



Strategic Direction for County Green Building Policy and Energy Performance

Building Design and Construction Division, DPWES
Sustainable Development Program Update
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Agenda

Green Building Policy & Energy Performance for Public Facilities

An Interim Update:

- Where We've Been
- Where We Are Today
- Where We Are Going



BDCD Sustainability Program Overview

Pilot Projects Leading to 2008 BOS Policy:

LEED:

- Fairfax Center Fire Station
- Crosspointe Fire Station
- Oakton Library
- Burke Center Library

Green Globes:

- Hanley Family Shelter

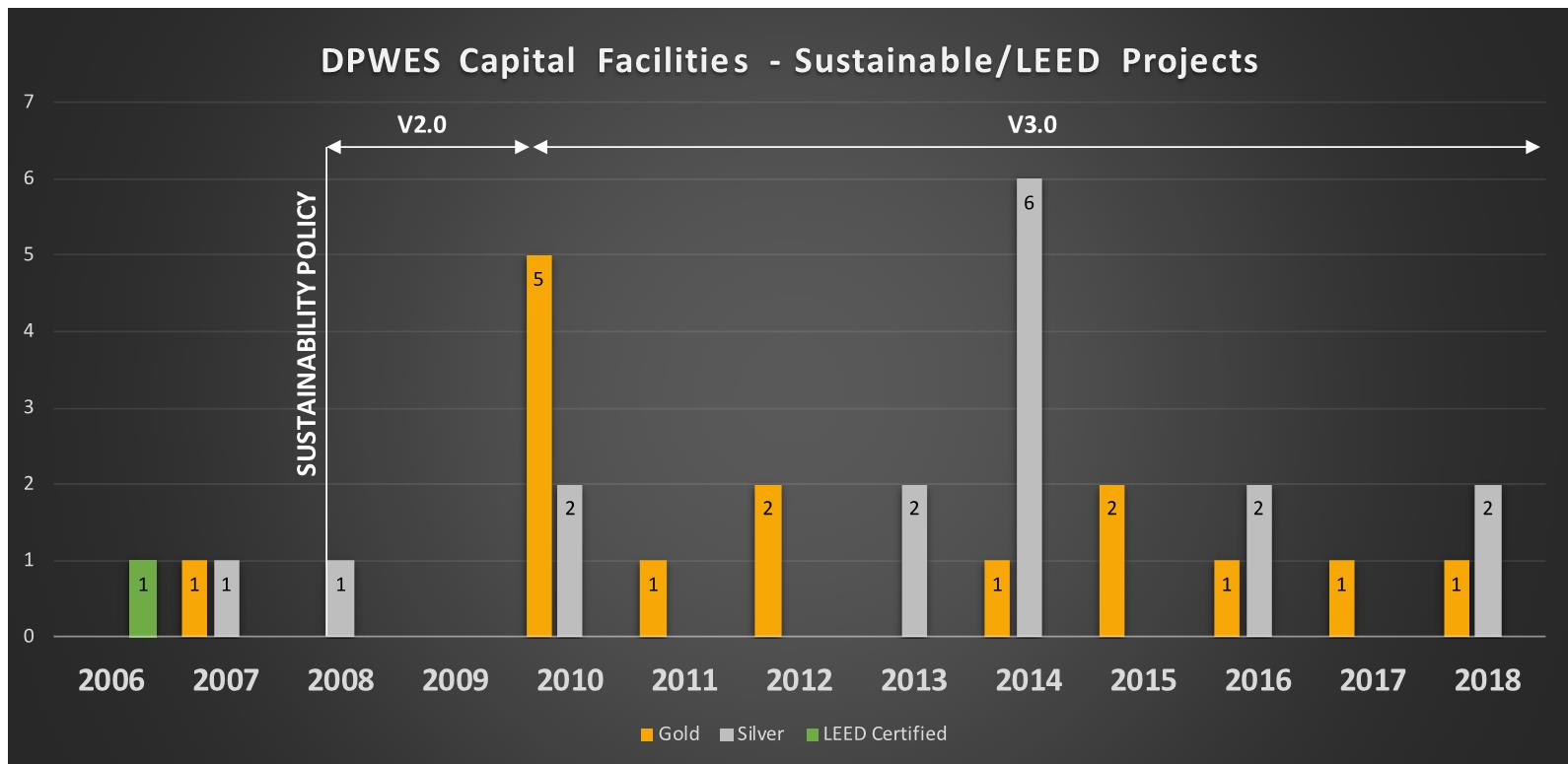
Since BOS Sustainable Development Policy – 2008

