



August 31, 2020

Nathan Macek,
Chair
Alexandria Planning Commission
301 King Street
Alexandria, Virginia

Re: Environmental Policy Commission (EPC) comments on the draft North Potomac Yard
Environmental Sustainability Master Plan

Dear Mr. Macek:

On behalf of the EPC, I am writing to share our comments on the draft North Potomac Yard (NPY) Environmental Sustainability Master Plan (ESMP) which was shared with the EPC during our June 15, 2020 meeting and discussed again on August 17th. The EPC commends Sustainable Building Partners, JBG Smith and Virginia Tech for their description of the possible plans described in the ESMP. They covered a broad range of topics addressing the many issues raised by the development of NPY. We greatly appreciate the discussions and willingness of the NPY applicant to answer EPC member questions and make changes to their draft following our virtual meetings.

The City of Alexandria declared a Climate Emergency on October 22, 2019, and issued an Environmental Action Plan (EAP 2040) in July, 2019. The City also issued a Green Building Policy last year. One of the most important targets of the EAP was “reduce community-wide greenhouse gas (GHG) emissions by 50% by FY2030 and 80-100% by FY2050.”¹

NPY Small Area Plan Carbon Neutrality Goal

Presumably in support the EAP’s targets, the NPY Small Area Plan (SAP) set a clear goal to “strive to achieve carbon neutrality by 2040, and to strive to achieve carbon neutral buildings by 2030.” It is unclear how this ESMP does that.

We acknowledge the novel, first-of-its-kind nature of this ESMP and we believe that it should set a bar to be exceeded by each ESMP to follow. In that context, we firmly believe that this Plan should and must be more specific. We are disappointed that the ESMP does not describe a timeline in aspirational terms or otherwise on how the NPY can achieve carbon neutral buildings by 2030 or carbon neutrality overall by 2040. There is only the simple statement on page 40 that states: “The project will strive to achieve carbon neutrality by 2040 and strive to achieve carbon neutral buildings by 2030.” Instead, the EPC would like to see clear metrics on design elements and actions detailing exactly how these goals will be achieved within the DSUP.

NPY CDD Conditions for Reducing Carbon Emissions and Energy Use

Further, one of the conditions of Coordinated Development District (CDD) for NPY is “identify

¹ The EPC largely focused on the reductions to GHG emissions due to its critical nature, but that is not meant to be interpreted that other areas are not important as well.

methods to reduce carbon emissions.” Regrettably, the ESMP appears to reflect this condition by simply listing a series of possible ways to reduce carbon without committing to any. We believe the applicant has missed a sizable opportunity to create a connected community of grid-interactive efficient buildings. When it comes to energy for the site, the NPY plan does not seem to fully embrace the “district” potential of the development and instead focuses on each building individually. The EPC recommends that the applicant include in the design (rather than list as possible strategies): the use of Power Purchase Agreements for renewable energy,² battery storage, more extensive use of rooftop solar, and net-zero ready buildings for the whole district.³

Another CDD condition is “identify how per capita energy usage shall be reduced.” Although the word “shall” is used in the CDD, no measurable specifics with a timeline are referenced detailing how this will be accomplished in the ESMP. Instead, it states operational energy use reduction targets relative to ASHRAE baseline, and energy use is then “tracked”, “explained” or “defined” without any per capita metric stated.⁴ Unless specifics are required demonstrating exactly how and by how much energy usage will be reduced, site-wide emissions will increase, not decrease due to overall change in use of this land.

In Appendix A, the ESMP provides a list of strategies to make the buildings more energy efficient, however most are only listed as “possible” rather than “included in the design.” The EPC strongly recommends that many of the “possibilities” be included as requirements due to the fact that retrofitting is so much more difficult than requiring energy efficient items in the design at the outset. These should include using heat pumps for energy and hot water, radiant floor heating, and other items found in newer ASHRAE⁵ 90.1 standards. This would enable the development to be better prepared for state mandated increasing energy efficiency standards required by the recently enacted Virginia Clean Economy Act (VCEA) that ramps up to 5% per year in 2025.⁶ While this standard only applies to electric utilities, it is zero-sum - so users will pay consistently higher rates or reduce their own usage.

Role of Planned Zero-Carbon Analysis in Shaping Design

The EPC enthusiastically supports the Plan (on page 47) to “Develop a zero-carbon analysis of the entire district and representative buildings to evaluate the project for electrification, energy cost savings, renewable power, and any limitations (technology, cost, etc.)”. However, the NPY team did not indicate this was a driver for the overall project. The EPC believes this must be the overall driver of any Environmental Sustainability Master Plan. Performing this analysis and then implementing technologies to reduce fossil fuels while increasing renewables and energy efficiency to reach net zero carbon could promote this project as a showcase in the region for how this developer is committed to addressing the climate crisis and inform future City development plans and regulations. The Development Special Use Permit (DSUP) reviews should be informed by these analyses to determine if the proposed development phases with regard to the SAP carbon neutrality goals and CDD conditions for reducing carbon emissions and energy use will be met.

