Green Building Incentive Program

C2E2 Briefing Deck

DES – Office of Sustainability and Environmental Management/AIRE
March-25-2024

Agenda, GBIP 2024 Updates

1. Challenge – past approach is not sustainable and leaves market Gaps
2. GBIP 2024 Proposal
3. New Proposal Elements and Purpose
4. Why Introduce Financial Incentives
5. Summary of Alternate 2024 GBIP Proposal / Demonstration Tables
6. Introducing adaptive reuse pathways and incentives for LEED and
7. PHIUS certification (incl. design/construct cost premiums
8. Recommendations, Communications Plan and Next Steps

CHALLENGE -Sustainable Leadership, Program Effectiveness, and Changing Markets

Developer Interest is Waning

- **Developer financial models** – short investment timelines and near-term turnovers
  - Bonus Density prolongs profitability timelines
- **"Simpler" pathways** exist (i.e., bonus density through affordable housing)
- Density common mechanism is **additional height**
  - Generates unique political, ecological, social challenges

CEP and Climate Challenges

- Emphasis on LEED® ignores **large gaps** between LEED energy modeling and actual performance (intrinsic shortfalls in energy efficiency and GHG reductions)
- GBIP has not addressed energy **inefficiency** and **carbon sinks** in the large inventory of ***existing*** buildings
- GBIP is the primary vehicle for building-based energy efficiency and emissions reductions in the private sector (commercial/multifamily = **39% of all community GHG emissions**)
- Average GBIP building performance improvement over Building Code is 30%

2024 GBIP PROPOSAL

Overarching goals that drove the 2024 Design Proposal: Evolution of the Program for climate, innovation and leadership, broader application, and economic stimulus:

- **Streamlines LEED® Options**
- Focus on **PHIUS** (Climate Adaptation Model) – certified, not modeled
- Introduction of **Existing Buildings Pathway**
- Introduction of an **Adaptive Reuse Pathway**
- **Tiered financial incentives –** managing mechanisms (e.g., caps, limited terms)
- **Pre-Launch Education-Training Program** for developers, building owners, contractors, architects, etc.
- **Modular, Flexible Program Structure** – can be rolled out sequentially or bundled, rather than all elements simultaneously
- **Grant-Project Structure** with ability to cap annual funds available for incentive-qualifying projects

What is New in the GBIP 2024 Proposal: Streamlining, Strategy, and Structural Flexibility

Streamlining

- New Construction – streamline tiers and reduce endless "menu" measures

Elevate/Accelerate Strategic Goals

- **PHIUS** (Climate Adaptation Model) – certified, not modeled and eliminates on-site fossil-fuel based systems
  - Studies indicate Arlington's average improvement in EUI between the GBIP performance under LEED and baseline Code is roughly 32%; while PHIUS studies (Philadelphia and Massachusetts) indicate 55%-57% improvement
- Introduction of **Existing Buildings Pathway** – buildings most in need of performance upgrades, revisioning and revitalization
- Introduction of the **Adaptive Reuse Pathway**

Structural Flexibilty

- Tiered financial incentives with limited terms
  - Majority of financial incentives will come **due 3-4 years following 30% design plans**
  - Sub-Programs w/ Financial Programs can be structured similar to a grant program; can include caps on number of projects, cumulative incentive caps, ranking criteria and prioritization, etc.
- **Pre-Launch Education-Training Program** e.g., PHIUS design, costs and recoupment, adaptive reuse

Why Introduce Financial Incentives?

Use of Financial Incentives

- Bonus Density alone is declining as a persuasive incentive
- Financial incentives are driving green building programs in the region and elsewhere for new and existing buildings, e.g., Montgomery County
- There is no other compelling incentive for existing buildings or "energy performance" based new design/construction (PHIUS)
  - Proposal still keeps bonus density as only incentive for LEED®
- Governor's Executive Order directive to cut existing VA Building Code "by at least 25%" (vague, little information currently available)
- Financial incentives have the potential to develop more valuable buildings and higher future property tax revenue

