



FAIRFAX COUNTY PARK AUTHORITY



M E M O R A N D U M

TO: Chairman and Members
Park Authority Board

FROM: Kirk W. Kincannon, Executive Director

DATE: July 6, 2017

Agenda

Joint Meeting
Fairfax County Park Authority Board
and
Environmental Quality Advisory Board
Wednesday, July 12, 2017 – 6 p.m.
Rooms 106/107 – Herrity Building
FCPA Chairman: William G. Bouie
EQAC Chair: Stella Koch

1. Update on the implementation of the FCPA Natural Resource Management Plan
2. Progress made by the Invasive Management Area Program
3. Energy Management Plan



If accommodations and/or alternative formats are needed, please call (703) 324-8563. TTY (703) 803-3354

Fairfax County Park Authority
Natural Resource Management Plan



Adopted January 29, 2014
<http://www.fairfaxcounty.gov/parks>



**Natural Resource
Management Plan –
FY 2017
Accomplishments and
FY 2018 Implementation
Plan**

Joint Meeting
FCPA & EQAC
July 12, 2017

***FY2017 Activities
Accomplished***

Best practices: terrestrial ecological restorations

Continued to populate geodatabase model

Completed branch SOPs for Inventory and Planning, and Managing Wild Populations and Restoring Ecosystems activities

Continued to implement NRMP for OCPP and HOLH project at Poplar Ford; and started ecological restoration project at White Gardens

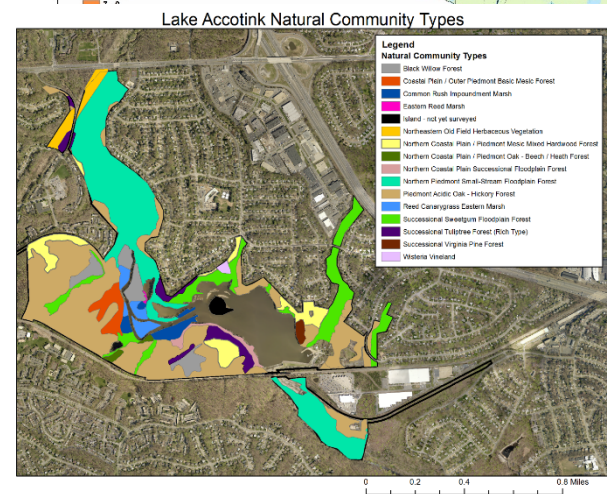
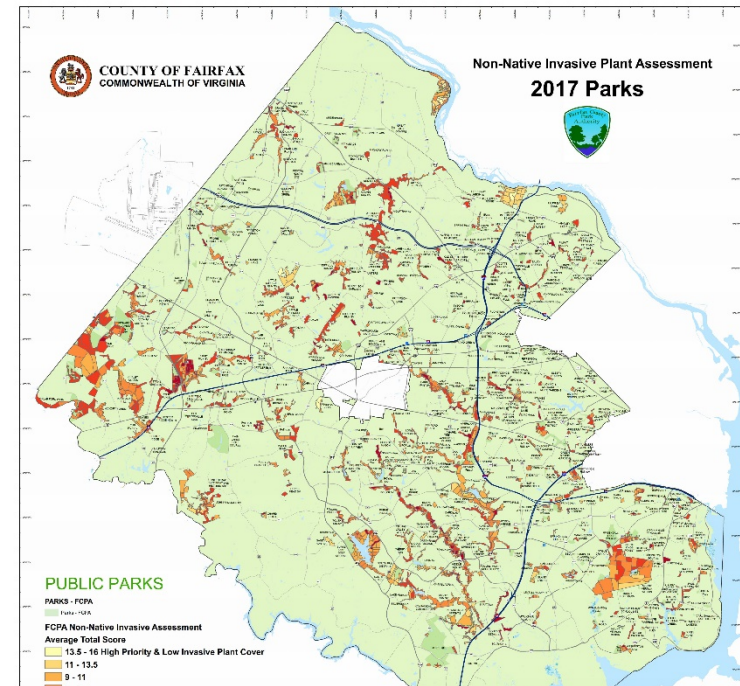
Built capacity for threatened and endangered species survey and monitoring

Inventory and Planning

2,255 acres surveyed for invasive species

17 parks assessed for deer browse impacts and estimate deer densities at 24 parks