² Power Purchase Agreements are now widely used and should not be considered as “fringe” technology as depicted in Chapter IV-3 on page 53.

³ None of these technologies should be listed as “fringe” since all employ readily available proven technologies. Perhaps the developers should better explain why they define certain technologies as fringe despite their proven usage.

⁴ See pages 4-6 and Section IV-2 Operational Carbon.

⁵ ASHRAE 90.1 standards is the commercial energy standard for all buildings except low-rise. ASHRAE standards are adopted by governments as code requirements sometimes with amendments or exceptions. See <https://www.ashrae.org/technical-resources/bookstore/standard-90-1>

⁶ <https://lis.virginia.gov/cgi-bin/legp604.exe?201+ful+CHAP1193> see page 30 4.B.2.d

Other Specific Concerns of the EPC

While this ESMP may not be the document to outline a commitment by the applicant to detail how they will meet the specifics of the EAP 2040 or Green Building Policy, we believe it should reflect how they will meet or potentially exceed the City's targets/goals. Below are additional very specific concerns raised by EPC members:

On page 53, the ESMP Carbon Offsets target is shown to offset 30% of emissions with RECs⁷, PPAs, or carbon offsets for DSUPs in years 0-5 years from 2020, but it is unclear how the proposed buildings cut GHG emissions another 70% over the next 5 years to meet the carbon neutral building target by 2030 referenced in the SAP and on page 1 of the ESMP. It should be noted that REC's and offsets do not actually reduce carbon, they just shift the responsibility to someone else. Therefore, we would prefer to see a stronger position on actually reducing carbon production on the overall site.

The long-term value of net-zero buildings is evident and aligns with the EAP goals, yet the topic is not included even as a long-term strategic item in the ESMP. There is further opportunity to develop the NPY as a "zero energy district" to support carbon reductions, energy independence, resilience, and risk mitigation overall. We'd like to see options included on zero carbon buildings as well as zero energy district under long-term strategies for NPY.

The proposed buildings are planned to be LEED Silver office buildings and LEED Certified residential buildings (p.7). The 2019 Green Building Policy sets a minimum level of certification for private buildings at LEED Silver. Given the climate emergency, the EPC believes the applicant should describe methods to achieve higher level of certification or other specifics to achieve the carbon neutral buildings by 2030 target.

Although all of the buildings will likely be operating in 2050 when the City and Commonwealth are targeting net zero carbon in 2050 and the SAP in 2040, there does not appear to be a plan for how to get to zero carbon by 2040 or 2050 for all of the buildings.

The overall project should consider expanding the use of geothermal energy production beyond a demonstration project on the University campus.

Consistency across the document appears to be lacking at times. Some sections contain aspirational targets/goals following action verbs such as "strive, explore, pursue or encourage," while other sections include very specific, measureable requirements using "exceed, use, eliminate, meet or exceed." We believe this leads to confusion on the reader's part as to whether this is only an aspirational document with no commitment to future specifics or one which leads to specific, measurable requirements for each of the aspirational goals in the next planning document. Also, the ESMP targets do not seem to be harmonized across topics and across the life cycle of the proposed buildings.

The mid-term operational carbon (IV-2) section proposes switching to electric heat and heat pump hot water after a certain degree of decarbonization occurs in the electricity supply – 450 lbs/MWh. However, there is no discussion about when this measure is anticipated, or if there are anticipated costly retrofits to achieve this switch in the future. We suggest committing to an all-electric building except for possible retail restaurant usage of gas rather than rely on some future presently unknowable date.

⁷ RECs are Renewable Energy Certificates and PPAs are Power Purchase Agreements

The proposed site plan would better serve the goals of the EAP, SAP and CDD if it included the capability of the various buildings to provide micro-grid capabilities to provide support and load balancing to the utility system.

As Virginia moves toward higher energy efficiency standards under the new VCEA, developers should be looking toward how to employ increasing levels of energy efficiency. Instead, this ESMP sets a low bar only using the least efficiency energy standard (ASHRAE 2013) rather than newer standards such as 2016 or 2019. While LEED Silver certified buildings often achieve levels of energy efficiency beyond code, this is not guaranteed.

We hope this summary of the EPC's comments will help the Planning Commission in its review of the ESMP and its deliberations concerning the permits for the NPY project. We urge the Planning Commission to make some recommendations for addressing our concerns in the DSUP before it goes to Council. We believe strengthening the carbon reducing measures in the DSUP is imperative in order to honor the City's commitment to address the climate emergency it declared last year.

The EPC appreciates the consideration of our input and looks forward to further collaborating with the Planning Commission to achieve the vision of Eco-City Alexandria.

Thank you for your consideration.

Kathie Hoekstra
Chair, Environmental Policy Commission

Cc: All Planning Commissioners
Deputy Director, Jeffrey Farmer
Planner, Richard Lawrence