. The US Green Building Council's LEED green building rating system was the primary tool used to guide green development. For the past 20 years, Arlington County government has used the LEED green building rating system to guide the design and construction of new public facilities and Arlington Public Schools (APS) also uses LEED to guide new school construction. In recent years, Arlington has adopted the use of other stringent green building rating systems with a focus on energy efficiency such as Earthcraft, Passive House, Net Zero Energy and Zero Carbon certifications. Together with the Energy Star Label to measure ongoing energy performance, Arlington's green building program continues to be a successful tool to incentivize energy efficient and environmentally responsible construction.

Arlington's original Pilot Green Building Incentive Program (adopted in October 1999) applied only to commercial office space and offered up to 0.25 FAR bonus density in exchange for obtaining a LEED Silver certification from the USGBC. The program was nationally recognized as being an innovative approach to encouraging green building. However, County staff found that the original program excluded developers who were interested in incorporating green building components but who were not prepared to achieve the LEED Silver rating.

In 2003, the County's green building program for site plans was updated and strengthened. The original program did not apply to multi-family residential projects, rehabilitation of existing buildings or other types of site plan development, even though the LEED rating system can be used to enhance and measure the "greenness" of these types of projects. The 2003 revision encouraged all site plan projects (not just commercial office) to participate in the voluntary incentive program, and the program was expanded to include the full range of LEED awards (including Certified, Silver, Gold, and Platinum). Density could be requested in an amount commensurate with the applicant's level of commitment to sustainable building (ranging from a maximum of 0.15 FAR for baseline LEED Certified projects to a maximum of 0.35 FAR for a LEED Gold or Platinum project).

The 2009 update to the green building bonus density program reduced the amount of bonus offered for LEED Certified and Silver projects since market transformation made it easier to achieve these levels of LEED certification. The update also incorporated an additional 0.05 FAR bonus for residential buildings (high-rise multi-family apartments and condominiums) over the baseline bonus offered for office. The additional bonus for residential projects was added because it is more difficult for residential projects to achieve some of the LEED credits, as compared to office buildings. This small additional bonus has resulted in all participating residential site plan projects committing to LEED Silver certification or above since 2009.

In 2012, the program update focused on improving the energy efficiency of site plan projects by incorporating a minimum level of energy savings for office buildings (20% above the established LEED energy baseline) and multi-family residential buildings (18% above the LEED baseline). An additional 0.10 FAR was offered to projects committing to the LEED certification and minimum energy savings plus the Energy Star building certification or LEED for Existing Buildings (LEED-EB) certification, both of which are based on actual energy use. Finally, the program asked site plan projects to report utility data after occupancy each year for 10 years.

The program was once again updated in 2014 to include post-occupancy Energy Star certification for office buildings, with an option for residential projects to earn a small amount of additional bonus in exchange for Energy Star certification. The County specified “Arlington Priority Credits” which would earn the project up to 0.05 FAR additional density. The Priority Credits covered energy and environmental issues that had particular significance to Arlington. In this update, affordable housing projects receiving tax credits from the Virginia Housing Development Authority were permitted to use the Earthcraft rating system in place of LEED. Additional density could be negotiated if a project committed to certification using the Net Zero Energy program, sponsored by the International Living Futures Institute (ILFI).

A minor update in 2019 allowed the Zero Carbon certification to be used in lieu of the Net Zero Energy certification.

Attachment 1 - 2020 Green Building Incentive Policy (December 2020)

Arlington County’s Green Building Bonus Density Incentive Policy is a voluntary program to evaluate special exception site plan requests for bonus density consistent with Section 15.5.7.A.1 of Arlington County’s Zoning Ordinance. All site plan project developers are encouraged to include specific green building components in site plan projects and to commit to becoming certified under the U.S. Green Building Council’s (USGBC) LEED Version 4 or Version 4.1 program, or Earthcraft Multifamily program. Additionally, all projects are encouraged to achieve Energy Star certification post-occupancy. Arlington offers potential levels of bonus density (as measured in Floor Area Ratio (FAR)) when the developer commits to specific sustainability criteria as follows:

0.25 FAR	0.35 FAR	0.45 FAR	0.55 FAR	0.70 FAR
<ul style="list-style-type: none"> • LEED Gold 4 or 4.1 • Energy Optimization Performance Improvement • Baseline Prerequisites • ENERGY STAR Score 75 – or- LEED site EUI performance verification 	<ul style="list-style-type: none"> • LEED Gold 4 or 4.1 • Energy Optimization Performance Improvement • Baseline Prerequisites • ENERGY STAR Score 80 – or- LEED site EUI performance verification • 3 Items from <i>Extra list</i> 	<p>Option 1:</p> <ul style="list-style-type: none"> • LEED Gold 4 or 4.1 • Energy Optimization Performance Improvement • Baseline Prerequisites • ENERGY STAR Score 85 – or- LEED site EUI performance verification • 4 Items from <i>Extra List</i> <p>Option 2:</p> <ul style="list-style-type: none"> • Baseline Prerequisites • Passive House (PHIUS) certification 	<p>Option 1:</p> <ul style="list-style-type: none"> • LEED Gold 4 or 4.1 • Energy Optimization Performance Improvement • Baseline Prerequisites • ENERGY STAR Score 90 – or- LEED site EUI performance verification • 6 Items from <i>Extra List</i> including: <ul style="list-style-type: none"> ○ Energy Optimization ○ Renewable Energy plus Storage • Carbon Offsets (ILFI reference) <p>Option 2:</p> <ul style="list-style-type: none"> • Baseline Prerequisites • Passive House (PHIUS) certification • Carbon Offsets (ILFI reference) • Renewable Energy plus Storage from <i>Extra List</i> 	<ul style="list-style-type: none"> • LEED Gold 4 or 4.1 • Energy Optimization Performance Improvement • Baseline Prerequisites • Zero Energy – or – Zero Carbon certification

Minimum Criteria for 0.25 bonus FAR

1) Green Building Certification

Multifamily:

- LEED Multifamily version 4.1 Gold certification, LEED for Homes Midrise version 4 Gold certification, or Earthcraft Multifamily Gold certification for multifamily development -or-

Non-residential Commercial:

- LEED version 4 or 4.1 Gold Certification (office, hotel, university, etc.)

2) Energy Optimization

Meet the criteria that would earn the project points as part of the green building certification as follows:

- At least 10% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
-or-
- At least 20% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
-or-
- HERS index of 65 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
-or-
- HERS index of 65 or lower if pursuing Earthcraft Multifamily certification

3) Post-Occupancy Building Performance and Certification

Within four years of occupancy:

- Earn ENERGY STAR post-occupancy building certification with a score of at least 75
-or-
- Demonstrate with energy utility data that the design site EUI identified in the energy model as part of the building's LEED certification has been met with the building at least 70% occupied (12-month average occupancy)

4) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.

Minimum Criteria for 0.35 bonus FAR

1) Green Building Certification

Multifamily:

- LEED Multifamily version 4.1 Gold certification, LEED for Homes Midrise version 4 Gold certification, or Earthcraft Multifamily Gold certification for multifamily development -or-

Non-residential Commercial:

- LEED version 4 or 4.1 Gold Certification (office, hotel, university, etc.)

2) Energy Optimization

Meet the criteria that would earn the project points as part of the green building certification as follows:

- At least 10% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
- or-
- At least 20% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
- or-
- HERS index of 65 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
- or-
- HERS index of 65 or lower if pursuing Earthcraft Multifamily certification

3) Post-Occupancy Building Performance and Certification

Within four years of occupancy:

- Earn ENERGY STAR post-occupancy building certification with a score of at least 80
- or-
- Demonstrate with energy utility data that the design site EUI identified in the energy model as part of the building's LEED certification has been met with the building at least 70% occupied (12-month average occupancy)

4) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.

5) Incorporate into the project at least 3 items from the "Extra" List outlined in Attachment 2.