Benchmarking / Mini-Lit Review

- **Montgomery County, MD**. Enacted Green Building Tax Credit Program in 2020; sunsets Jan-1-2025. Two-tier, allowing for variable credits (unlike VA), going from 25% to 75%, depending upon baseline energy reduction and certifications (not modeled). Term for credit is 4 years; 5 if the building attains most recent Living Building certification.
- **City of Baltimore, MD**. In 2013, adopted NGBS classifications for 5-year tax credits ranging from 50% - 80% (Silver, Gold, Emerald) for multifamily buildings.
- **City of Frederick, MD.** In 2014, adopted High-Performance Building Tax Credit of 25%-75% scaled to ratings under LEED-BD+C, LEED-ID+C or LEED-Homes, all for 5 years; or under LEED-O&M, 10% (3 years), 25% (3 years) or 50% (5 years). The ordinance established annual caps.
- **Howard County, MD.** For new commercial buildings, tax credits of 25%, 50% and 75% for 5 years, scaled on NGBS Silver, Gold and Emerald; and for existing commercial buildings, 10%, 25% and 50% for 3 years.

- *Separate benchmarking review specifically related to adaptive reuse incentives is available.*

Controls on Use of Incentives

- New Construction LEED – Bonus Density incentive only
- Financial incentives
  - Nominal incentives toward feasibility studies and modeling – up to $25,000
  - **New Construction PHIUS**
    - payable one-time incentive at completion and certification of Project
  - **Existing Buildings ENERGY STAR** – upon certification, incentives paid annually for up to 5 years, contingent on certification
  - **Adaptive Reuse** – one-time incentive paid upon certification of Project

- Grant Program Structure for Pilot w- Financial Certainty and Management
  - Cap annual funds available for each financial incentive category, this will also fix annual incentives budgeting for initial year and, if applicable, up to 4 additional years
  - Initial Project Incentive is not payable until competition and certification of Project
  - Best-effort / experienced projection for the GBIP Innovation Pilot **(2025-2029 combined**)
    - Two PHIUS New Construction Projects 2025-2029
    - Five (5) Existing Buildings Projects 2025-2029
    - Three (3) Adaptive Reuse Projects 2025-2029

Summary of Updated Arlington 2024 GBIP Proposal

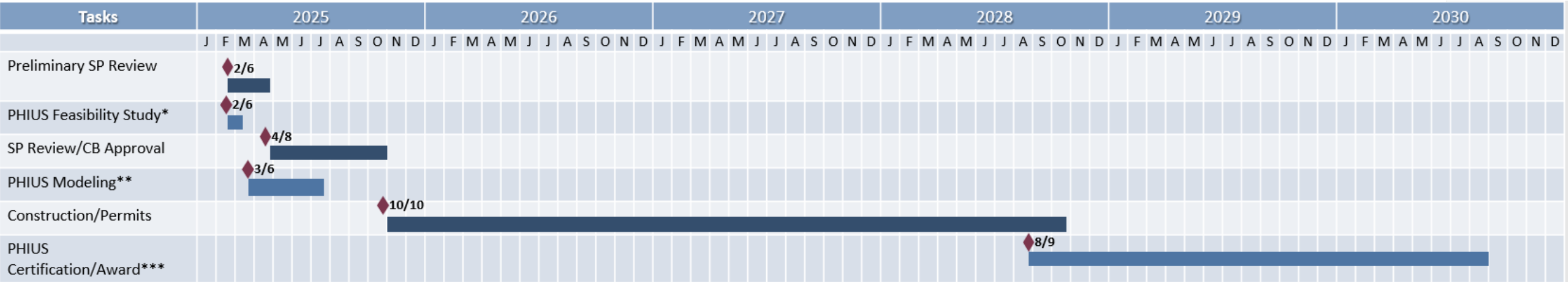
Type of construction	Pathway designation	Green building certifications required	GBIP Baseline Prerequisites required?	Incentive proposed	Incentive duration	Reasoning
New construction	Traditional Pathway	LEED BD+C v4 Platinum or v5 Gold	yes	Bonus density (.25, .35, .45, or .55 FAR)	N/A	**Market familiarity**: builds on and advances the carbon-reduction goals of the 2020 GBIP
	Climate Adaptation Pathway	PHIUS ZERO + County green infrastructure requirements	no	.25 FAR bonus density + funding for initial feasibility study ($5k) and PHIUS modeling ($20k) + $2 per SF award upon project certification	N/A	**Proven performance** in carbon reduction, energy efficiency, indoor environmental quality, and sound attenuation; local **green infrastructure requirements target County vulnerabilities**; gaining ground as **more stringent** "reach option" vs. LEED (Boston now requires PHIUS for all multifamily construction)
Existing buildings (projects at least 5 years after receipt of final CoO that undertake upgrades/retrofits are eligible)	Existing Buildings Pathway: ENERGY STAR	ENERGY STAR certification or 10% reduction in EUI, whichever yields the higher ES score	no	75 cents per SF of GFA without parking for buildings up to 250,000 GFA; 50 cents per SF of GFA without parking for buildings up to 500,000 GFA cap	1 year; renewable for up to 5 years subject to annual energy efficiency performance review	Focuses on **unprecedented carbon reduction potential in existing buildings**, the most numerous in our built environment; **rewards actual performance** in reducing energy use intensity; puts Arlington on par with other local jurisdictions with incentives for existing building efficiency
Conversion/Adaptive Reuse (projects retain at least 50% of existing building structure/infra-structure)	Adaptive Reuse for Housing* LEED Pathway	LEED BD+C v4 Gold or v5 Silver + 25% modeled EUI reduction	yes	Two options: $1500 OR $2000 market-rate award per unit or $2000 OR $2500 affordable award per unit upon project certification	N/A	**Carbon savings from building reuse + carbon reduction in continuing operations;** adaptive reuse will have **shorter and less expensive construction timelines**; LEED option familiar to most builders

