

# LaRC Center Update

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Andrea Finley -- Spike Stubbs -- Peter Van Dyke





# Presentation Overview

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- LaRC's Environmental Office Update
- LaRC's Recycling Program Overview and Update
- Affirmative Procurement Program Overview and Challenges
- Pollution Prevention Program
- Other Environmental Happenings...
  - Energy initiatives, new construction, etc.

# LaRC Environmental Management Office (EMO)

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**Under New Management**

- New EMO Head is Kristen Poultney
- EMO Responsibilities

- Compliance (air, water, hazardous materials, waste)
- Remediation
- P2/Sustainability

**NEW!**

Cultural Resources (including Historic Preservation Officer)

**NEW!**

Energy Efficiency and Water Conservation Management

# NASA Langley Research Center Organization

## Director's Office



Director  
Lesa B Roe



Deputy Director  
Stephen G Jurczyk



Assoc. Director  
Cynthia C Lee

## Mission



Aeronautics  
Research  
Vicki K Crisp



Science  
Lelia B Vann



Exploration and  
Space Operations  
David E Bowles



Flight Projects  
Luat T Nguyen



Strategic  
Relationships  
Richard R Antkowiak



Ground Facilities  
and Testing  
Damodar R Ambur



Research Services  
Howard J Lewis Jr



Systems  
Engineering  
Stephen P Sandford



Systems Analysis  
and Concepts  
Ajay Kumar



Research &  
Technology  
Charles E Harris



Center Operations  
George B Finelli

EMO is in  
Center  
Operations  
Directorate

## Mission Support



Safety & Mission  
Assurance  
Grant M Watson



Systems  
Management  
Preston I Carraway  
III



Office of  
Procurement  
Virginia C Wycoff



Chief Counsel  
Michael Nick Madrid



Equal Opportunity  
Janet E Sellars



Human Capital  
Management  
Leah M Meisel



Chief Financial  
Officer  
Kenneth J Winter



Chief Information  
Officer  
Cathy H Mangum

Formerly part of Safety and Mission Assurance Directorate

# EMO located in Center Operations Directorate

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- LaRC's Center Operations Directorate (COD) includes other relevant organizations such as:
  - Projects and Engineering Branch
  - Maintenance and Utilities Branch
- Benefits of being part of COD:
  - "Strategically located to proactively manage environmental issues"
  - Close association with personnel who manage:
    - Maintenance
    - Facility rehab
    - Construction/ deconstruction work
  - EMO can review construction contracts before work is started
  - Push sustainability concepts throughout LaRC through COD

# LaRC's Recycling Program

- White Paper
- Mixed Paper
- Cardboard
- Toner Cartridges
- Scrap Metal
- Used Oil
- Fluorescent Light Tubes
- Batteries
- Used Tires
- Construction and Demolition Debris
- Plastic Bottles
- Aluminum Cans

**NEW**



LaRC's collection of **aluminum cans** and **plastic bottles** for recycling began in 2008.