Minimum Criteria for 0.45 bonus FAR

- 1) Green Building Certification
Multifamily:
 - LEED Multifamily version 4.1 Gold certification, LEED for Homes Midrise version 4 Gold certification, or Earthcraft Multifamily Gold certification for multifamily development -or-Non-residential Commercial:
 - LEED version 4 or 4.1 Gold Certification (office, hotel, university, etc.)
 - 2) Energy Optimization
Meet the criteria that would earn the project points as part of the green building certification as follows:
 - At least 15% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
 - or-
 - At least 25% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
 - or-
 - HERS index of 58 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
 - or-
 - HERS index of 58 or lower if pursuing Earthcraft Multifamily certification
 - 3) Post-Occupancy Building Performance and Certification
Within four years of occupancy:
 - Earn ENERGY STAR post-occupancy building certification with a score of at least 85
 - or-
 - Demonstrate with energy utility data that the design site EUI identified in the energy model as part of the building's LEED certification has been met with the building at least 70% occupied (12-month average occupancy).
 - 4) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.
 - 5) Incorporate into the project at least 4 items from the "Extra" List outlined in Attachment 2.
- or-**
- 1) Green Building Certification
For any building type:
 - PHIUS+ 2018 certification
 - 2) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.

Minimum Criteria for 0.55 bonus FAR

- 1) Green Building Certification
Multifamily:
 - LEED Multifamily version 4.1 Gold certification, LEED for Homes Midrise version 4 Gold certification, or Earthcraft Multifamily Gold certification for multifamily development -or-Non-residential Commercial:
 - LEED version 4 or 4.1 Gold Certification (office, hotel, university, etc.)
- 2) Energy Optimization
Meet the criteria that would earn the project points as part of the green building certification as follows:
 - At least 15% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
 - or-
 - At least 25% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
 - or-
 - HERS index of 58 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
 - or-
 - HERS index of 58 or lower if pursuing Earthcraft Multifamily certification
- 3) Post-Occupancy Building Performance and Certification
Within four years of occupancy:
 - Earn ENERGY STAR post-occupancy building certification with a score of at least 90
 - or-
 - Demonstrate with energy utility data that the design site EUI identified in the energy model as part of the building's LEED certification has been met with the building at least 70% occupied (12-month average occupancy)
- 4) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.
- 5) Incorporate into the project at least 6 items from the "Extra" List outlined in Attachment 2 including:
 - "Additional Energy Optimization"
 - "Renewable Energy plus Storage"
- 6) Purchase Carbon Offsets that meet the criteria of the International Living Future Institute (ILFI) Zero Carbon Certification:
 - One-time carbon offsets must be secured that are equivalent to the total embodied carbon emissions associated with the project scope. Acceptable forms of carbon offsets include Certified Emission Reduction (CER) and Verified Emission Reduction (VER) carbon credits; Renewable Energy Certificates (RECs) are not acceptable.
 - Carbon offsets must be certified by Green-e Climate (www.green-e.org), or an equivalent program. Other certification programs must be submitted to the Dialogue for approval.
 - Carbon offsets may also be generated anywhere in the world; offsets do not have to be local, although local or community-based solutions that provide additional socioeconomic benefits are encouraged.

- The amount of carbon offsets shall be calculated using the methodology outlined in ILFI's Zero Carbon Certification.

-or-

- 1) Green Building Certification
For any building type:
 - PHIUS+ 2018 certification
- 2) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.
- 3) Incorporate into the project "Renewable Energy plus Storage" as outlined in Attachment 2.
- 4) Purchase Carbon Offsets that meet the criteria of the ILFI's Zero Carbon Certification:
 - One-time carbon offsets must be secured that are equivalent to the total embodied carbon emissions associated with the project scope. Acceptable forms of carbon offsets include Certified Emission Reduction (CER) and Verified Emission Reduction (VER) carbon credits; Renewable Energy Certificates (RECs) are not acceptable.
 - Carbon offsets must be certified by Green-e Climate (www.green-e.org), or an equivalent program. Other certification programs must be submitted to the Dialogue for approval.
 - Carbon offsets may also be generated anywhere in the world; offsets do not have to be local, although local or community-based solutions that provide additional socioeconomic benefits are encouraged.
 - The amount of carbon offsets shall be calculated using the methodology outlined in ILFI's Zero Carbon Certification.