307 invasive treatment plans prepared and 57 completed



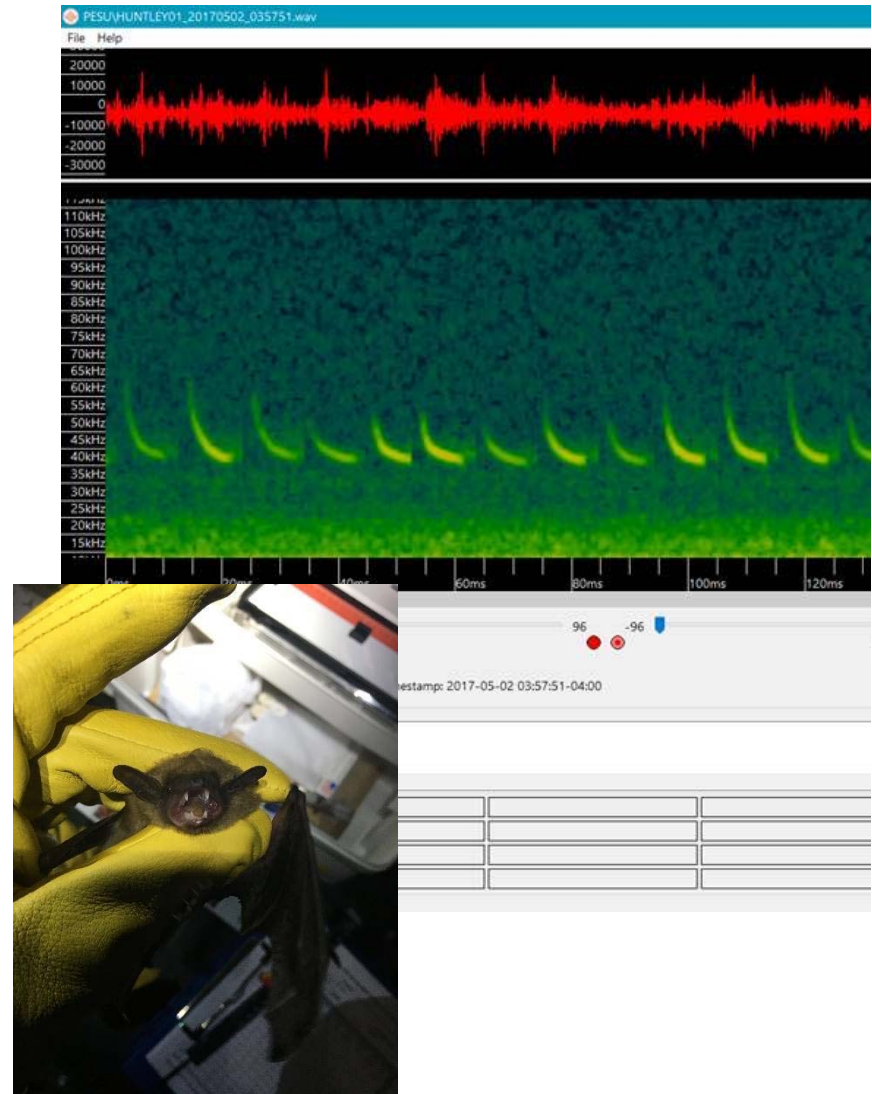
“Knowing what we have”

Inventory and Planning

1,551 acres of natural
vegetation communities
classified and mapped

3 Resource Protection
Zones designated

Developed capacity and
started systematic surveying
for selected rare, threatened,
and endangered species



“Knowing what we have”



Protecting Natural Capital

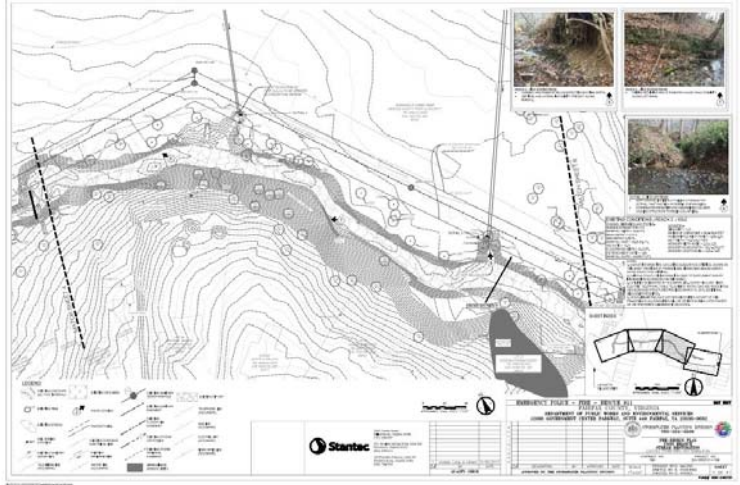
169 development plans reviewed

44 park project teams served

4 encroachments where technical assistance was provided

39 easement actions where technical assistance was provided

“Do no harm”



Protecting Natural Capital

27 DPWES projects where technical assistance was provided

10 land acquisition reviews conducted

35 permit requests reviewed for restricted natural area activities

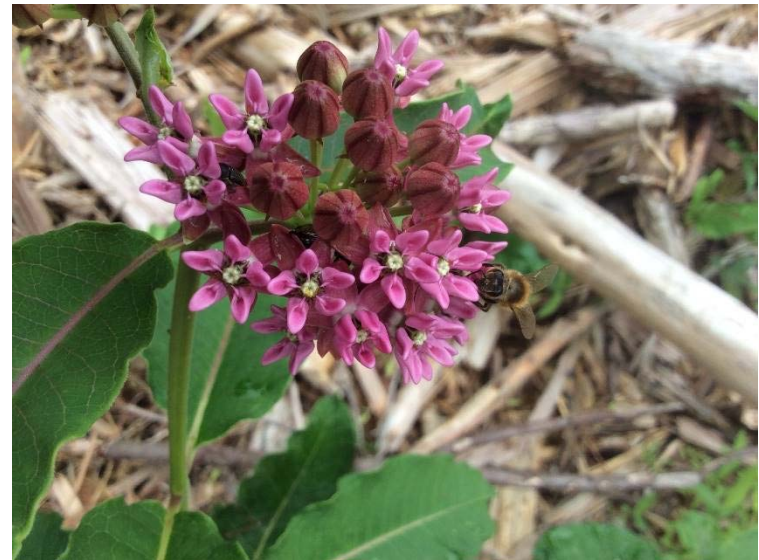
“Do no harm”

