



North Potomac Yard

Environmental Sustainability Master Plan

Planning Commission
October 6, 2020

North Potomac Yard

Environmental Sustainability Master Plan

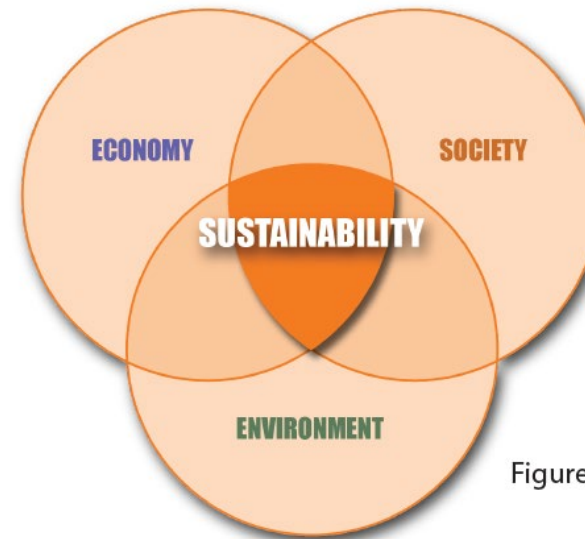
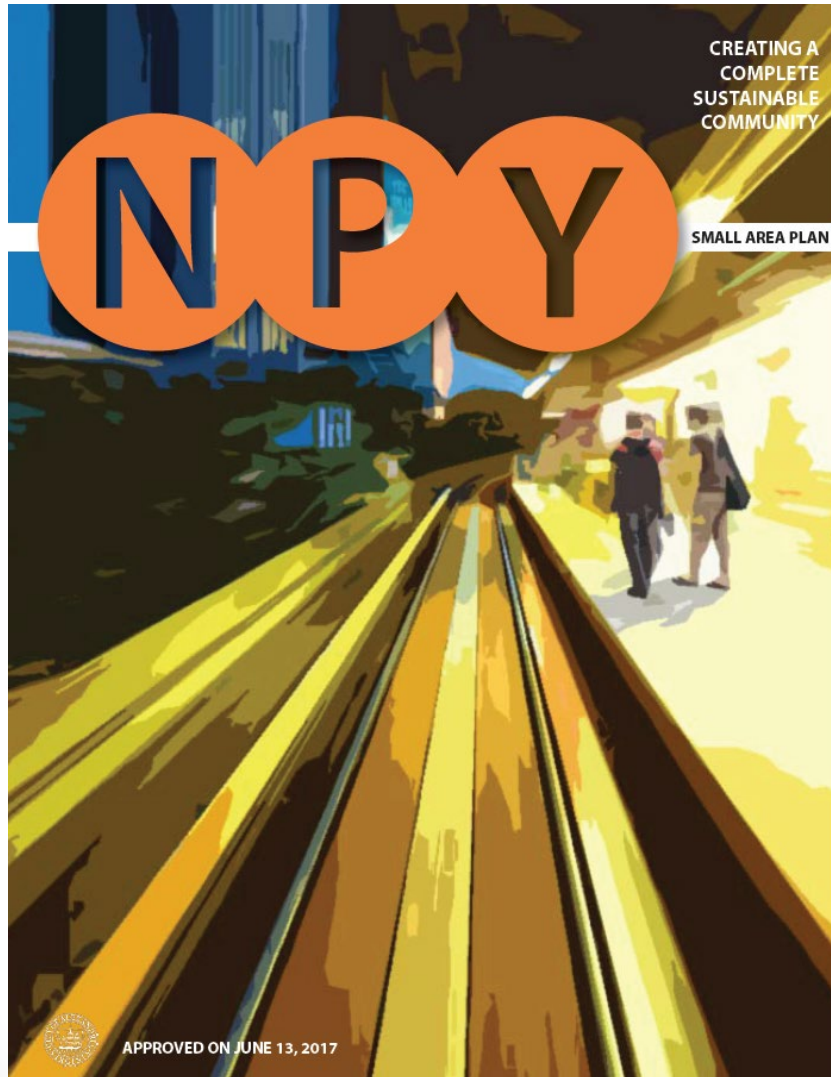


Figure 1.3: Sustainability Diagram

The fundamental goal of the Plan is for North Potomac Yard to achieve progressive and innovative strategies for sustainability in all aspects of development.