Minimum Criteria for 0.70 bonus FAR

1) Green Building Certification

Multifamily:

- LEED Multifamily version 4.1 Gold certification, LEED for Homes Midrise version 4 Gold certification, or Earthcraft Multifamily Gold certification for multifamily development -or-

Non-residential Commercial:

- LEED version 4 or 4.1 Gold Certification (office, hotel, university, etc.).

2) Energy Optimization

Meet the criteria that would earn the project points as part of the green building certification as follows:

- At least 15% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
-or-
- At least 25% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
-or-
- HERS index of 58 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
-or-
- HERS index of 58 or lower if pursuing Earthcraft Multifamily certification

3) Post-Occupancy Building Performance and Certification

Within four years of occupancy earn one of the following performance-based certifications:

- Zero Carbon certification by the International Living Future Institute -or-
- Zero Energy certification by the International Living Future Institute -or-
- Other Zero Carbon or Zero Energy certification or equivalent certification as approved by the County Manager

4) Incorporate into the project all other baseline prerequisites as outlined in Attachment 1.

Appendix 1- Baseline Prerequisites

ENERGY STAR appliances and fixtures

ENERGY STAR label for all clothes washers, dryers, refrigerators, dishwashers, and at least 90% LED or ENERGY STAR labeled light fixtures installed in residential and hotel units

WaterSense Plumbing Fixtures

WaterSense label for all toilets, bathroom faucets, and showerheads installed in residential and hotel units

Refrigerant Leakage

In addition to the energy code requirements for commissioning activities, the Commissioning Agent shall oversee the on-site refrigerant charging process and verify the following:

- Collect as-built refrigerant piping line length calculations (as-designed lengths will not be accepted)
- Collect and review the detailed refrigerant pipe pressure and vacuum testing reports that have been based on the as-built calculations for completeness and accuracy
- Collect the charge confirmation documentation

Equity, Diversity, and Inclusion program

At least one member of the development team shall be employed by an organization with a racial and ethnic diversity, equity, and inclusion program within its management operations. Specifically, the firm's program shall include:

- Staff training plan that reflects the firm's understanding of structural racism and its intersection with the building industry.
- Professional development opportunities and data-driven policies used to identify and invest in staff diversity among leadership levels.
- Strategies in place to ensure racial and ethnic inclusion at all levels of the organization, including the Board of Directors level.

Document compliance with a written description of how the firm implements and institutionalizes diversity through policy, management philosophy, and training. Describe how the firm, on a day-to-day basis, fosters a work environment that is inclusive and conducive to diverse staff. Include copies of personnel and other relevant policies, training provided to staff, description of the general management philosophy as it relates to diversity.

Energy Benchmarking

Permanently install energy meters or monitoring devices and software service capable of tracking and remote download of at least monthly electric and gas consumption for the entire building. Utility billing data may be used as an alternative if the owner receives energy utility bills for all energy uses in the building directly from the utility. After occupancy, provide utility reporting data through Energy Star Portfolio Manager each year for 10 years.

Air Sealing of Ventilation Supply and Exhaust

To ensure fresh air is delivered as intended to all occupied spaces in the building, seal all central vertical and horizontal supply ductwork with aerosolized duct sealant. All code requirements for joints, sealants, and connections must be met.

-and-

For commercial and multifamily buildings, meet the criteria for central ventilation exhaust testing and performance as required by Energy Star Multifamily High-Rise certification.

Electric Vehicle Charging Infrastructure

Exceed the criteria that would earn the project points for LEED version 4.1 credit Electric Vehicles option 1- Electric Vehicle Charging and option 2 - Electric Vehicle Charging Infrastructure, with electric vehicle charging stations for at least 4% of parking spaces and electric vehicle infrastructure for at least 15% of parking spaces.

Human Interaction with Nature (Biophilia)

Provide a narrative describing how the project enhances existing and/or creates new natural spaces for occupants and the public to interact with nature and creates habitat for people, plants and wildlife.