Managing Wild Populations and Restoring Ecosystems

1,190 acres treated for
invasive, non-native
vegetation

913 white-tailed deer
harvested from 92 parks

111 Canada goose nests
oiled at lake front parks, golf
courses, and other parks



“Helping our land heal”

Managing Wild Populations and Restoring Ecosystems

67.4 acres of prescribed fire
implemented

5 ecosystem restoration
projects in progress:
Old Colchester Park
Poplar Ford Park
White Garden Park
Elklick Preserve
Fitzhugh Park



“Helping our land heal”



Fostering Stewardship and Expanding Natural Capital

9,020 volunteer hours removing non-native, invasive vegetation

44,881 FCPD volunteer hours harvesting white-tailed deer

65 volunteers trained for citizen science protocols

**FROG
WATCH** | USA™

eBird

“Spreading the word”



**TAKE
BACK
THE
FOREST**

“Spreading the word”

Fostering Stewardship and Expanding Natural Capital

1,071 (estimated) customer inquiries addressed

20 partnerships fostered with federal, state, regional, private, non-profit, and county organizations

Fairfax County Environmental Vision updated

FY2018 Planned Activities

Continue to populate geodatabase model

Continue to implement natural capital investment/ecological restoration projects

Natural Resources Management Plan for Huntley Meadows

Secure or renew contracts for invasive vegetation management, and ecological services

Develop agency-wide list of potential mitigation sites

Develop probable vernal pool data layer

Implementation Plan for agency-wide NRMP

Acknowledgements



- Park Authority Board
- Environmental Quality Advisory Council
- Fairfax County Police Department
- Virginia Departments of Forestry, Game and Inland Fisheries, and Conservation and Recreation
- Northern Virginia Soil and Water Conservation District
- Earth Sangha
- Fairfax Releaf
- Fairfax County Departments of Public Works and Environmental Services, Health, Planning and Zoning, and Fire and Rescue
- Fairfax County Park Foundation
- Friends Groups
- Volunteers and Citizen Stewards
- REI
- Northern Virginia Audubon Society
- Forts Belvoir and AP Hill
- Quantico Marine Corps Base
- Leslie Gerhard and Katie Auer



Non-Native Invasive Vegetation Assessment and Management

Joint Meeting
FCPA & EQAC
July 12, 2017

Non-Native Invasive Vegetation (NNI) Overview



- Policy and Guidance
- NNI Management Strategy
- NNI Management Programs and Activities
- NNI Agency-wide Assessment—NNIAP
- Funding
- Outlook

Policy and Guidance

- FCPA Policy 201, Natural Resources
- Agency-wide Natural Resource Management Plan



Policy 201	Title: Natural Resources
Date Approved: 6/26/2013	Last reviewed: 2/25/2009
Objective: Ensure the long-term protection, preservation and sustainability of natural, cultural and park resources in accordance with adopted park standards and adherence with natural and heritage resource management guidelines and Countywide Policy Plan obligations.	

Purpose: The Natural Resources policy provides the foundation to achieve the natural resource preservation and incorporation of resource functions.

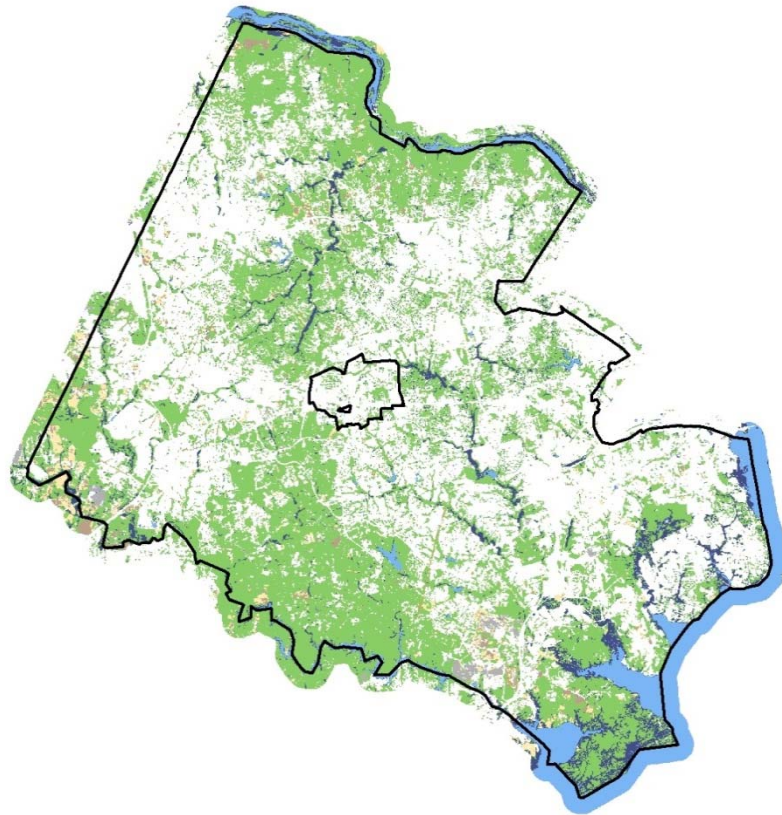
Policy Statement: In its role as a public agency, the Authority works to ensure that natural resources can also be used to provide services they provide. Natural resource management is found in the Comprehensive Plan.

