Sustainability: Zero Waste and Beyond...

It’s only ‘waste’ if you throw it away.

Nancy Hughes, October 2017
Mission:
Cleveland Metroparks will conserve significant natural resources and enhance people’s lives by integrating high quality outdoor education, recreation, and zoological opportunities into people’s lives.

Five Strategic Goals:
• Protection
• Relevancy
• Connections
• Come Out and Play
• Organizational Sustainability

Mission:
Cleveland Metroparks Zoo Creates compelling experiences that connect people with wildlife and inspire personal responsibility for conserving the natural world.

Seven Strategic Focus Areas:
• Animal Care and Exhibition
• Wildlife Conservation
• Sustainability
• Conservation Education
• Guest Experience
• Community Leadership
• Management
African Elephant Crossing
5-acre, $25 million exhibit opened May 5, 2011
SUSTAINABLE SITES: SITE DEVELOPMENT, STORM WATER DESIGN, LIGHT POLLUTION REDUCTION

BUILT OVER AND AROUND THE SHELL OF THE OLD 1950s – ERA PACHYDERM BUILDING & ELEPHANT YARD.
MATERIALS & RESOURCES

- Materials Recycled ~ 93%
  - wood waste
  - cardboard
  - metal
  - drywall
  - plastic
  - concrete, bricks, asphalt

- ~ 24% Recycled Content in Materials

- Purchased ~ 35% Materials Locally
Energy Efficiency

Sustainable Sites, Credit 8
Light Pollution Reduction

Indoor Environmental Quality, Credit 6.2 & 7.1
Controllability of Systems, Thermal Comfort & Design
Exhibit is 4 x larger than previous, but uses 72% less water: Before: 26.3 mil gals. per year / After 7.5 mil gals.
INDOOR ENVIRONMENTAL QUALITY
CREDITS 4.1, 4.2, 4.3, 4.4, LOW EMITTING MATERIALS
ADHESIVES & SEALANTS, PAINTS & COATINGS, CARPET SYSTEM,
COMPOSITE WOOD & AGRIFIBER PRODUCTS
INNOVATION: SUSTAINABILITY MESSAGING

INNOVATION & DESIGN PROCESS, CREDIT 1.2, GREEN EDUCATION PROGRAM

People and elephants
COMPETE FOR WATER

In southern Africa water is scarce – and desperately needed by elephants and people alike. Conflict over water can be dangerous and deadly.

Thirsty elephants do anything for water.
They’ll climb into water holes, making the water unfit for people. They’ll dig up people’s water pipes and even break into water storage containers.

What can people do?
Conservation groups such as Elephant Human Relations Aid and Cleveland Metroparks Zoo help local people figure out ways to share water with elephants, so elephants and people both get what they need.
ENERGY

~128 BUILDINGS/STRUCTURES; > 416,142 FT²

• Do all of our buildings have meters on them?
• How old are our appliances and equipment?
  • Is our equipment Energy Star certified?
  • Is our lighting updated to T-8 FLs or LEDs?
• Have we installed motion sensors where applicable?
• Are computers and lights turned off when not in use?
  • What is plugged in...and why?
RESOURCE USE: HEATING/VENTILATION/AIR CONDITIONING (HVAC)

Furnace Replacement at Monkey Island

Built in the early 1900’s
RESOURCE USE: ELECTRICITY

LED LIGHTING

2016 Recycling Totals

| Bulbs: Fluorescent, CFLs, HID, Flood, Incandescent, aquatic specific | 2,244 |
2016 Solar

- 96 solar modules that provide 27.36 kW of electricity.
  - This offsets 50,000 lbs. of CO2 per year =
    21,000 #s of coal burned = greenhouse emissions of 4 cars per year.