Components to be evaluated include (but are not limited to):

- Enhance connections between humans and nature at the ground level and as part of the building
 - Provide opportunities to interact with nature at the ground level
 - Provide opportunities to interact with nature as part of the building (indoor gardens, green walls, atria, balconies, roof amenity space, etc.)
 - Enhance views of nature and green spaces
 - Provide access to water, where possible
 - Provide views of the sky
 - Create access to nature sounds
 - Create linkages to existing natural resources and adjoining open space (physical or visual connections)
- Create or expand natural habitats
 - Plant native trees and plants (including pollinator gardens, butterfly gardens, bird nesting areas, meadows, etc.)
 - Show that the Project meets or exceeds tree canopy requirements stipulated in the applicable sector plan
- Use natural forms and materials in design and construction
- Provide energy and environmental conservation co-benefits
 - Renewable energy (solar) access
 - Shading of outdoor space
 - Mitigate heat island
 - Reduced stormwater runoff (minimize impervious area)
 - Minimized air quality impacts (indoor – low VOC materials, minimize natural gas combustion; and outdoor – bike parking, EV charging)

Bird-friendly Materials

A bird friendly material is defined as a building material or assembly that has, or has been treated to have a maximum threat factor of 30 in accordance with the American Bird Conservancy Bird Collision Deterrence Material Threat Factor Reference Standard, or with the American Bird Conservancy Bird-friendly Materials Evaluation Program at Carnegie Museum's Avian Research Center test protocol, or with a relevant ASTM standard.

The exterior wall envelope, and any associated openings, shall be constructed with bird friendly materials between 8 feet and 36 feet above grade. Alternatively, the exterior wall envelope between 8 feet and 36 feet above grade, and any associated openings, shall on a weighted average be constructed to achieve a maximum total building Bird Collision Threat Rating (BCTR) of 15 or less according to the methodology of LEED credit Bird Collision Deterrence. Materials other than bird friendly materials shall not exceed an aggregate of 10 square feet within any 10 feet by 10 feet square area of exterior wall between 8 and 36 feet above grade.

Renewable Energy

- i. Provide on-site solar generation (or other acceptable forms of renewable energy) equal to at least 2.0 watts per square foot of the roof area (including mechanical area) -or-
- ii. Co-locate an integrated vegetated roof and solar whereby vegetated roof meets Virginia DEQ BMP standards and is equal to at least 12% of the roof area (including mechanical area) -and- on-site solar generation (or other acceptable forms of renewable energy) is equal to at least 1.5 watts per square foot of the roof area (including mechanical area) -or-
- iii. Procure off-site solar ((or other acceptable forms of renewable energy) to meet the criteria that would earn the project at least one point for renewable energy procurement of Tier 2 renewable energy as outlined in LEED version 4.1 Energy and Atmosphere credit Renewable Energy.
- iv. Alternative Compliance Path for Developments without sufficient solar exposure - Developments without sufficient solar exposure due to shading by surrounding development shall contribute to the Green Building Fund in the amount of \$4/s.f. roof area (including mechanical equipment). Insufficient solar exposure is defined as having a Total Solar Resource Fraction (TSRF) or equivalent solar industry metric of less than 80% for square footage of roof area needed to accommodate the minimum required solar PV array. A request to qualify for the alternative compliance path must include a report prepared by a qualified solar professional that documents insufficient TSRF.

Light pollution reduction

At least 90% of exterior fixtures, excluding streetlights required by the County, shall meet the following specifications and have motion sensor controls, integrative photovoltaic cells, photosensors or astronomic time-clock operation. Note, Dark Sky-approved “Friendly Fixture” certification automatically meets the following specifications.

- Luminaires shall be fully shielded emitting no light above 90 degrees (with the exclusion of incidental light reflecting from fixture housing, mounts, and pole). The luminaire’s mounting hardware shall not permit mounting in any configuration other than those maintaining full shielding.
- Fixture shall have no sag or drop lenses, side light panels, up-light panels.
- Fixture shall employ warm-toned (3000K and lower) white light sources or may employ amber light sources or filtered LED light sources.

Note: Exterior emergency lighting and lighting required by code for health and safety purposes are exempt shall be permitted to be exempted.

Appendix 2 - Extra List Options

Envelope Commissioning and Air Leakage Test (whole building)

Meet the criteria that would earn the project at least two (2) points for LEED version 4.1 EA credit Enhanced Commissioning Option 2 Building Enclosure Commissioning

-and-

Complete a pressure test of the building enclosure performed in accordance with industry standards per ASTM E779 and E1827 testing methods and achieve air tightness of 0.40 cfm/sf ft @ 75 Pa or lower.