North Potomac Yard

Environmental Sustainability Summary of Recommendations

1. Environmental Sustainability Master Plan that implements the Plan and identifies short-term, mid-term and long-term strategies.
2. Strive to achieve carbon neutrality by 2040, and to strive to achieve carbon neutral buildings by 2030.
3. LEED Silver or the City's green building standards
4. Energy consumption/utilization and stormwater should be prioritized



North Potomac Yard

Environmental Sustainability Summary of Recommendation

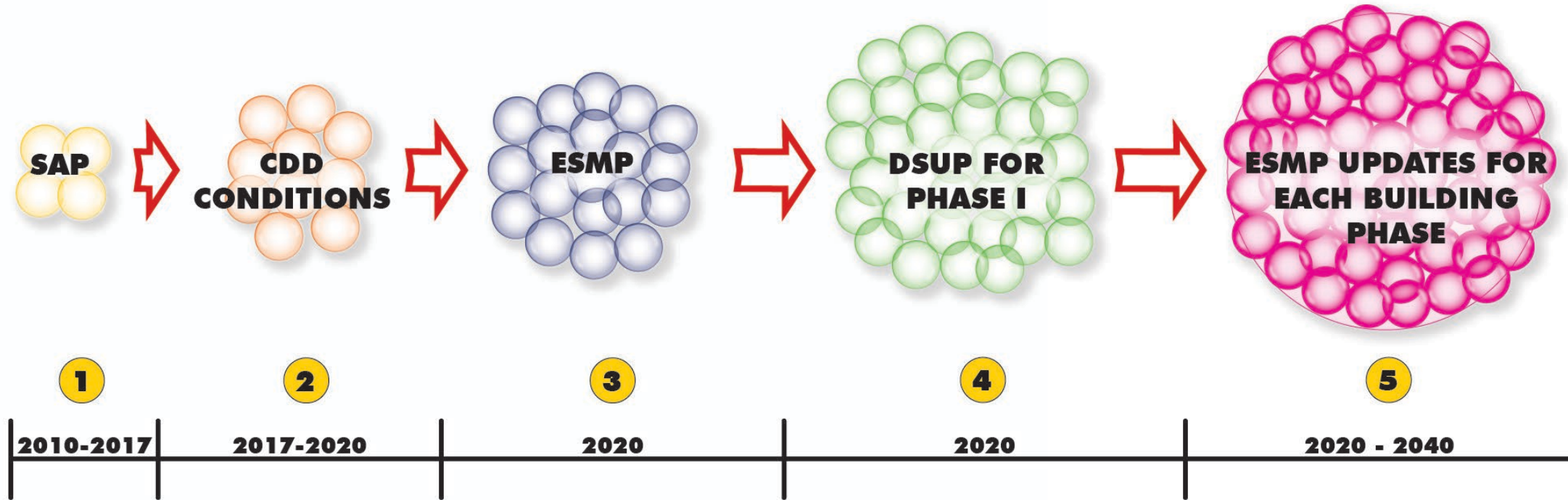
5. Encourage on-site generation and storage of renewable electricity from solar photovoltaic (PV) and other available renewable resources
6. Explore the development of district energy systems for heating and cooling
7. Require the provision of green roofs for new development.
8. Establish minimum quantities of green roof and/or solar power generation on building roofs.



SAP and CDD Compliance

North Potomac Yard Small Area Plan		CDD	
ESMP that implements the Plan and identifies short-term, mid-term and long-term strategies	X	Requires submission of ESMP with each building Phase	X
LEED-ND, Silver Certification	X	LEED ND, Silver Certification	X
LEED Silver or the City's green building standards	X	Stormwater phosphorous reductions	X
		Low-Flow fixtures/sanitary flow reductions	X
Establish minimum quantities of green roof and/or solar power generation on building roofs	X	Minimum green roof requirements established	X
Encourage on-site generation	X	Rainwater reuse	X
Provide an integrated open space network, which incorporates environmental components as part of its design.	X	Porous pavement systems	X
		RPA mitigation	X