Incentive Examples

					New Construction PHIUS ZERO Pathway	Existing Buildings Pathway requires: (1) retrofits; (2) ENERGY STAR certification or ≥10% reduction in EUI whichever yields the higher score		Adaptive Reuse for Housing LEED Pathway	
Example Project Name	**Address**	**Property GFA without parking**	**Parking SF**	**Number of Units**	**.25 FAR bonus density + feasibility study ($5k) grant & PHIUS modeling ($20k) grant; $2 per SF certification award**	**75 cents per SF GFA for buildings up to 250,000 GFA; 50 cents per SF GFA w/o parking for buildings up to 500,000 GFA**	**Cumulative over 5-year incentive period; contingent on certify--cation each year**	**$1500 market-rate award per unit and/or $2000 affordable award per unit**	**$2000 market-rate award per unit and/or $2500 affordable award per unit**
Gables Pointe 14	1307 N Rolfe St	374869	60000	370	$774,738.00	$187,434.50	$937,172.50	$555,000.00	$740,000.00
The Latitude Apartments	3601 Fairfax Dr	269704	45370	279	$564,408.00	$134,852.00	$674,260.00	$418,500.00	$558,000.00
The Bartlett (JBGS)	520 12th St S	752464	342798	699	$1,529,928.00	$250,000.00	$1,250,000.00	$1,048,500.00	$1,398,000.00
Gilliam Place Apartments (affordable)	918 S. Lincoln St.	164309	82310	173	$353,618.00	$123,231.75	$616,158.75	$346,000.00	$432,500.00
TOTALS					**$3,222,692.00**	**$695,518.25**	**$3,477,591.25**	**$2,368,000.00**	**$3,128,500.00**

PHIUS - Climate Adaptation Pathway (New Construction)