2017

- 64 hand-carved animals, crafted by Carousel Works in Mansfield, OH
### Resource Use: Fuel

<table>
<thead>
<tr>
<th>Year</th>
<th>Unleaded Gas Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>29,331.1</td>
</tr>
<tr>
<td>2008</td>
<td>25,950.8</td>
</tr>
<tr>
<td>2009</td>
<td>22,274.8</td>
</tr>
<tr>
<td>2010</td>
<td>22,026.7</td>
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<tr>
<td>2011</td>
<td>21,707.3</td>
</tr>
<tr>
<td>2012</td>
<td>20,295.9</td>
</tr>
<tr>
<td>2013</td>
<td>19,008.1</td>
</tr>
<tr>
<td>2014</td>
<td>18,694.0</td>
</tr>
<tr>
<td>2015</td>
<td>16,829.8</td>
</tr>
</tbody>
</table>

*On Earth Day, began **limited driving policy** in the Zoo after the park opens for our busiest months, April – September.

> Added 8 bikes to our fleet

- **Fuel Savings**
- **Reduced Air Emissions**
- **Reduced Noise Pollution**
WATER – QUANTITY, QUALITY, & STORM WATER MGMT.

✓ Do all of our buildings have meters on them?

• In our buildings, can we use:
  ✓ Motion sensors for faucets/toilets
  ✓ Aerators for faucets
  ✓ Dual flush toilets
  ✓ Compost toilets
  ✓ Waterless urinals
  ✓ High efficiency dishwashers / washing machines

✓ Are irrigation heads positioned properly?

• For storm water management, do we utilize:
  ✓ Rain gardens / barrels
  ✓ Bioswales
  ✓ Green roofs
  ✓ Pervious pavement
Storm water runoff from developed areas increases flooding potential and carries pollutants from streets, parking lots and lawns into local streams and lakes. This bioswale protects water quality and reduces storm water runoff.
Rain gardens can absorb most rainfall events and filter runoff that carries pollutants from streets, parking lots and lawns into local streams and lakes.
WATER CONSERVATION:

Seal /Sea Lion Pool pump replacement

2013 ECO Grant
$3,747.20

RESULTS: new system saves over 80% water vs. old system which wasted 7,200 gallons per day!

ECO Grants are funded from RECYCLING REVENUE.
RESOURCE USE: WATER CONSERVATION

WATER BOTTLE REFILL STATIONS & NEW COOLING MISTERS

Timed Operation Conserves Water
LANDSCAPE: RESOURCE USE

Planting Trees & Browse
Two Amur Tigers:  
a female, Dasha, 16,  
a male, Klechka, 13,  
born at the Toledo Zoo.
Sustainable Purchasing

> CMP POLICY 2014 <

Sustainable Products Are:

- Made with recycled content
- Highly energy efficient
- Designed to be long lasting
- Recyclable and/or compostable
- Made from renewable resources
- Less toxic than conventional goods
- Manufactured responsibly and locally
- Fairly traded
- Safely managed at the end of their life
RESOURCE USE: RESPONSIBLE PURCHASING - BUILDING CLEANING SYSTEM

- Non-toxic
- Biodegradable
- No or minimal VOC’s
- No carcinogens
- Less irritating to skin and eyes
- No or minimal fragrance
ZOOLOGICAL PROGRAMS - NEW HAY BARN

AUG 2017

HAY BARN
sponsored by
Cleveland Zoological Society
Daniel Maltz,
The Hilton and Tamar Maltz
Family Foundation
The Krenzinger Foundation
The Kenneth A. Scott
Charitable Trust
Dedicated: Spring 2017
Partnership starting in 2013 with Cuyahoga Valley National Park to lease 50 acres to be farmed for Zoo hay.

Purchased a semi-trailer with park recycling revenue to haul the hay.

Use ~400 tons of Timothy Hay for animal feed annually.