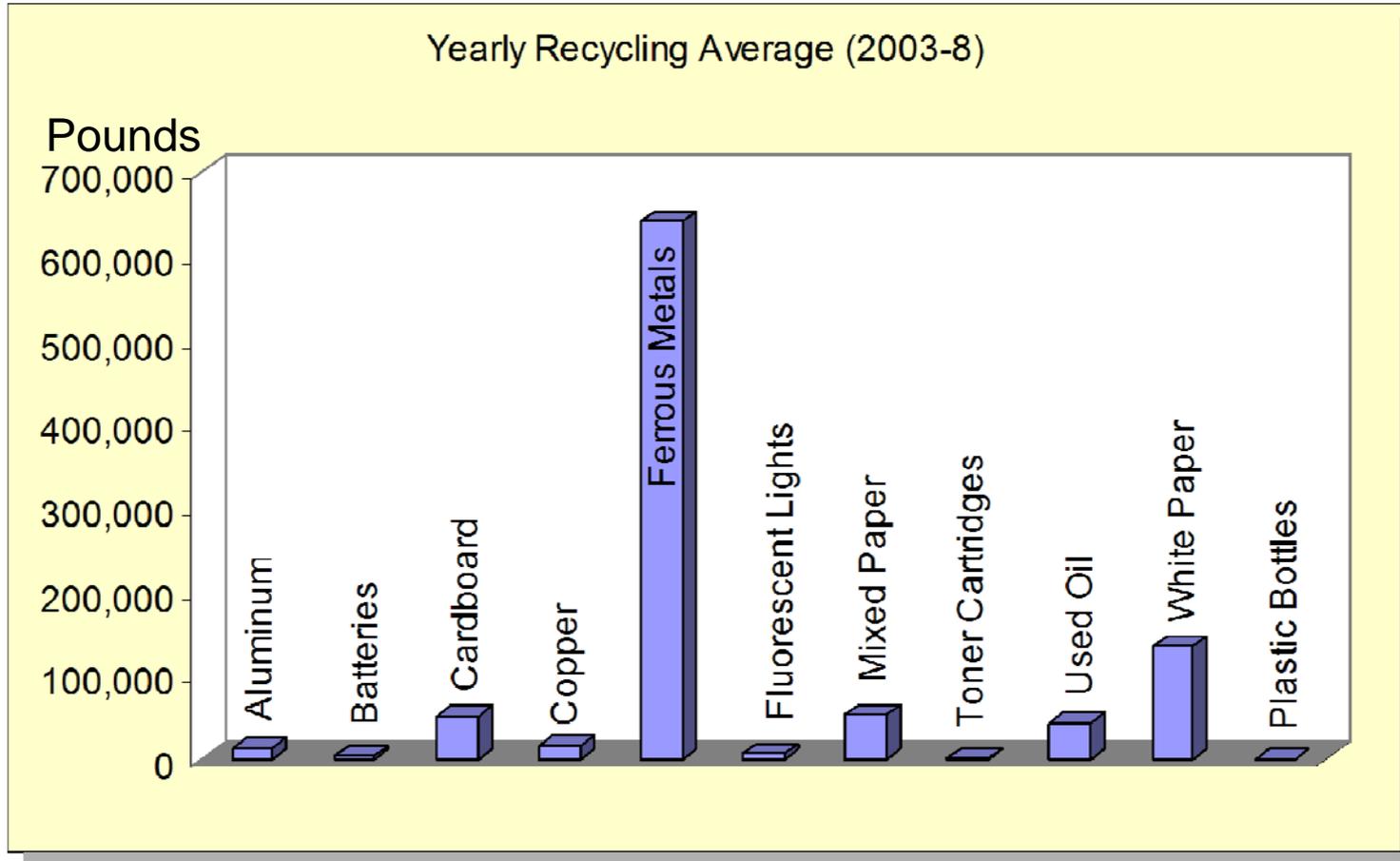


# LaRC's Recycling Program

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- EMO oversees program; coordinates sale of recyclables with Logistics Management Office
- Support contractors (SAIC) collect recyclable items and act as LaRC's Authorized Agent for the sale of recyclables
- Stopped the sale of recyclables through GSA in early 1999
- Vendor invoicing based on amount of property removed (tons) and current market value