Example Project: Gables Pointe 14

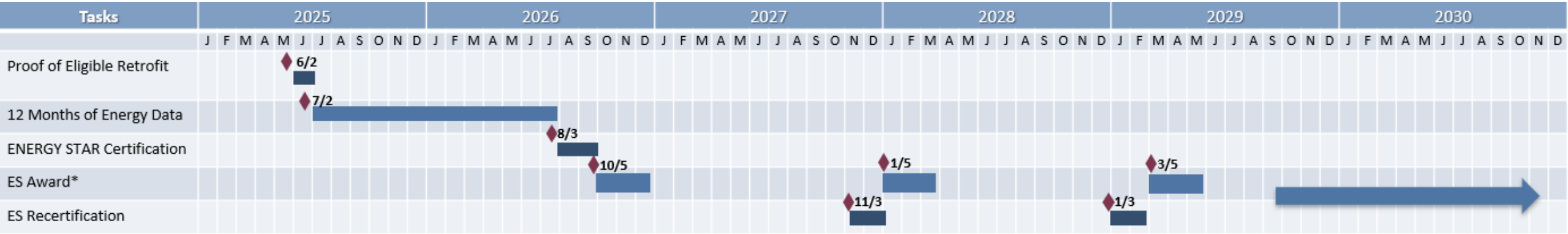


* $5k Feasibility Study
** $20k PHIUS Modeling
*** $2/SF upon award project certification

Date	Amount of Incentive Due
2025	$25,000
2026	$0
2027	$0
2028	$0
2029	$0
2030	$749,738

ENERGY STAR – Existing Buildings Pathway

Example Project:
Gilliam Place

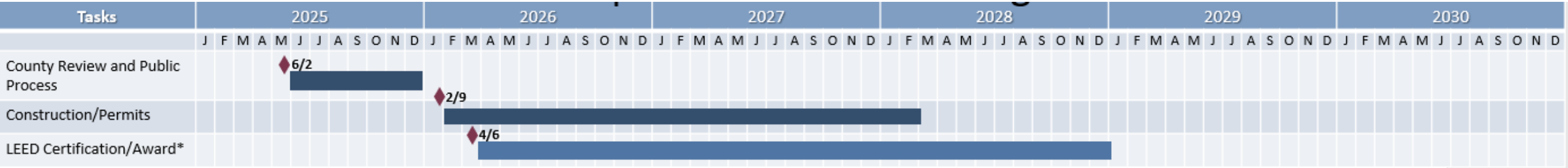


* $.75/SF of GFA for buildings up to 250,000 GFA (without parking) upon award project certification: **$123,231.75 due in 2026 and in subsequent years for a max of 5 years (if the building recertifies)**

Date	Amount of Incentive Due
2025	$0
2026	$123, 231.75
2027	$0
2028	$123,231.75
2029	123,231.75
2030	123,231.75
2031	$123,231.75

LEED – Adaptive Reuse For Market-Rate Housing

Example Project:
The Latitude Apartments



* $1500 or $2000 market-rate award per unit upon project certification (279 units): **$418,500 due at the beginning of 2029**

Scenario 1: $1500/**Market-Rate** Unit

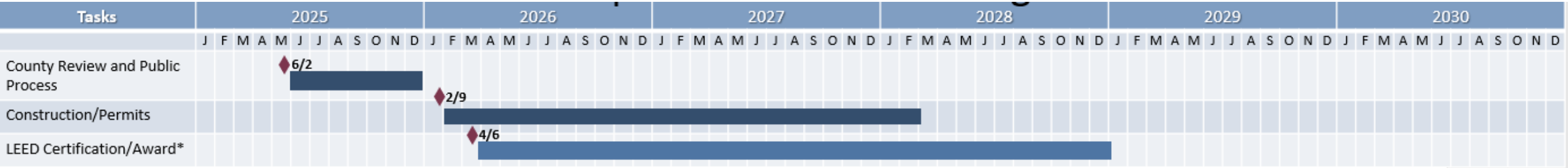
Date	Amount of Incentive Due
2025	$0
2026	$0
2027	$0
2028	$0
2029	$418,500.00

Scenario 2: $2000/**Market-Rate** Unit

Date	Amount of Incentive Due
2025	$0
2026	$0
2027	$0
2028	$0
2029	$558,000.00

LEED – Adaptive Reuse for Housing Affordable Housing Scenarios

Example Project:
The Latitude Apartments



* $2000 or $2500 market-rate award per unit upon project certification (279 units): **$418,500 due at the beginning of 2029**

Scenario 1: $2000/**Affordable Housing** Unit

Date	Amount of Incentive Due
2025	$0
2026	$0
2027	$0
2028	$0
2029	$558,000.00

Scenario 2: $2500/**Affordable Housing** Unit

Date	Amount of Incentive Due
2025	$0
2026	$0
2027	$0
2028	$0
2029	$697,500.00

Average # of projects on annual basis & what % for each of the FAR tiers

- Fourteen GBIP projects since 2021 (average 4.66 per year)
- Seven were grandfathered into the 2014 GBIP, six seeking .4 FAR and one seeking .3 FAR
- Four sought .25 FAR under the 2020 GBIP (28.6%); two sought .35 FAR (14.3%); one sought .55 FAR (7.1%)

