Strategic Direction for County Green Building Policy and Energy Performance

Building Design and Construction Division, DPWES
Sustainable Development Program Update
October 8, 2019

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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