- In its role as a public agency, the Authority works to ensure that natural resources can also be used to provide services they provide. Natural resource management is found in the Comprehensive Plan.
- Natural capital is a resource that cleans our air, cleans our water, and provides life for its restoration.
- Natural resource protection, in which human intervention is used to manage degraded natural resources.

Fairfax County Park Authority
Natural Resource Management Plan

Adopted January 29, 2014
<http://www.fairfaxcounty.gov/parks>

NNI Management Strategy



- **Prevention** by reducing disturbance and species introductions is a key component of the response to NNI
- **Prioritization** of treatment areas based upon both ecological and cultural site values if limited resources are to be used effectively
 “protect the best first”

NNI Management Programs and Activities



- 6 Programs and Activities
 - Invasive Management Area (IMA) Program
 - Early Detection and Rapid Response (EDRR) Program
 - Non-Native Invasive Assessment Protocol (NNIAP)
 - Non-Native Invasive Management
 - Helping Our Land Heal Program
 - Development Mitigation Activities

Non-Native Invasive Assessment Protocol (NNIAP)

INVASIVE PLANT SITE PRIORITIZATION SCORING SHEET
Fairfax County Park Authority

Park name: _____
Site location: _____
Inspector name: _____ Date: _____

ECOSYSTEM SCORE

BIODIVERSITY LEVEL	DISTURBANCE LEVEL		
	Low	Medium	High
High	5	4	3
Medium	4	3	2
Low	3	2	1

SUBTOTAL _____

NON-NATIVE INVASIVE SPECIES SCORE

INVASION LEVEL	CONTROL DIFFICULTY		
	Readily Responder to Control	Requires Repeated Control Efforts	Difficult, Poor Response to Control Efforts
Less than 20% of Vegetative Cover	5	4	3
20% - 50% of Vegetative Cover	4	3	2
Greater than 50% of Vegetative Cover	3	2	1

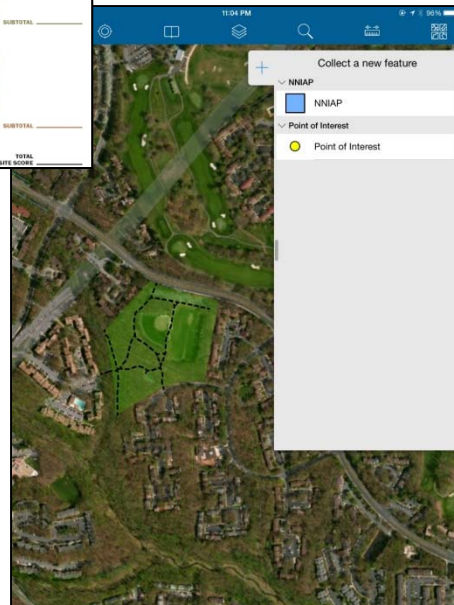
ADD 1 if site was managed in the last 12 months. SUBTOTAL _____

CULTURAL VALUE SCORE

VIOLATION LEVEL	CONSERVATION		
	Formal Volunteer Program	Informal Volunteer Program	No Equipment Public Encroachment
High	5	4	3
Medium	4	3	2
Low	3	2	1