2021 projects	**SP Number**	**BONUS DENSITY** SOUGHT
101 12th St S -- Crystal Gateway	229 + 456	0.40
1820 Fort Myer Drive (Ames Center)	1	.0.30
2050 Wilson Boulevard (Courthouse Landmark Block)	457	0.40
2000-1 S. Bell Street	458	0.40
1901 N. Moore Street (Rosslyn RCA Site)	66	0.40
Potomac Yard Land Bay C	346	0.40
2022 projects		
2250 Crystal Drive/223 23rd St/ Crystal Plaza 5	464	N/A – not in GBIP
1300-05 N. Pierce St (Marbella Apts)	463	N/A – not in GBIP
2025 Clarendon Blvd. (Wendy's Site)	435	0.35
PenPlace	105	0.55
2023 projects		
Sunrise South Glebe		N/A -- not in GBIP
Bingham Center		0.35
ARVA		0.25
Ballston Holiday Inn	57	0.25
Crystal Towers 3		0.25
1400 Richmond Highway (Americana)	466	0.25
Crystal Plaza 5	454	N/A – not in GBIP
1000 N. Irving Street	465	.40 (2014)

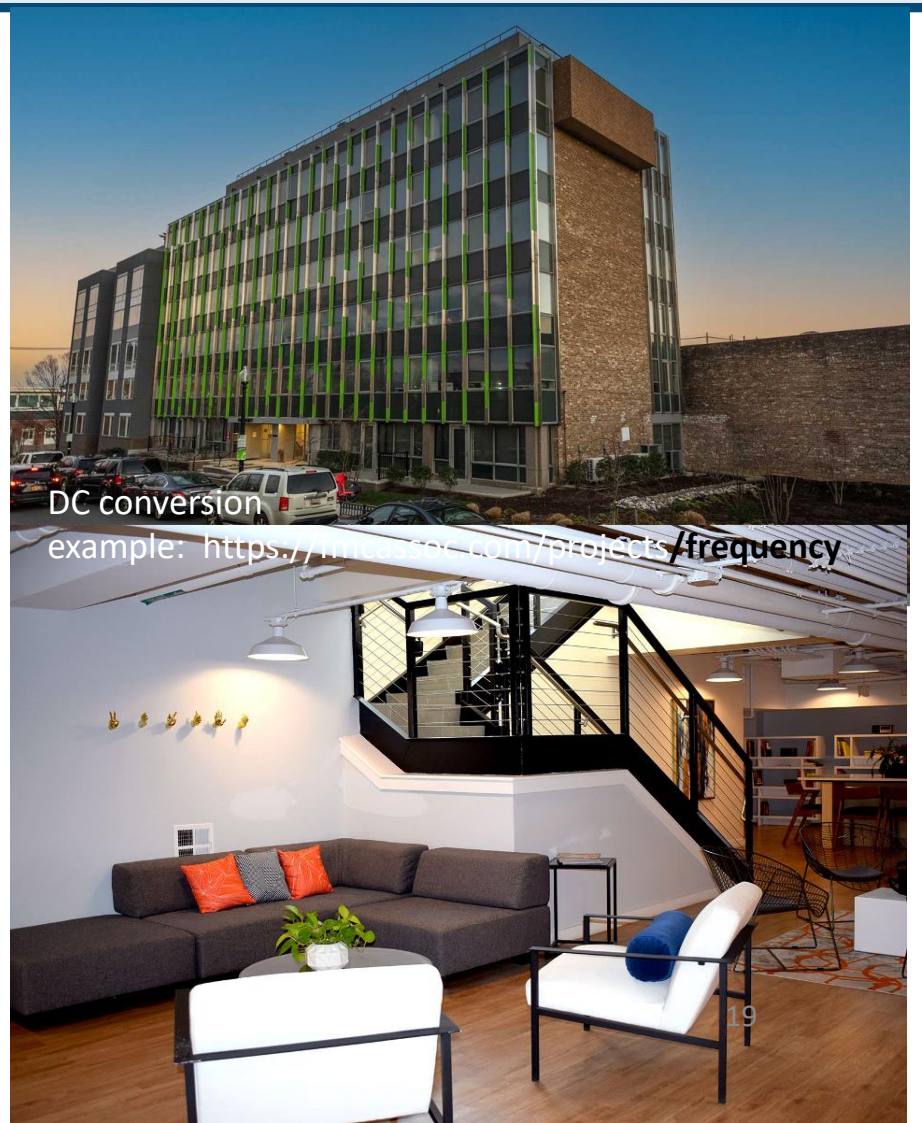
Adaptive Reuse Pathways and Incentives for LEED and PHIUS