Role of the NPY ESMP



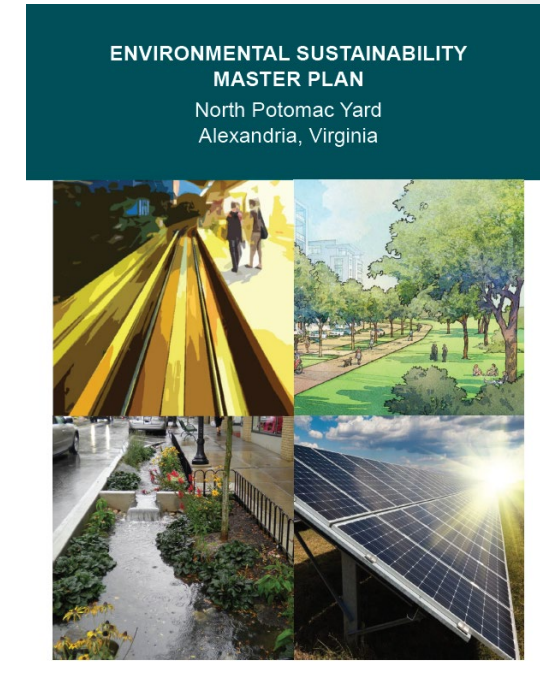
- Requirement of NPY SAP and CDD Conditions
- Developer prepared, long-range document that sets the vision and framework for sustainability implementation
- ESMP implements and builds on CDD requirements and identifies tools and strategies to meet targets
- The aggregate of tools and strategies employed within each phase
- ESMP will be amended with each building phase

Outline of NPY ESMP

- **Sustainability is Top-of-Mind**
 - Woven into North Potomac Yard fabric
 - Conceptual design → operations
- **District-Wide and Building-Level**
 - Block strategies layer upon one another
 - Site-wide performance
- **Time-Based**
 - Short-Term, Mid-Term, Long-Term strategies
 - Targets to advance sustainability
- **Leadership in Sustainability**
 - Environmental Action Plan 2040
 - NPY Small Area Plan
 - 2019 Green Building Policy

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Of the 118 strategies identified, 110 (93%) are being explored as part of Phase 1 and 79 (67%) are District-Wide

Category Strategies	District-Wide Strategies: Included	District-Wide Strategies: Possible	District-Wide Strategies: Under Investigation
Site: 25	17	4	2
Waste: 9	3	2	1
Water: 10	4	2	1
Carbon: 41	13	7	5
Health & Wellness: 19	9	2	3
Resilience: 6	1	2	1