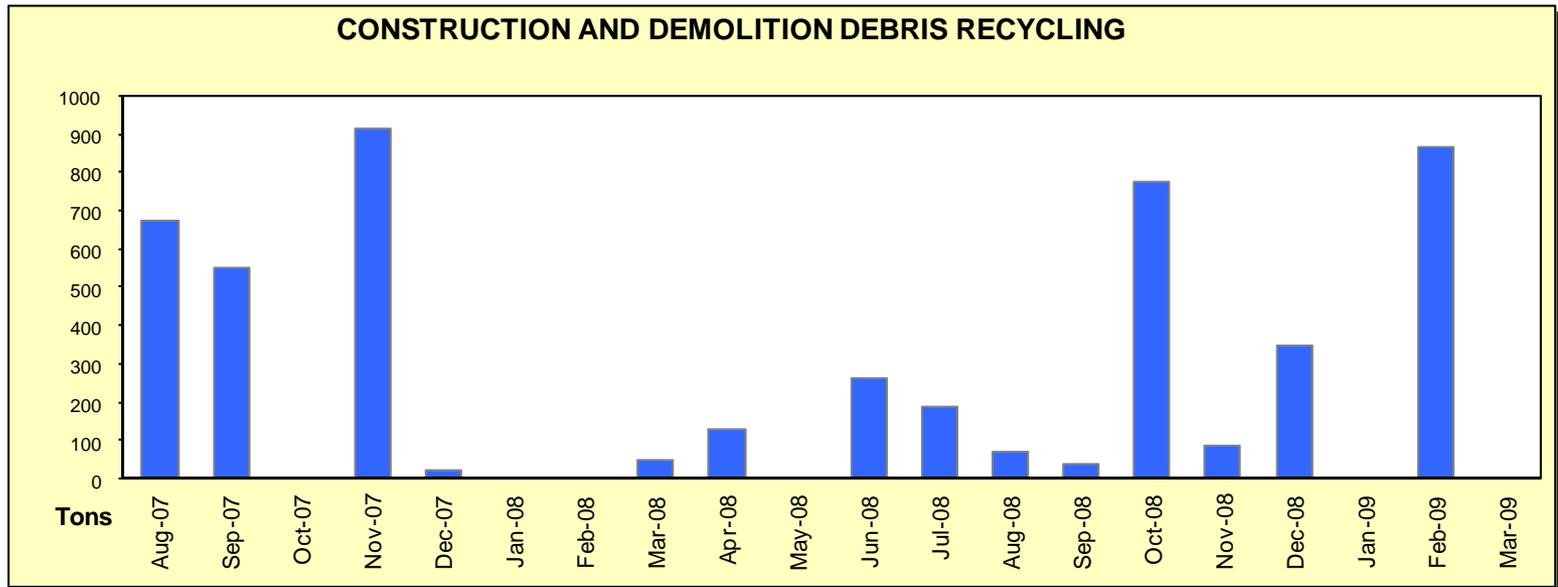
# LaRC's Recycling Numbers



Not including C&D debris

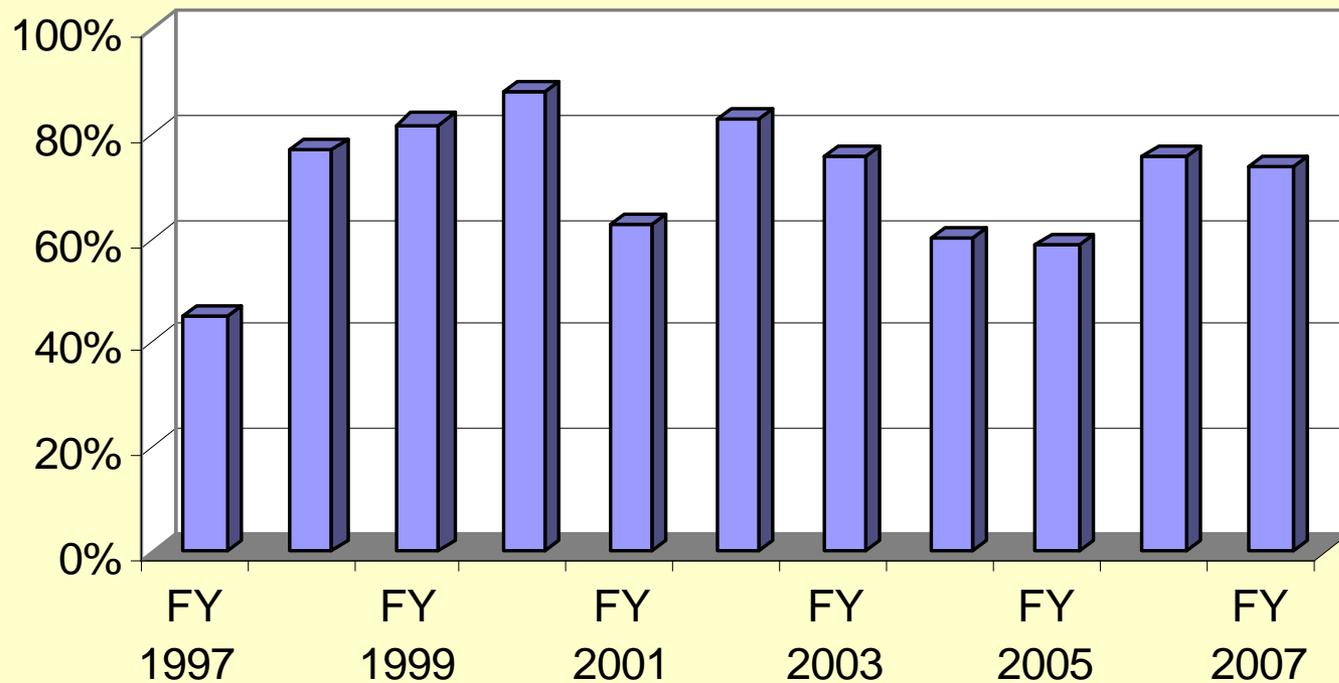
# Recycling Challenges

- Relying on deconstruction subcontractors to report accurate numbers



# Affirmative Procurement Program

Percent of Purchases Containing Recycled Content





# LaRC Mart

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- NASA Langley's onsite self service store with a wide variety of office, industrial, electrical, HVAC, safety, electronic and maintenance supplies.
- Provide a single-point data source for environmentally preferable purchases, including CPG and biobased items.
- “purchase green, document green, and report on efforts to support the government’s green initiative.”

# LaRC Mart

Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.thelarcmart.com/

View Cart | My Account / Order Status | Help

## The LaRC Mart at NASA Langley Research Center

Search

General Supplies

- Automotive
- Building Trades
- Electrical
- Furniture
- General Office Supplies
- HVAC
- Mechanical
- Plumbing
- Tools
- Safety
- Specialty
- Technology Products

CPG WAIVER

CPG Compliant

MANAGED BY

TECHNOLOGY SERVICES

TEAMING WITH

Tessada & Associates, Inc.

CERTIFIED

volusion SSL

SECURE SITE

CLICK TO VERIFY

volusion

Welcome.

The LaRC Mart Bridging the gap between business and government.....  
Team TESSADA and HRTS join to bring Langley world class service right in their own back yard.



**Government Employees** - all NASA civil servants and government employees are tax exempt, therefore all taxes will be removed prior to processing your first order and your account will be marked tax free for all future orders.

### Featured Products

Product	List Price	Our Price	Sale Price	You Save
GE Energy Smart Compact Fluorescent Bulbs Choice of 60 or 90 watt equivalent	\$21.99	\$17.99	<del>\$14.98</del>	\$7.01!
GE Energy Smart Compact Fluorescent Bulbs Choice of 60 or 75 watt equivalent	\$21.99	\$17.99	<del>\$14.98</del>	\$7.01!



http://www.thelarcmart.com/default.asp

# Affirmative Procurement Challenges

- Enforcement
- Annual self reporting of AP purchases by organization
  - Varying degrees of participation and accuracy among organizations