Option: Incentivizing Adaptive Reuse and Office-to-Housing* Conversion

Benefits of adaptive reuse: less vacancy and more social and economic street life, much lower embodied carbon and avoided concrete use, less waste and construction phase contamination, shorter and less costly construction process, less disruption to humans and other species in maintaining an existing sense of place.

The CMRI has identified buildings compatible for conversion to residential, and AIRE has developed strawman proposal:

- ***Recognize and incentivize adaptive reuse development as a form of new construction,*** requiring projects to retain 50% of their existing building structure to be eligible for incentives. .
- *Adaptive reuse projects will seek* ***LEED BD+C certification (v4 Gold or v5 Silver) with 25% modeled EUI reduction and fulfill GBIP Prerequisites.***
- ***Adaptive Reuse would be part of the Education Curriculum*** *but, In addition:*
  - ***Recommendation to consider model developed with the WPI Adaptive Reuse Cohort***



The Climate Adaptation Pathway for new construction

- Two basic parts: **Passive House International US (PHIUS) Zero** certification + **green infrastructure** requirements
- **More rigor** than the Traditional GBIP / LEED Pathways, but **also simpler**
  - Fewer discrete actions required; responds to market critique of Traditional Pathway as a grab bag of actions
  - Integrates equity in green infrastructure provision and process
- Incentives for PHIUS new construction and adaptive reuse/building conversion entail **modest upfront funding for feasibility and modeling studies + per SF award upon certification**
  - Draws on current model of Mass Save and NYSERDA examples of upfront funding for feasibility and PHIUS modeling studies + a per unit award upon PHIUS certification

425 Grand Concourse: 277-unit PHIUS multifamily building

What is the PHIUS standard?

- The PHIUS 2021 Passive Building Standard Certification Guidebook says: "The particular focus of the PHIUS standard is on reducing heating and cooling energy through passive measures. In addition to an overall limit on energy use for all purposes, it features limits on heating and cooling energy, in both the annual-total and peak-power sense…."
    - Targets for these heating and cooling 'loads' are climate-specific (adaptation) and prioritized cost-effectiveness as well as performance.
- PHIUS ZERO certification prohibits fossil-fueled combustion onsite; requires that adjusted renewable energy must be equal to or greater than the modeled energy use of the building; and contains fenestration performance, moisture design, air sealing, window performance, ventilation, ENERGY STAR equipment, and electric vehicle charging station requirements. **PHIUS ZERO certification would thus equal or exceed what the County's Baseline Prerequisites would require in many categories.**
- Adaptive reuse buildings choosing the PHIUS path would follow the analogous **PHIUS-ZERO-REVIVE** standard.