Renewable Energy

- i. Provide on-site solar generation (or other acceptable forms of renewable energy) equal to at least 4.0 watts per square foot of the roof area (including mechanical area) -or-
- ii. Co-locate integrated vegetated roof and solar whereby vegetated roof meets Virginia DEQ BMP standards and is equal to at least 12% of the roof area (including mechanical area) -and- on-site solar generation (or other acceptable forms of renewable energy) is equal to at least 3.5 watts per square foot of the roof area (including mechanical area) -or-
- iii. Procure off-site solar to meet the criteria that would earn the project at least three points for renewable energy procurement of Tier 2 renewable energy as outlined in LEED version 4.1 Energy and Atmosphere credit Renewable Energy.

Additional Energy Optimization

Improve energy performance by an additional 5% beyond the minimum bonus density requirement for LEED version 4 or 4.1 Energy Optimization/Annual Energy Performance or 5 points lower on the HERS index.

Renewable Energy plus Storage

Install on-site renewable energy equal to at least 8 watts per square foot of the roof area (including mechanical equipment) -and- battery storage programmed for daily peak load shaving at least 1 watthour per square foot of building GFA.

Electric Vehicle Charging Infrastructure

Exceed the criteria that would earn the project points for LEED version 4.1 credit Electric Vehicles option 1- Electric Vehicle Charging and option 2 - Electric Vehicle Charging Infrastructure, with electric vehicle charging stations for at least 10% of parking spaces and electric vehicle infrastructure for at least 50% of parking spaces.

Advanced Energy Metering

Meet the criteria that would earn the project at least one (1) point for LEED version 4.1 EA credit Advanced Energy Metering.

Building or Building Materials Reuse

Meet the criteria that would earn the project at least two (2) points for LEED version 4.1 MR credit Building Life Cycle Impact Reduction.

Grid Harmonization

Meet the criteria that would earn the project at least two (2) points for LEED version 4.1 EA credit Grid Harmonization.

Grid Optimal

Meet the criteria that would earn the project at least two (2) points for LEED version 4.1 EA pilot credit Grid Optimal.

No Combustion in Domestic Hot Water Heating (multifamily and hotel only)

Include in the project electric heat pump or ground source heat pump, or other non-combustion-based technologies for domestic hot water heating. Electric resistance heating as the primary heating source is not considered an acceptable strategy to meet the criteria for this “Extra” list item.

No Combustion in Ventilation (multifamily and hotel only)

Include in the project a centralized or decentralized ventilation system utilizing energy recovery, electric heat pump, ground source heat pump, or other combination of strategies that eliminate the inclusion of combustion for heating (including preheat or emergency heating) of ventilation air. Electric resistance heating as the primary heat source is not considered an acceptable strategy to meet the criteria for this “Extra” list item.

Affordable Housing (multifamily only)

Meet the criteria that would earn the project at least one (1) point for LEED version 4.1 LT credit High Priority Site and Equitable Development, Option 2, path 2 Affordable Housing in Residential or Mixed-Use Projects.

Social equity within the operations and maintenance staff

Meet the criteria that would earn the project at least one (1) point for LEED version 4 Pilot credit Social Equity within the operations and maintenance staff, Option 1, path 1. Demonstrate criteria have been met by the property management company in place at the time of tenant occupancy.

Appendix 3 – Automatic Update

Any project accepted by the County Manager after June 30, 2023 shall meet the following revised criteria:

Energy Optimization

For the 0.25 and 0.35 FAR bonus levels, meet the criteria that would earn the project points as part of the green building certification as follows:

- At least 14% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
-or-
- At least 24% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
-or-
- HERS index of 60 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
-or-
- HERS index of 60 or lower if pursuing Earthcraft Multifamily certification

For the 0.45 and higher FAR bonus levels, meet the criteria that would earn the project the following:

- At least 18% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
-or-
- At least 28% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
-or-
- HERS index of 55 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
-or-
- HERS index of 55 or lower if pursuing Earthcraft Multifamily certification

Appendix 4 - Process and Implementation

Several components of the Green Building Incentive Policy warrant clear explanation.