EPA Designated Item (and)	Technical Improvement	Quantity Purchased		On-Basis Purchased		Total Quantity	Total \$ Purchased
		with Recycled Content	with Recycled Content	without Recycled Content	with Recycled Content		
<b>IF I EN PURCHASE ALL ABOVE FULL QUANTITIES:</b>							
<b>PAPER &amp; PAPER PRODUCTS</b>							
Printing & Writing Papers		NA	NA	30	30	NA	30
Tissue Products		NA	NA	30	30	NA	30
Flapboard & Packaging Products		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>NON-PAWEROFFICE PRODUCTS</b>							
Printer Cartridges (each)		0	0	30	30	0	30
Markers (inkjet/rollerball)		NA	NA	30	30	NA	30
Plastic Clipboard (each)			NA	30	30		30
Plastic Folders		NA	NA	30	30	NA	30
Office Recycling & Waste Cans (plastic, paper, & steel)		NA	NA	30	30	NA	30
Plastic Desktop Accessories		NA	NA	30	30	NA	30
Plastic Trash Bags		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>CONSTRUCTION PRODUCTS</b>							
Building Insulation		NA	NA	30	30	NA	30
Locks/Paint		NA	NA	30	30	NA	30
Cooper		NA	NA	30	30	NA	30
Cooper Handing/Carabiner		NA	NA	30	30	NA	30
Flame Wires (rubber/plastic)		NA	NA	30	30	NA	30
Concrete & Concrete (each year)		0	0	30	30	0	30
Structural Fiberglass & Laminated Paperboard		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>TRUCKS/VEHICLE PRODUCTS</b>							
Trailer Baricades		NA	NA	30	30	NA	30
Trailer Gates		NA	NA	30	30	NA	30
Plating Slaps		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>PAINT &amp; PREVENTION PRODUCTS</b>							
Paint & Preservation Products		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>LANDSCAPING PRODUCTS</b>							
Landscaping Mulch & Fertilizer (each)		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>METALWORK PRODUCTS</b>							
Metal Abrasive (oil grade)		0	0	30	30	0	30
Engine Coolants (each)		0	0	30	30	0	30
Waxes (each)		0	0	30	30	0	30
<b>MISCELLANEOUS PRODUCTS</b>							
Industrial Hoses (each)		0	0	30	30	0	30
Signs		NA	NA	30	30	NA	30
Stencils		NA	NA	30	30	NA	30
Other*		NA	NA	30	30	NA	30
<b>HOUSEHOLD PRODUCTS</b>							
Did you purchase or test any hazardous products, other than hazardous fuels? Yes No							
Multi-Equipped Hydraulic Fluids							
Protective Lubricants							
Special Fuel Additives							
Water Tank Coatings							
Roof Coatings							
Drinking Water Filters							

\*See check of list of EPA designated items by category (Enclosure 9)

# Sump Pump Pollution Prevention Assessment

In January 2009 LaRC wind tunnel facility accidentally discharged oil via a basement sump pump into the storm sewer system. In an effort to proactively prevent further pollution of this sort, LaRC is inspecting/assessing the risk associated with each sump pump at the Center.



Assessment includes:

- Documentation and assessment of sump pump drainage areas - hazardous material storage, processes, equipment inspection, housekeeping procedures, maintenance
- Interviews with facility personnel regarding sump pump usage history, building's flood potential, etc.
- Verification of where the sump pump discharges
- GIS mapping of all sump pumps
- Rating each sump pump on a risk
- Developing corrective actions (some taken immediately)

# Sump Pump P2 Assessment

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## What are we finding?

- Poor housekeeping in basements
- Sumps are connected to both storm and sanitary
- Old, leaking equipment (valves, pumps, etc.)
- Sump pumps not in the Center inventory
- Unknown connections/discharges into the pit area

## What are we going to do?

Based on the sumps risk to the environment we will:

- Decommissioning sumps that are not needed
- Implement pump and haul if the risk can't be eliminated
- Add Oil discriminators to stop sumps from pumping oil
- Add Oil/water Separators where necessary
- Work with facility personnel to improve equipment conditions

# Sump Pump P2 Assessment Pictures

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Sump filled with oily water



Clean water in sump



# LaRC's 2009 Energy & Water Conservation Initiative

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- Lighting Upgrades– 81 Buildings
  - Upgrading with efficient lighting systems while providing quality lights to match use and physical attributes of spaces
- Water Conservation Upgrades – 67 Buildings
  - Replacing existing water fixtures, faucets, and dishwasher devices with more efficient fixtures
- Mechanical HVAC Retrofits – 11 Buildings
  - Replacing chillers, air handling units, and pump motors with higher efficiency units.
  - Installing variable speed drives on pumps and fans.
  - Performing retro-commissioning to improve operational efficiency of building's heating and cooling systems.