Solis Building, Seattle

PHIUS's Passive House Proven Performance

Benchmarking Affordable Passive House Buildings in Philadelphia

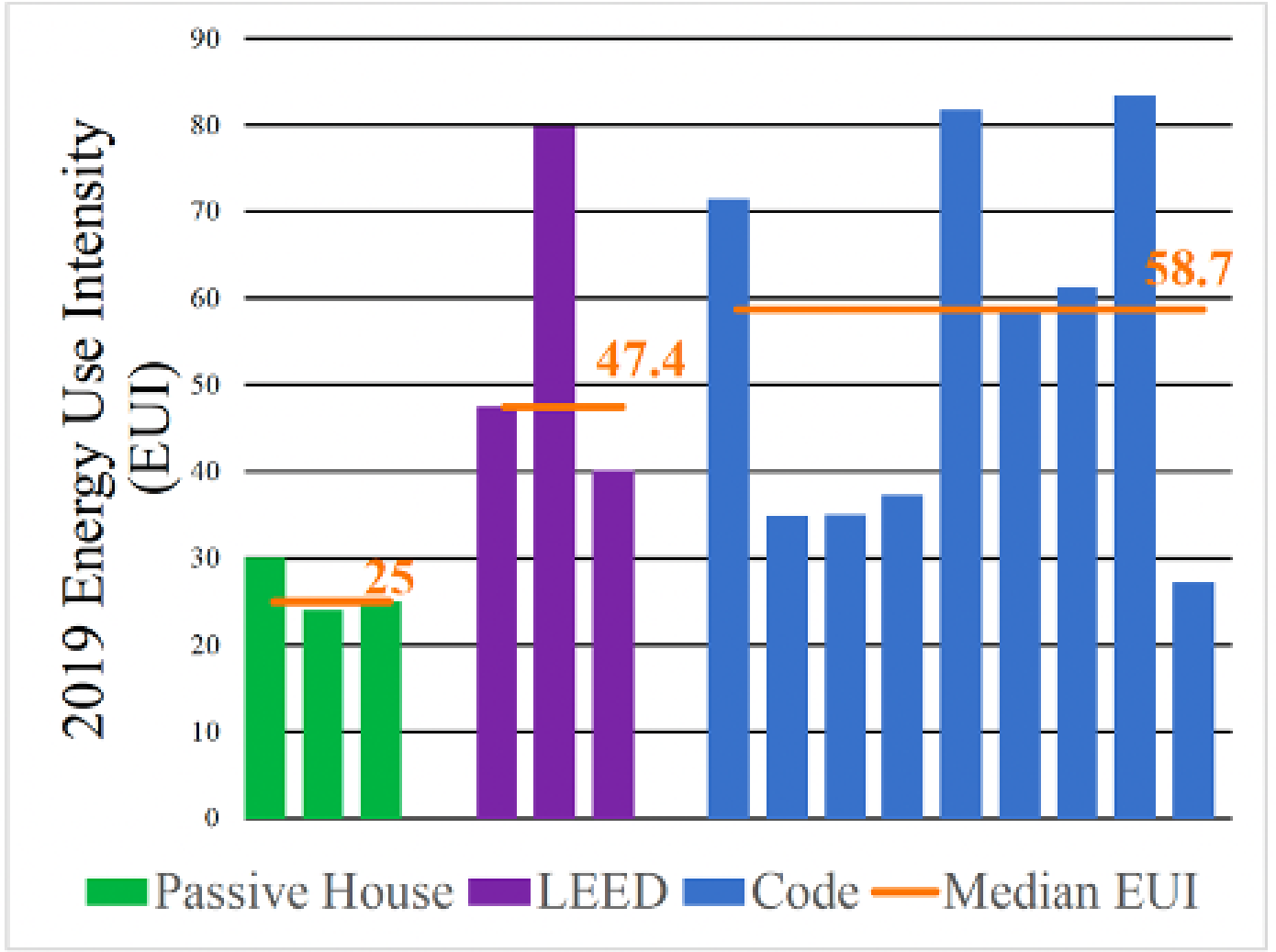


Figure 5. 2019 actual energy use intensity in kBtu per square foot per year (kBtu/sf/yr) for deed-restricted low-income multifamily buildings in Philadelphia, PA (City of Philadelphia 2022). Categorized by voluntary standards achieved. Source: Green Building United

Incremental Costs of PHIUS and LEED

- Weinberg Commons (**picture at right**) in Washington, DC, **retrofitted to PHIUS standards in the early 2010s** in an era of little to no market familiarity with PHIUS construction methods, incurred a cost premium of around 8% over a conventional building.
- For designers with PHIUS experience, for a new 2022 large multifamily building in our climate zone (New York City) the cost premium was in the range of 3-5% above conventional construction, with $200,000 cited as a figure for soft costs for engaging PHIUS specialists.
- In a February 2022 presentation the Massachusetts Clean Energy Center cited the incremental cost of PHIUS as an average of 2.4% over conventional construction. "Cost centers" were ultra-insulating windows and doors, efforts to reduce thermal bridging, meeting the bar for improved ventilation, and the cost of PHIUS construction verification.
- Compare with LEED incremental costs, which a recent analysis found to be 7.43% for LEED Gold certification and 9.43% for LEED Platinum certification, with soft costs comprising between .84 to 1.31% of this total.