- *Green Affordable Housing:* In order to offset the cost of construction and documentation of high performing “green” affordable housing units, any affordable housing project receiving tax credits from Virginia Housing (formerly VHDA) may request bonus density in exchange for a commitment to the criteria outlined in this policy, including all baseline prerequisites. Each project will be evaluated on a case-by-case basis for applicability. Affordable Housing site plan developments not requesting bonus density are expected to meet LEED Multifamily or Midrise, or Earthcraft Gold certification to ensure residents benefit from the improved indoor air quality and energy efficiency benefits of green buildings.
- *Green Building Fund:* Site plan projects that do not commit to LEED certification or Energy Star certification shall contribute to the Green Building Fund in the amount of \$0.45 /s.f. of building GFA. The contribution will be refunded or waived if a developer applies for and receives LEED or Energy Star certification within 18 months after the last Certificate of Occupancy (CO) is issued. Bonus density projects without sufficient solar exposure as defined in Appendix 1 shall make a contribution to the Green Building Fund in the amount of \$4/s.f. of roof area. Contributions to the Green Building Fund may be used by the County for green building education, including energy efficiency and renewable energy programming.
- *Units per acre to FAR calculation:* The methodology for determining the units per acre for LEED bonus calculations is as follows:
 - Determine the floor area attributed to LEED bonus FAR (example - for LEED Silver, multiply 0.25 by the site area).
 - Divide this bonus floor area by the average gross unit size in the proposed development to determine the number of units attributed to the LEED bonus.
 - Divide the number of units attributed to the LEED bonus by the site area.
- *Site Plans without green building bonus density:* For site plan projects not participating in the Green Building Incentive program, the standard site plan condition will require LEED version 4 or 4.1 Silver certification. In addition, the condition will specify ten years of energy reporting and the project will be designed to meet the minimum energy optimization performance as follows:
 - At least 10% performance improvement for LEED version 4.1 EA credit Optimize Energy Performance
 - or-
 - At least 20% performance improvement for LEED version 4 EA credit Optimize Energy Performance/Annual Energy Use
 - or-
 - HERS index of 65 or lower if pursuing LEED version 4.1 Multifamily EA credit Optimize Energy Performance Option 3 HERS index rating
 - or-

- HERS index of 65 or lower if pursuing Earthcraft Multifamily certification
- *Enforcement* - Enforcement of the Green Building incentive policy will continue to require the developer to post a financial security prior to issuance of the partial Certificate of Occupancy for the last floor of space. In general, the financial security is calculated based on the square feet of bonus density approved multiplied by the average rental rate for space in the specific area of the County (as calculated by Arlington County’s Real Estate Section). The amount of the financial security will be divided in two parts: a) 50% will be held until the LEED certification is achieved; and b) 50% will be held until the Energy Star certification (or equivalent) is achieved. Each certification will be guaranteed with a separate Performance Agreement and Financial Security. If a project fails to achieve the promised LEED certification within 24 months and Energy Star certification within 48 months of occupancy, the financial security amount(s) defaults to the County as follows.

<u>Points missed</u>	<u>Percentage of financial security forfeited</u>
<u>1-2</u>	<u>25%</u>
<u>3-4</u>	<u>50%</u>
<u>5-6</u>	<u>75%</u>
<u>7+</u>	<u>100%</u>

- *Green Building Rating System:* The policy requires that the LEED Building Design and Construction rating system be used for commercial construction (e.g., office, hotel, university, multi-family exceeding 20 stories). Multifamily developments less than 20 stories shall choose between the LEED Multifamily (Version 4.1), LEED for Homes Midrise (Version 4), or Earthcraft Multifamily rating systems. This applies to all site plans, including site plans that do not request bonus density.
- *Single Family Homes:* Site plans with single family and townhome construction may use Arlington’s Green Home Choice certification program.
- Baseline prerequisites for each project will be evaluated on a case-by-case basis for applicability, taking into account site location, existing building renovations, building type, building size, etc.
- For site plans with multiple buildings, all buildings on the site must commit to earn the agreed upon LEED certification level in order to earn the full green building FAR bonus.