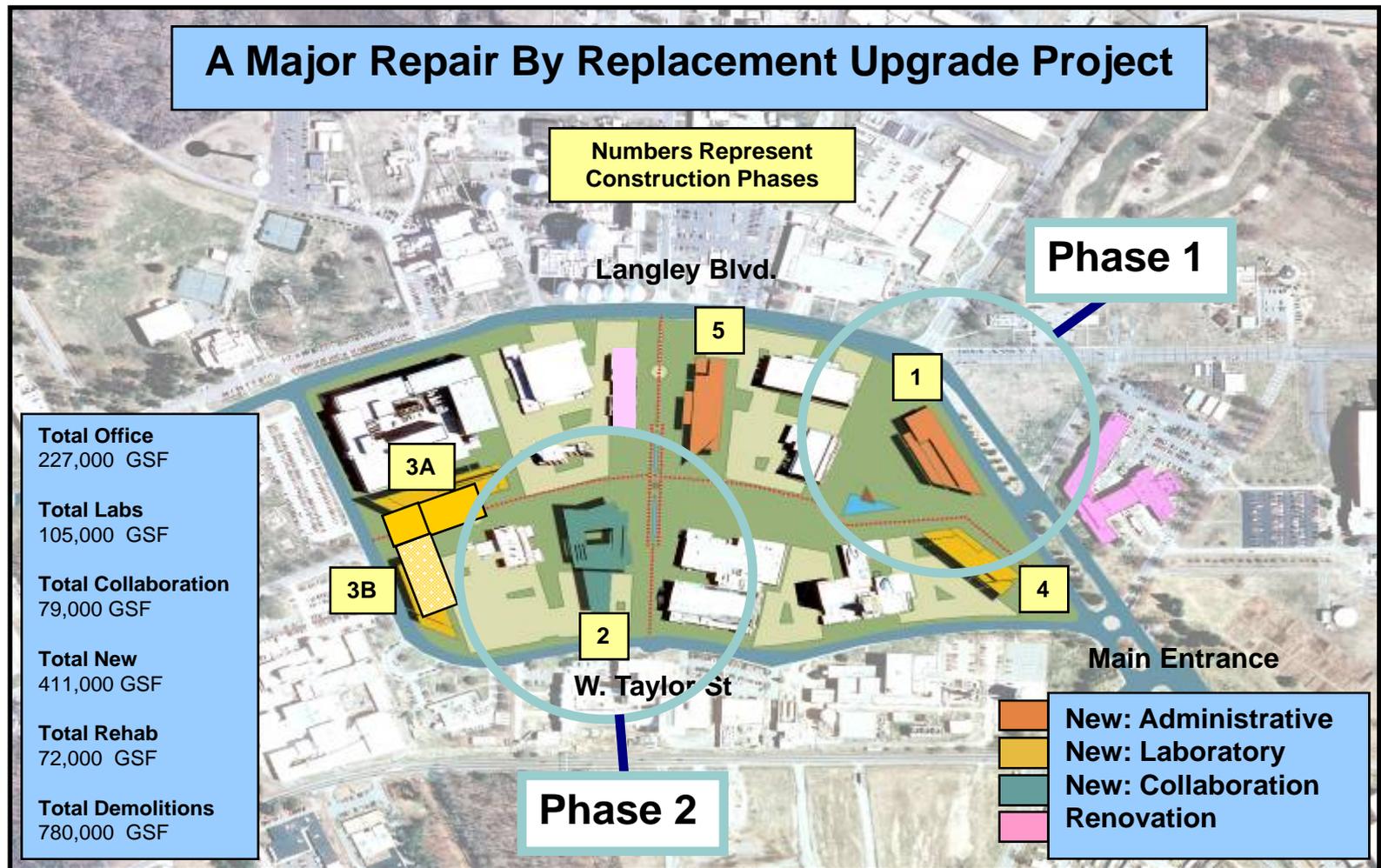
# Proposed Project Costs and Savings

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Lighting Retrofits – 81 Buildings - \$4,788 K  
Water Conservation – 67 Buildings - \$692 K  
Mechanical Retrofits – 11 Buildings - \$3,050 K  
**Total Construction Cost - \$8,530 K**