PHIUS retrofit: image courtesy of local consultants *Passive to Positive*

Energy Efficiency & GHG by range of %'s. Data from ACEEE, ILFI, PHIUS, LEED, etc. for the EUI improvement & GHG reduction over VA energy code

- There are few studies and thus limited or no comparative data. Available data centers on energy use intensity (EUI), not GHG.
- A 2017 study based on modeling of MF buildings in the Commonwealth of Massachusetts, which studied PHIUS in the lead up to their adoption of it in the MF sector, showed EUI improvement of PHIUS MF buildings over a baseline as modeled EUI reduction (2017 study) would be 55%.
- Site EUI comparison of the 2019 performance of Philadelphia affordable Passive House buildings showed the median EUI of code-compliant buildings to be 58.7, LEED buildings to be 47.4 (a 19.25% improvement), and PHIUS buildings to be 25 (a 57.41% improvement).
  - 2019 Philadelphia code = ASHRAE 90.1-2016 with Commercial Code efficiency category of ASHRAE 90.1-2013, same as VA current standard
- ENERGY STAR data on seven (7) MF buildings achieving LEED under Arlington's GBIP and disclosing their 2023 data* shows a median EUI for these buildings to be 40.2 as against a national median MF EUI of 59.6 (a 32.44% improvement)

*Note that historic EUIs for other County MF LEED-certified buildings without up-to-date data shows lower performance, suggesting that currently reporting buildings skew towards those that are more energy-efficient.

- Summary
- Recommendations
- Next Steps

Summary and Recommendations

Making the Program Serve Multiple Priorities. This model is proposed as a 5-year landmark pilot that will counter waning interest in the conventional model, largely replace "deemed" savings with verified performance, advance climate and affordable housing goals, and leverage the economic timeliness of revitalizing distressed building assets. In addition, the proposal allows for a 6-month tolling period during which a dynamic education and engagement program will be promoted for developers, building owners, designers, architects and contractors that informs new buildings and retrofits from inception.

A Proposal Modeled for Returns on Financial Incentives. Most importantly, is that the Proposal introduces financial incentives that in the main will not be payable until ~ CY 2028, allows for caps, and promotes recoupment of incentives through enhanced property values. Also, OSEM is working with MWCOG to leverage the IRA grants education and incentives funding.

RECOMMENDATION

Approve the full matrixed program for internal circulation/discussion (CPHD, AED, Affordable Housing, Property Appraiser's Office, Treasurer, etc.), followed by 2x2 updates with Board Members.

Public Engagement Plan

Internal Engagement includes:

- CPHD Monthly Department Meeting
- AED
- Engineering Bureau (for Sustainable Facilities comparison)
- FDC and FMB (for Sustainable Facilities comparison)
- CAO and DREA
- Zoning and Permitting (coordination with CMRI 2.0)

Extensive Public Engagement

- Commissions (C2E2, EDC, UFC, PRC, LRPC)
- NAIOP (working group and Arlington committee)
- Private developers
- Advisory Group (Energy Consultants, Engineers, Architects)
- Chamber of Commerce, Washington Gas, Dominion Energy
- Environmental Groups (EcoAction Arlington, Faith Alliance for Climate Solutions, citizens with environmental focus)
- Online Konveio engagement

Next Steps / Action Items

- Distribute Proposal to Internal Stakeholders and schedule Listening Sessions and subsequent All-Hands
- Priority engagement with core stakeholders including NAIOP, BOMA, C2E2, Energy Committee, Planning Commission, and Chamber of Commerce
- Begin to develop outreach-education curriculum and networking
- Continue pursuing potential funding (education and incentives) under the federal IRA

Questions?