SUBTOTAL _____

TOTAL SITE SCORE _____

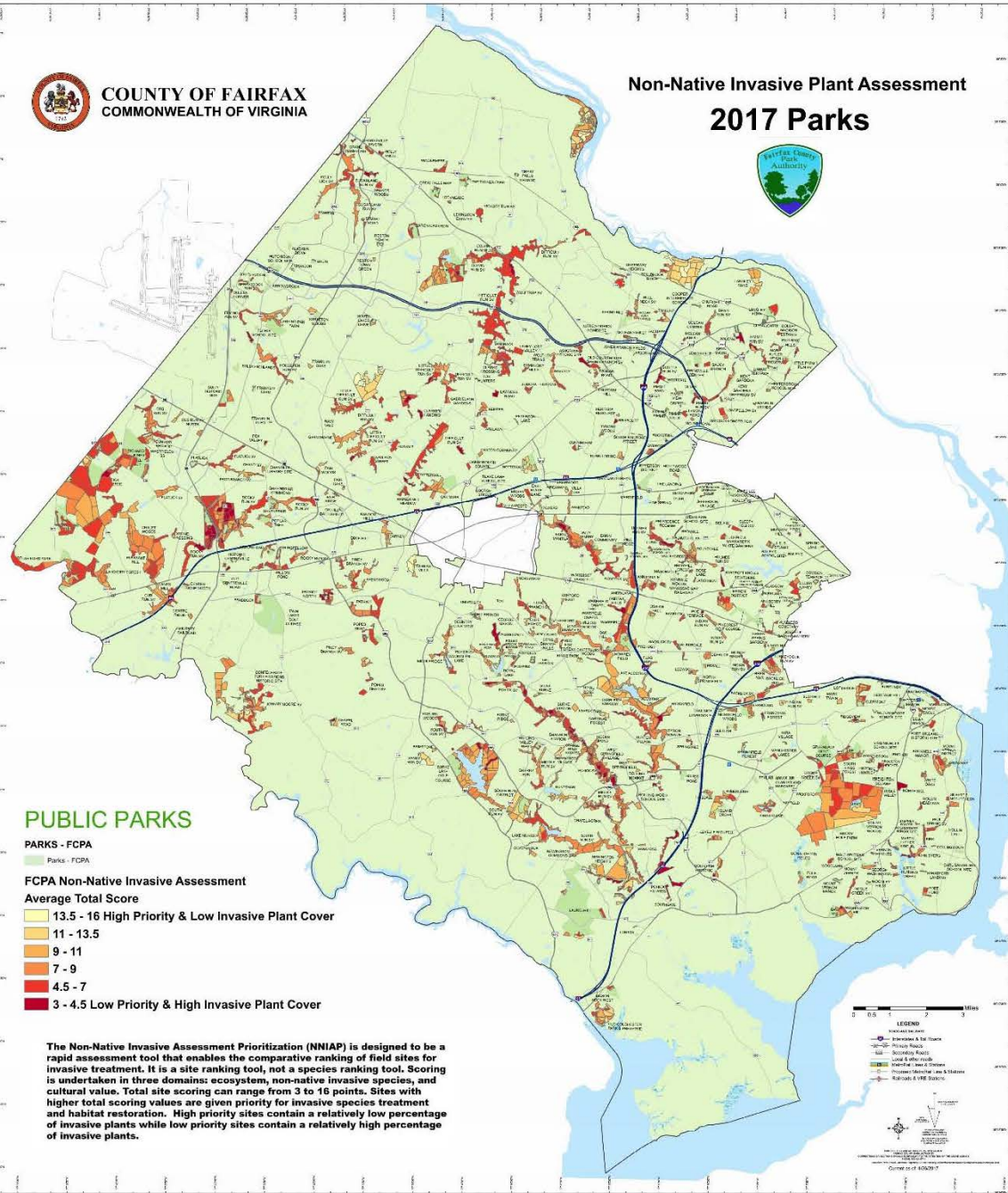


- Designed by a FCPA contractor
- Inventories, assesses, and prioritizes
- Assessment includes ecosystem, species, and cultural factors; and provides a score
- Six variables
- Quick field ranking of sites
- Score range from 3 points to 16 points
- Qualitative, visual inspection



COUNTY OF FAIRFAX
COMMONWEALTH OF VIRGINIA

Non-Native Invasive Plant Assessment 2017 Parks



PUBLIC PARKS

PARKS - FCPA
Parks - FCPA

FCPA Non-Native Invasive Assessment
Average Total Score

- 13.5 - 16 High Priority & Low Invasive Plant Cover
- 11 - 13.5
- 9 - 11
- 7 - 9
- 4.5 - 7
- 3 - 4.5 Low Priority & High Invasive Plant Cover

The Non-Native Invasive Assessment Prioritization (NNIAP) is designed to be a rapid assessment tool that enables the comparative ranking of field sites for invasive treatment. It is a site ranking tool, not a species ranking tool. Scoring is undertaken in three domains: ecosystem, non-native invasive species, and cultural value. Total site scoring can range from 3 to 16 points. Sites with higher total scoring values are given priority for invasive species treatment and habitat restoration. High priority sites contain a relatively low percentage of invasive plants while low priority sites contain a relatively high percentage of invasive plants.

0 0.5 1 2 3 Miles

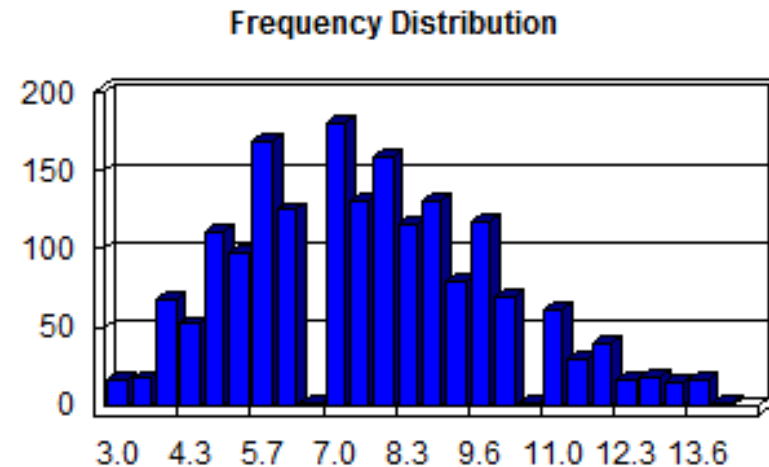
LEGEND

- Intersecting roads
- Intersecting & Rail
- Private Roads
- Secondary Roads
- Local & other roads
- Non-FCPA Parks & Sites
- Roads & I-66 Station

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NNIAP Results

- Surveyed all Park Authority land
- 1,836 patches delineated total
- 3 is the lowest (most impacted) and 14.5 is the highest (least impacted)