Annual Electricity Savings - \$732 K  
Annual Water Savings - \$78 K  
Annual Steam Savings - \$110 K  
**Total Annual Savings - \$920 K**

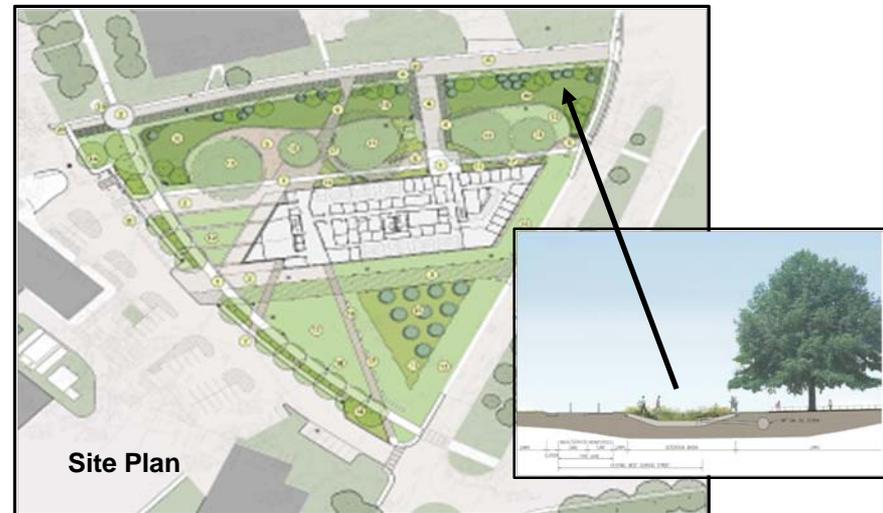
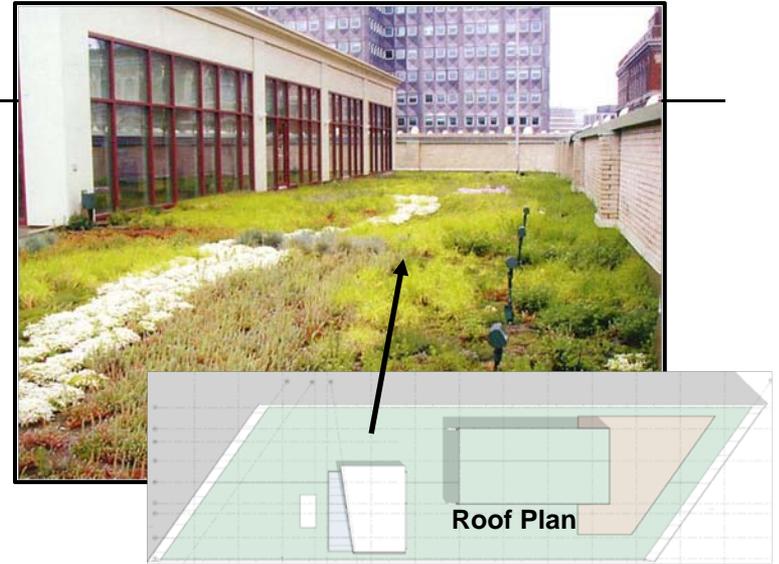
# New Town Master Plan



**6 New Buildings, 2 Rehabilitated Buildings, 10 Demolished Buildings in Core Area; Personnel Directly Affected: 1200**

# New Town Green Enhancements (1 of 4)

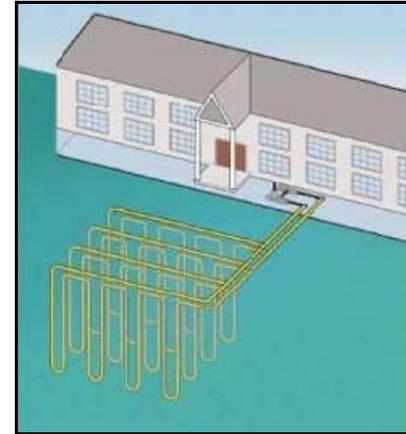
- Green Roof:
  - Reduces Heat Island Effect
  - Reduces Heating and A/C Cost
  - Extends Lifetime of Roof
  - Reduces Storm Water Runoff
  - Reduces Noise Transfer
  - Improves Rooftop View
  