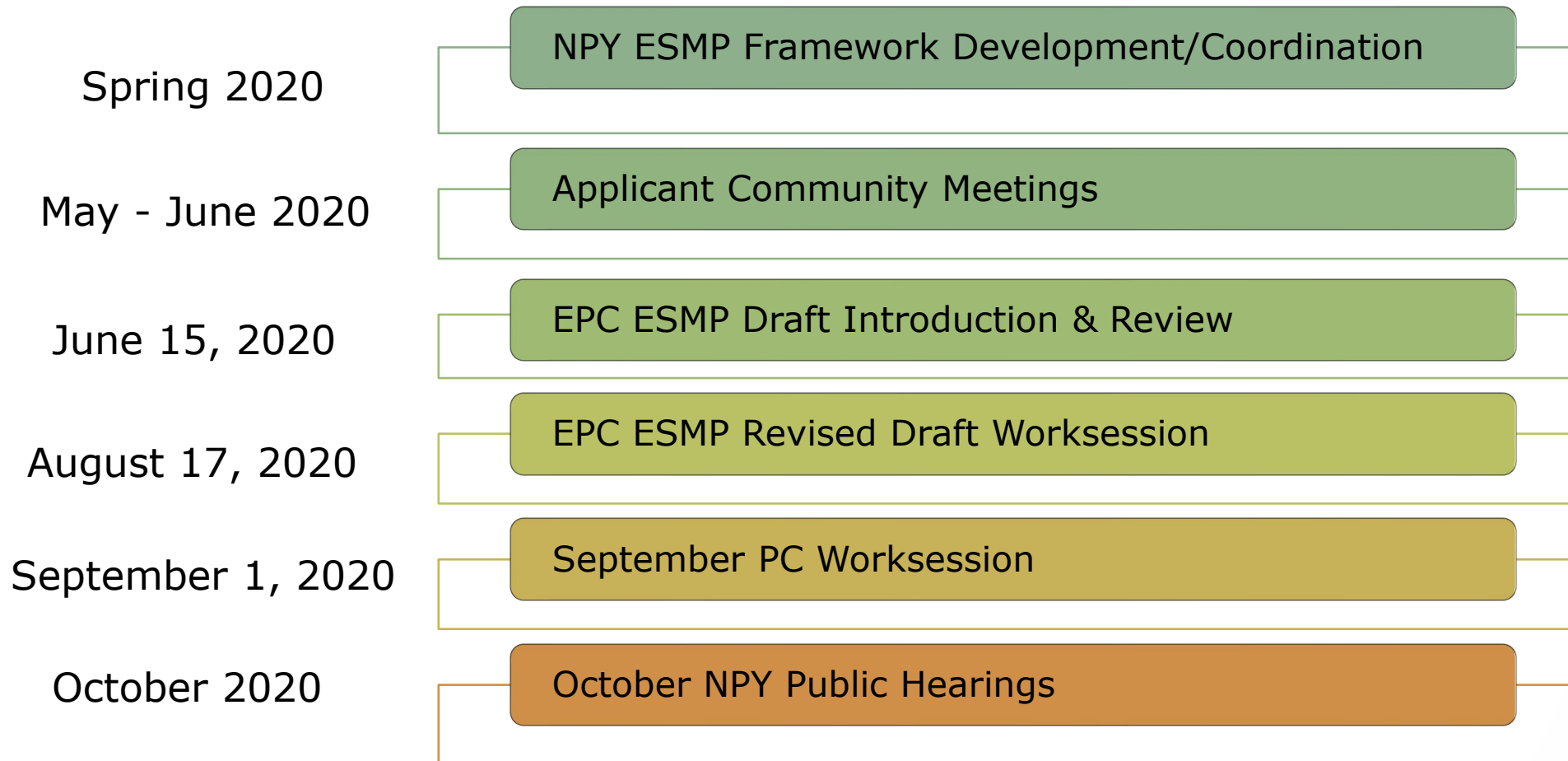
Table 1. District-Wide Phase 1 Sustainability Strategies



NPY ESMP Targets Through 2040

Topic	Categories	Definition	Short-Term (0-5 years)	Mid-Term (Projected: 5-10 years)	Long-Term (Projected: 10-20 years)
Carbon	Operational	Maximum Energy Use Intensity (EUI) Tracked using ENERGY STAR Portfolio Manager annually for 5 years.	Blocks 10, 14, 18, 20: 35 - 45 Blocks 15, 19: 45 - 40 Blocks 4, 7E, 7W: 65 - 95		
Carbon	Design	% annual operational energy savings (energy, lifecycle, urban systems)	15%	25%	40%
Carbon	Embodied	% reduction in carbon emissions (materials, lifecycle, urban systems)	5%	10%	15%
Carbon	Renewables	% net annual production	3% - 5%	5%	10%
Carbon	Transportation	% of non-personal auto trips generated	55%	65%	75%
Water	Potable Water	% reduction in potable water use (fixtures)	30%	35%	40%
Water	Irrigation	% reduction in potable water use (irrigation)	20%	50%	75%
Water	Rainwater	% volume of impervious roof surface stormwater harvested for re-use	5%	10%	15%
Waste	Construction	% reduction in waste (materials & diversion)	50%	65%	75%
Waste	Consumables	% reduction in on-going waste (operations)	15%	25%	35%
Site	Open Space	% of site established for open space (ground-level and rooftop)	35%	40%	45%
Site	Heat Island	% of grade-level and above-grade coverage district-wide	25%	50%	90%
Site	SWM Treatment	% reduction in phosphorous	40%	50%	60%
Site	SWM Volume	% runoff volume managed on site	25%	35%	50%
Site	Tree Canopy	% of tree canopy coverage district-wide	40%	45%	50%
Site	Green Roof	% of roof allocated for vegetation (VT <25%: green roof + PV = 50% total)	25%	30%	40%
Site	Vegetation	% exceeding the 2024 Native Plant Standards	Meet	5%	10%