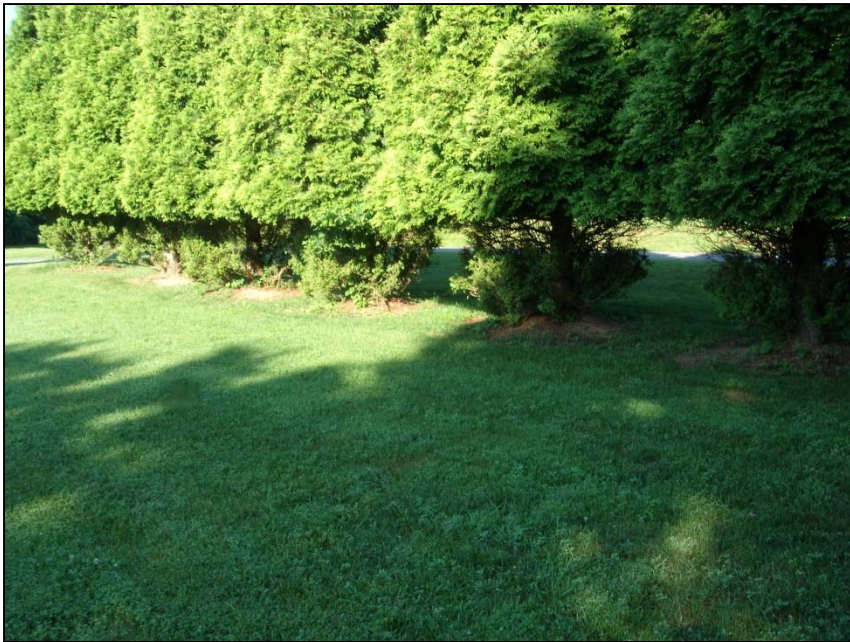


NNIAP Discussion

- NNI were detected across entire range of park & habitat types
- Native plant diversity and forest regeneration are being adversely impacted by NNI
- Significant differences exist between infestation levels in riparian vs. upland systems



NNIAP Discussion



- Primary drivers of NNI activity in park units are disturbance in the form of
 - Excessive Deer Herbivory
 - Stormwater Surges from Urbanization and Impervious Surfaces
 - Trail and Associated Park Infrastructure Construction & Maintenance

Funding



Estimated Need

- 2009 FCPA contracted an NNI assessment with Biohabitats
- Estimate for entire ~23,000 acres of parkland by contractors
- Estimate (adjusted):
 - Year One: \$41,068,821
 - Year Two: \$20,533,850

Funding



Available

- \$200,000 annually
 - IMA
 - EDRR
 - NNIAP
 - NNI Management
- Portions of 2008, 2012, and 2016 Bond Funded Ecosystem Restorations
 - Helping Our Land Heal
- 3% of select 2012 and 2016 Park Bond Development Projects
 - Development Mitigation Activities

Management Programs and Activities Outlook



- Invasive Management Area (IMA) Program
 - Continue with successful program
 - Increase number of sites in FY18 or FY19
- Early Detection and Rapid Response (EDRR) Program
 - Relies heavily on volunteers
 - Leverage technology

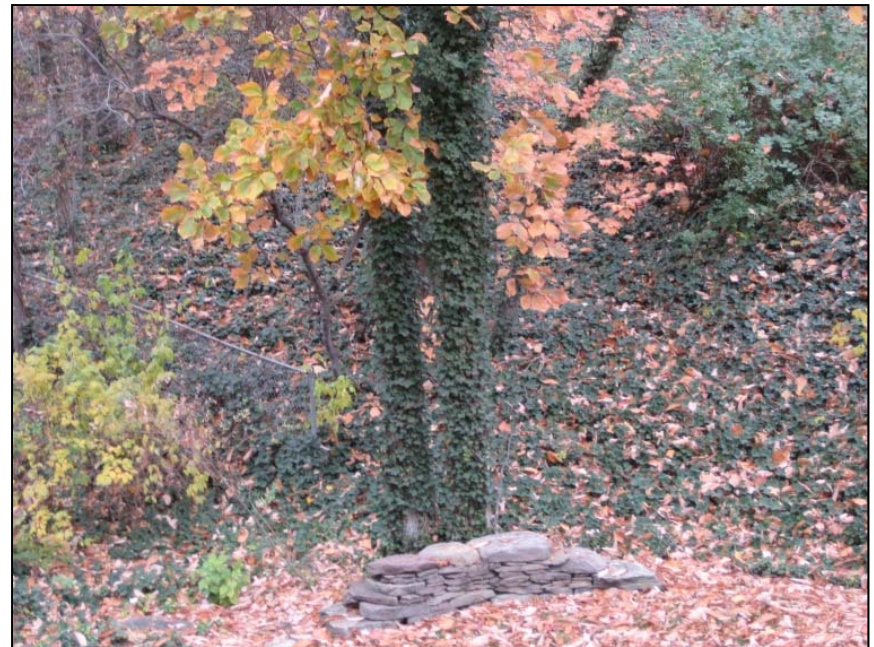
Management Programs and Activities Outlook

- Non-Native Invasive Assessment Protocol (NNIAP)
 - Continue monitoring effort
 - Publicly available
 - Integrate
- Non-native Invasive Management
 - Leverage technology
 - Increase treated acreage



Management Programs and Activities Outlook

- Helping Our Land Heal Program
 - Increase active projects from 2 to 4 per year
- Development Mitigation Activities
 - Is the standard for projects on FCPA lands
 - Expected to increase in acreage





Questions ?