- Construction and renovations over 10,000 SF – LEED Silver Certification





DPWES Sustainability Program Overview - Buildings

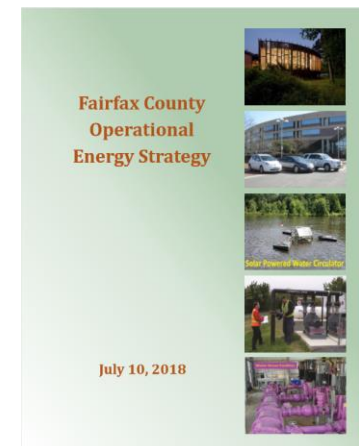
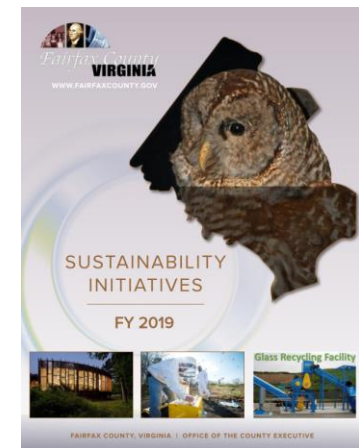


LEED Silver achieved = 16 LEED Gold achieved = 15
LEED Certification pending = 2



Where We Are Today – Fairfax County Sustainable Policies:

- BOS Sustainable Development Policy (LEED Version 4)
 - Aggressive energy performance & renewable energy use
 - Enhanced commissioning - energy metering and reporting
 - Raises performance requirements
- BOS Operational Energy Strategy
 - 20% kBTU/SF & water usage reduction by 2029
 - Explore renewable energy systems
 - Electric vehicle charging infrastructure
- BOS Fairfax Green Initiatives
 - Accelerating goals and targets for the Energy Strategy
 - Use of solar energy to offset energy usage
 - Develop Climate Resiliency and Adaptation plan
- Natural Landscaping Policy
- Office of Environmental and Energy Coordination





Where We Are Today

14 total projects in final design & construction:

- 9 are tracking v3 Silver
- 5 are tracking v4 Silver

16 total projects in early design:

- 4 are tracking v3 Silver
- 12 are tracking v4 Silver



Environmental & Energy Advisory Committee
for Vetting Advanced Initiatives



Where We Are Today

Sustainable initiatives:

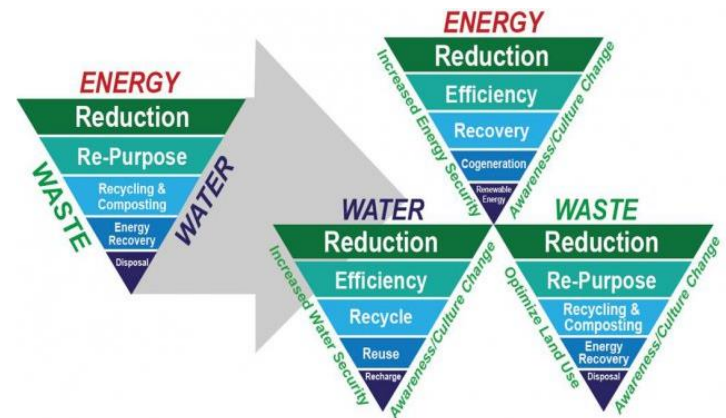
- Solar Ready Projects - Solar RFP
- Electric Vehicle Ready Charging Station Infrastructure- EV RFP
- VRF HVAC system
- Advanced Energy Monitoring & Commissioning
- Post Occupancy energy analysis
- LED lighting, lighting controls
- Natural landscaping
- Geothermal analysis
- Green Roofs, Rainwater harvesting, LID's
- Parking Structure Sustainability (Parksmart)
- Bird Friendly Design
- Envision
 - Huntington Levee – Bronze
 - Disinfection System Replacement/Rehabilitation - Gold