Outreach



Summary of EPC Comments

- Providing more specificity within the ESMP
- Setting clear goals to “strive to achieve carbon neutrality by 2040, and to strive to achieve carbon neutral buildings by 2030”
- Exploration of alternative energy sources and district-wide solutions that reduce carbon emissions
- Inclusion within the design the use of Power Purchase Agreements for renewable energy, battery storage, more extensive use of rooftop solar, and net-zero ready buildings for the whole district
- Identifying capita energy usage reductions and detailing how this can be accomplished in the ESMP
- Developing a zero-carbon analysis of the entire district and representative buildings
- Utilizing analysis to inform DSUP reviews to ensure proposed development phases align with the carbon neutrality goals

Summary of Planning Commission Comments

- Maximizing the opportunity to capitalize on district-level solutions rather than an aggregate of strategies applied on a building/block level
- Providing clarity within the ESMP to achieve the SAP and CDD condition goal of carbon neutrality by 2040
- Reprioritizing some of the mid-term strategies that can readily be applied in the short-term
- Providing a more aggressive modal-split goal within the transportation targets.

Staff Recommendations

Developed DSUP conditions to each individual building that:

- All buildings utilizing electrification as primary power source
- Specifically addresses achieving carbon neutrality by 2030
- Clarifies reporting requirements for how targets and metrics are measured through implementation
- Ensures each building, and the site, strive to meet carbon neutrality goals and sustainability targets outlined in the ESMP, in alignment with the SAP, CDD, and City policies/goals.

Summary of Applicant Changes to ESMP

Page	Section	Subsection	Change
All	Site, Waste, Water, Carbon, Health & Wellness, Resilience		Moved multiple strategies from long- and mid-term to short-term. Increased thresholds (example: bike racks from 15% of residents to 1 per 2.5 residential units).
1 - 10	Introduction		General wording changes in Introduction sections to align with DSUP and City Staff conversations.
3	Overarching Goals		Clarification on what Figure 5 illustrates.
4 - 5	(New) Carbon Neutrality and Electrification		This section ties together the goals and strategies listed the document related to how NPY will strive to achieve Carbon Neutrality. It clarifies NPY's district-wide, holistic strategy regarding Carbon Neutrality. It also highlights that all buildings in the district will be electric and that NPY will be analyzing renewables and zero-carbon feasibility, and applying the results to future designs.
5	Sustainability is Top of Mind		Brief clarification on how LEED is woven in from early conceptual stages.
6 - 7	Targets for Advancement of Sustainability		Updated Table 2. Summary of District-Wide NPY ESMP Targets through 2040. Specific information on how, and when, targets and benchmarks will be tracked. Specific information on how, and when, LEED Scorecards and Appendix A will be updated.
10	Timeline-Based Sustainable Strategies		Clarification on the Mid-Term definition.
13 - 14	Site	Stormwater	Moved strategies from mid-term to short-term.
15	Site	Open Space	Added wording to clarify that open space also includes habitat and natural features. Strengthened connection to the Habitat section.
16 - 17	Site	Habitat	Added wording to strengthen connection to Open Space section.
40, 48	Carbon	Background; Operational	Clarified that all buildings will be electric.

Summary of Applicant Changes to ESMP

Page	Section	Subsection	Change
44, 48	Carbon	Embodied; Operational	Added Zero-Carbon feasibility studies to Short-Term Strategies lists.
51	Carbon	Operational	Removed 'switching from natural gas to electricity' from mid- and long-term strategies, as buildings will be electric starting in the short-term.
54 - 55	Carbon	Renewables	Added PPA purchases, micro-grid feasibility analyses, minimum one net-zero building, and partnerships with Dominion VA Power as possible strategies.
57 - 58	Carbon	Transportation	Reordered goals and strategies to emphasize walking/ biking/ public transportation over automobile transportation.
60, 64	Health & Wellness	Background; IAQ	Added language on COVID impacts and studies.
72 - 73	Resilience	Infrastructure	Moved strategies from long-term to mid-term or short-term.

Conclusion

Staff recommends **acceptance** of the Revised NPY ESMP