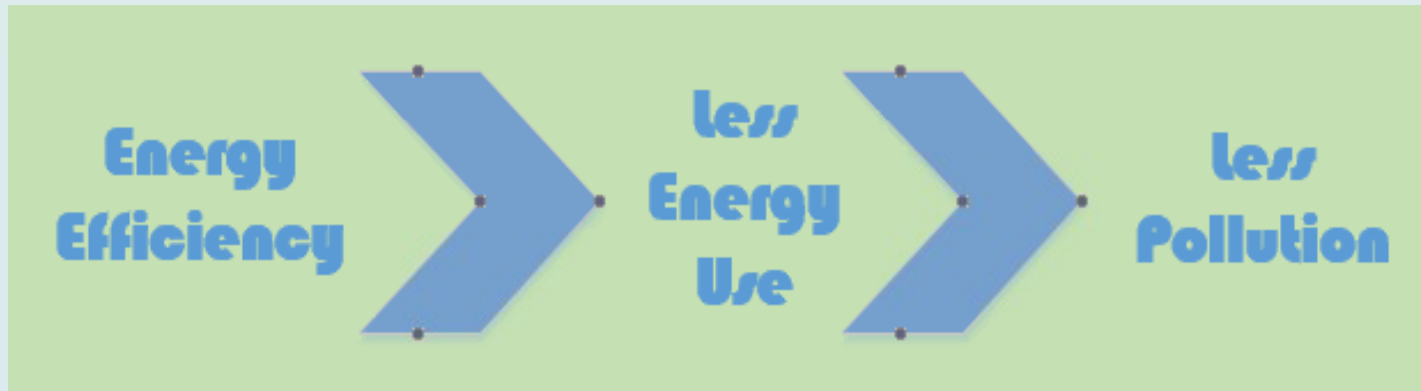
FCPA Energy Management

Fairfax County Park Authority

Presentation to:

EQAC / PAB Join Meeting

July 12, 2017



FCPA Energy Management Plan

FCPA Energy Management mission is to develop, implement, and manage an energy management program for the Park facilities.

Under this program:

- Awareness of energy management and conservation are increased within the agency
- Facility Energy consumption is monitored
- Energy audits are initiated
- Energy projects and activities are planned, managed, and coordinated
- Facility improvement / New construction projects are reviewed with regard to energy efficiency

EMP Elements

- 1 Energy Policy & Goals
- 2 Energy Awareness
- 3 Facility Energy Monitoring
- 4 Energy Feedback and Suggestions
- 5 Facility Energy Audit
- 6 Energy Project Management
- 7 Capital Project Review
- 8 Energy Sources and Supply



FCPA EMP Financial Support

- **FCPA Park Bond**
 - 2012 Park Bond - Focus on Revenue-fund Facilities
 - 2016 Park Bond - Focus on General fund Facilities & Lifecycle Lighting Projects

- **FCPA Revenue Operating Fund**
Small Energy Maintenance Projects

- **Telecommunications & Proffer**
Small Energy Projects / Initiatives

- **Fairfax County EIP**
Projects with more Positive Impacts on Environment
EIP FY18 Approved Projects
 - Water Usage and Leak Monitoring System
 - Purchasing efficient/environmental friendly lawn mowers (samples)



FCPA Types of Past Energy Projects

- **Building Lighting**
- **Building Control/Sensors**
- **Parking Lot Lighting and Control**
- **Athletic Fields Lighting and Control**
- **Athletic Courts Lighting and Control**
- **VFD Control for REC Pool Pump**
- **HVAC Control Systems**
- **Smart Irrigation System**
- **Solar Lighting**



LDRC Pool Lighting

before



2010



2015



Project	KWH/YEAR before	KWH/YEAR 2009/2010	KWH/YEAR 2015	Energy Saving
LDRC Pool Lighting (Pool/Spa lights)	110000	72000	54000	50%

AMRC Gymnasium Lighting

before

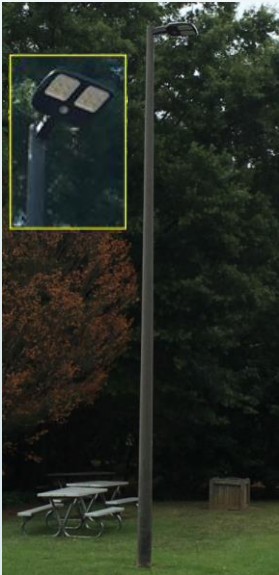


after



Project	before		after		Energy Saving
	KW	Operation Hours	KW	Operation Hours	
AMRC Gymnasium Lighting & Control	14	6,300	7	3,700	70%

GSG Lighting & Control Upgrade



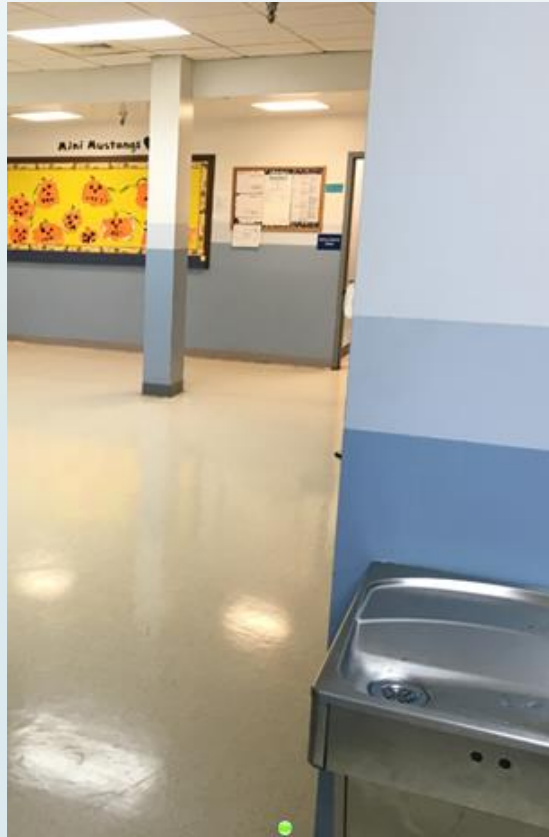
- Lobby
- Offices
- Library
- Glasshouse
- Poly Houses
- Garage
- Plant Stands
- Bathrooms
- Work Areas
- Manor House
- Entrance Road
- Parking Lot