Where We Are Going

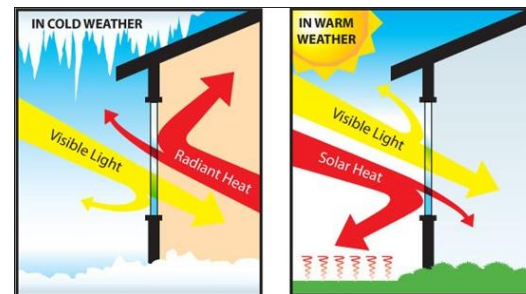
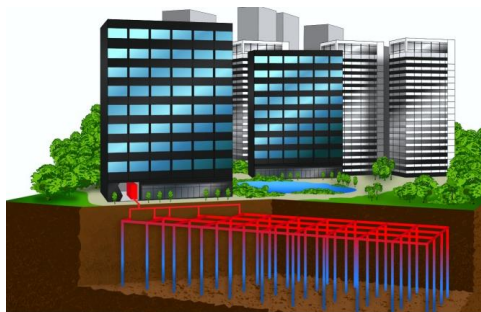
- Achieve higher level of LEED certification
 - LEED 4.0 Silver minimum
 - Target LEED 4.0 Gold (Pilot Projects)
- Analyze Options to Achieve Net-zero and Vet with Environmental & Energy Advisory Committee
- Optimize building performance and energy usage after occupancy
 - Metering and Analyzing annual performance
 - Post Occupancy Re-Commissioning
 - KBTU/SF and CO2 Performance and Reductions





Where We Are Going

- Pathways to LEED Gold, Net Zero and Optimized Energy Performance
 - Renewable Energy Evaluation and Implementation (Solar/Geothermal)
 - Enhanced Building Envelope Design & Commissioning
 - More efficient HVAC systems – VRF & Hydronic systems
 - Advanced HVAC and Lighting controls
 - Post Occupancy and Life Cycle Re-Commissioning of systems
 - Gray Water Re-use & Rainwater Harvesting
 - Shared Use sites near Public Transportation





Where We Are Going

- Analysis of LEED 4.0 projects, LEED 4.0 Gold Pilot Projects and Net-Zero options to build basis for next generation LEED/sustainability policy and goals
- Environmental & Energy Advisory Committee to evaluate cost and benefits of options to achieve higher levels (LEED Gold and Net Zero)
- Identify Pathways and Cost/Benefit Analytics to achieve sustainable higher levels
 - LEED 4.0 Gold first cost premium on the order of 4-6%
 - O&M Capability for building systems life cycle
 - Facility functional operations
- Cost benefit analysis – Analysis of benefits beyond fiscal payback
- Recommend a Holistic approach to sustainability under LEED with enhanced focus on energy and renewable energy
- Life cycle commitment to sustainability starting at occupancy of new building



Closing

- BDCD to return to BOS Environmental Coordinating Committee in early 2020 with updates and more specifics on Projects achieving at higher levels
- QUESTIONS



Appendix - Where We Are Today

14 total projects in final design & construction:

- 9 are tracking v3 Silver

- Jefferson Fire Station
- Lorton Fire Station
- Bailey's Shelter & Supportive Housing
- Reston Fire Station
- Edsall Road Fire Station
- Woodlawn Fire Station
- Merrifield Fire Station
- Lewinsville Center
- John Marshall Library

- 5 are tracking v4 Silver

- Sully Community Center
- Tysons East Fire Station
- Lorton Community Center & Library
- Stormwater/Wastewater Facility
- Mount Vernon RECenter

16 total projects in early design:

- 4 are tracking v3 Silver

- South County Police/Animal Shelter
- Patrick Henry Shelter
- Operational Support Bureau
- Kingstown Library/Franconia Police Station Complex

- 12 are tracking v4 Silver

- Police Heliport
- Emergency Vehicle & K9 Training Center
- Penn Daw Fire Station
- Fairview Fire Station
- Joseph Willard Health Center
- Patrick Henry Library
- Eleanor Kennedy Shelter
- Criminal Justice Academy
- Mason District Police Station
- Seven Corners Fire Station
- Reston Regional Library
- Embry Rucker Shelter and Supportive Housing