- Water Bio-retention Area:
  - Reduces Storm Water Runoff



# New Town Green Enhancements (2 of 4)

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- Geothermal Ground Source Heating/ Cooling System:
  - Reduces Heating and A/C Cost
  - Uses Renewable Energy
  - Is a Low Maintenance System

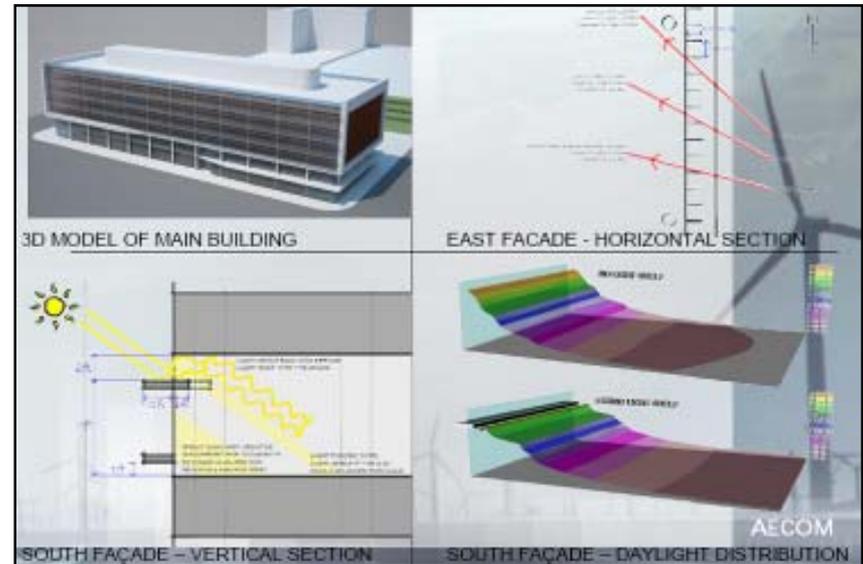


- Pervious Pavements:
  - Reduces Storm Water Runoff



# New Town Green Enhancements (3 of 4)

- Optimization of Daylighting Strategy:
  - Max Use of Natural Lighting
  - Uses Shallow Building Depth and Max Ceiling Height
  - Uses Strategic Building Orientation
  - Uses Solar Sensors on Lights



- Photovoltaic (PV) Systems:
  - Renewable Energy
  - PV Array on Penthouse Roof and Building Integrated PV at Lobby Skylight Glazing Proposed (15% of Consumption)



# New Town Green Enhancements (4 of 4)

- Underfloor Air Distribution System
  - Reduces Building Materials
  - Saves Energy
  - Provides Healthier Environment
  
- Demountable Walls:
  - Provides Flexibility
  - Same materials, colors, sound absorption qualities, and other standards as solid built-up walls



# LEED/Green Enhancements

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New Town LEED Scorecard	Points
Innovation and Design Process	5
Indoor Environmental Quality	10+
Materials and Resources	5+
Energy and Atmosphere	9+
Water Efficiency	4
Sustainable Sites	<u>11</u>
Total	44+

**26 – 32 Certified**

**33 – 38 Silver**

**39 – 51 Gold**

**52 – 69 Platinum**

## Contacts

Kristin Poultney, NASA  
EMO Head

(757) 864-8759  
[kristen.k.poultney@nasa.gov](mailto:kristen.k.poultney@nasa.gov)

Andrea Finley, SAIC  
Contract Project Manager

(757) 864-7031  
[andrea.d.finley@nasa.gov](mailto:andrea.d.finley@nasa.gov)

Spike Stubbs, NASA  
AP Manager

(757) 864-2435  
[michael.t.stubbs@nasa.gov](mailto:michael.t.stubbs@nasa.gov)

Peter Van Dyke, SAIC  
P2 Guru

(757) 864-7517  
[peter.vandyke@nasa.gov](mailto:peter.vandyke@nasa.gov)