Project	KWH / YEAR Before	KWH / YEAR After	Energy Saving
Green Spring Garden Lighting & Control Upgrade (indoor & outdoor)	128,000	33,000	74%

LDRC Building Lighting Improvement

before

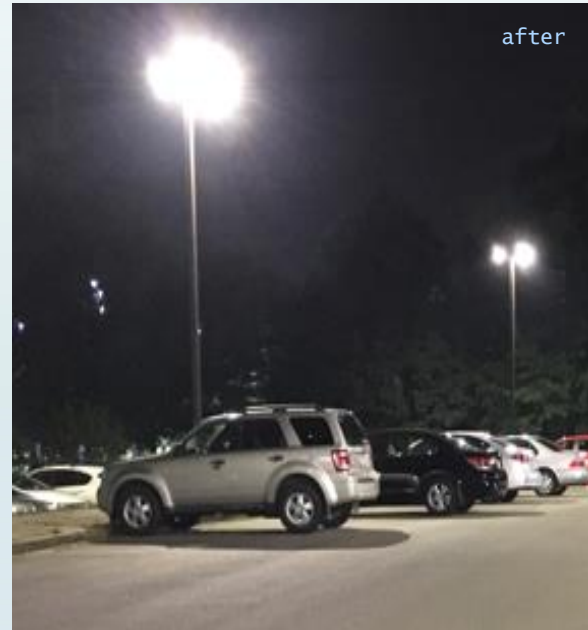


after



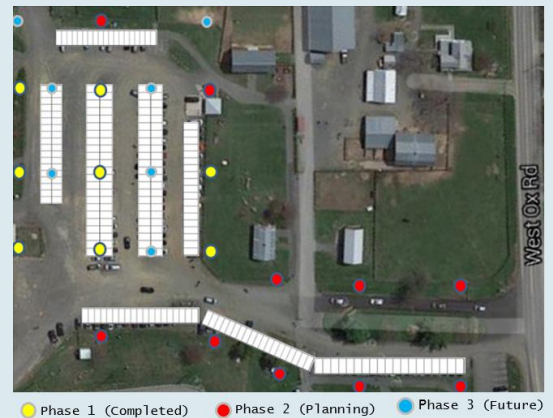
**Longer Life - 50% Less Energy Use
Payback less than 2 years**

Wakefield Parking Lot Lighting & Control Upgrade



Project	KWH / YEAR Before	KWH / YEAR After	Energy Saving
Wakefield Park - Fields Parking Lot Lighting & Control	86,000	13,000	82%

Frying Pan Parking Lot - Solar Lighting



Mason District Athletic Field 3 Lighting – LED



Light Level Improved to Ave 30 FC

Energy Saving 45 Percent

Dark Sky Compliance

Instant On

Wakefield Tennis Court LED Lighting Test



Project	Total KW / Court Before	Total KW / Court After	Energy Saving
Wakefield Park Tennis Court 1&2 – Sample Light Testing	6600	3600	45%

VFD (Variable Frequency Drive) for Pool Pump

- OMRC – One 50 HP Pump
- LDRC Spray Park – One 30 HP Pump
- PRRC – One 30 HP Pump
- CRRC - Three 15 HP Pumps (Plan)
- LDRC - One 50 HP Pump (Plan)



- Control AC Motor Speed
- Control Motor Input
- Motor Soft Start
- Decrease Water Hammer
- Higher Performance
- Lower Maintenance Costs
- Save Energy

Smart Irrigation System



- **Smart Irrigation System**
- **Program irrigation**
- **Irrigate based on Weather Condition**
- **Remote diagnostic**
- **Detect any Leak**
- **Higher Performance**
- **Lower Maintenance Costs**
- **Water Efficient**
- **Energy Efficient**

FCPA Energy Management Future Directions

- **Updating Energy Management Plan**
- **Expanding Energy Monitoring System to Improve Facilities Usage Pattern**
- **Expanding Automation for Facilities/Buildings Energy and Water Systems**
- **Expanding Building Envelop Upgrades (Windows/Insulation/Roof ...)**
- **Expanding HVAC/Mechanical System Upgrades**
- **Expanding Athletic Fields and Courts LED Lighting Upgrades**
- **Expanding Solar Electric/Solar Thermal Systems**
- **Expanding Water Usage Control Systems**
- **Working on Power Quality Systems**



<http://fairfaxnet.fairfaxcounty.gov/Dept/PARKS/Pages/POD-Energy-Management.aspx>

<http://ffxpwdevpgc01/energy/energydata/parks.htm>