First Harvest 2017
HAY BARN

8-9-17 Unloading 1st delivery (of 3) of ~ 54 tons of ‘straw’ grown at CVNP

“Many hands make light work!”
RECYCLING REVENUE:

- Aluminum cans and scrap
- Cardboard – 1 and 2-ply
- Cell Phones
- Metals – appliances, ballasts, brass, copper, iron, stainless steel, wire
- Pallets – wooden
- Paper – newspapers, magazines, books, catalogs, junk mail, envelopes, office papers, paper bags, phone books
- Printer Cartridges – ink jet and toners
- Shrink-wrap plastic
RECYCLING EXPENSE:

- **Appliances** - TVs and Microwaves
- **Batteries**
- **Electronic Media** - CDs, DVDs, VCR tapes, etc.
- **Fluorescent/other lamps & bulbs**
- **Glass** - bottles and jars
- **Hazardous** - cleaners, oil paints, solvents, pesticides, etc.
- **Organics:**
  - **Food waste** and compostable plates/cups/silverware
  - **Manure** - animal wastes and straw/wood shavings
- **Plastics** - rigid plastics
- **Tires**
$25 per ton revenue

- Newspapers
- Magazines & Catalogs
- Paper bags
- Junk mail / Envelopes
- Office/School papers/Folders
- 2-ply corrugated Cardboard
- 1-ply cardboard
- Paperback books
- Hardback books
- Phonebooks
Illegal mining and trading of certain ores in the DRC has been exploited to fund armed conflict and serious human rights abuses.
7-19-17  Annual Employee Picnic – Zero Waste

**LANDFILLED:**
< 10 pounds - ice-cream wrappers, mayonnaise packets, and miscellaneous plastics.

**RECYCLED:** ~15 pounds of aluminum cans & aluminum foil; paper envelopes & single-ply cardboard; corrugated cardboard; a few steel food cans and fuel cans; plastic bottles and film plastic

**COMPOSTED**
371 pounds of food waste, plates, napkins, silverware, ice cream sticks.

The plates and napkins were a paper material, made from trees. The silverware was made from a sugar-based material called bagasse and was certified to be compostable by the Biodegradable Products Institute.
15 projects submitted; 5 projects awarded funding to be completed in 2017.

<table>
<thead>
<tr>
<th>Project Location</th>
<th>Submitted By</th>
<th>Project Details</th>
<th>Amount Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acacia Mgmt. Ctr.</td>
<td>Connie Hausman</td>
<td>Install <strong>hoop house</strong> that will be used to grow native plants for use throughout CM</td>
<td>$5,013.00</td>
</tr>
<tr>
<td>Bedford</td>
<td>Rob Angiocchi</td>
<td><strong>Solar lighting</strong> for interior and exterior of restroom</td>
<td>$1,567.00</td>
</tr>
<tr>
<td>Hinckley</td>
<td>Amanda Creque</td>
<td>Install <strong>air injection system</strong> at Ledge Pool to remove iron from well water.</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>South Chagrin</td>
<td>Ryan Shalashnow</td>
<td><strong>Solar lights</strong> for main entrance sign.</td>
<td>$1,650.00</td>
</tr>
<tr>
<td>Zoo - RainForest Aviary Exhibit</td>
<td>Ryan Leasure</td>
<td>Install <strong>automatic fill system</strong> in pool.</td>
<td>$2,000.00</td>
</tr>
</tbody>
</table>

{Total Requested from all projects: $66,804.22}  **TOTAL AWARDED:**  $11,230.00

$ $ $ FOR ECO GRANTS COMES FROM PARK RECYCLING EFFORTS
ORGANICS RECYCLING – Zoo Compost Program

~5,000 cubic yards annually (~ 3.5 tons per day)
Herbivore Animals
COMPOST PROCESS AT THE ZOO
COMPOST PROCESS AT THE ZOO

aerating & monitoring
COMPOST PROCESS AT THE ZOO

Screening mature compost
Mature Compost:

- fluffy & crumbly
- smells earthy, sweet
- dark in color (but not black)
- slightly moist
USING ZOOPOO COMPOST ON GROUNDS

Zoo Entrance Bed
USING ZOOPOO COMPOST IN CLEVELAND METROPARKS AND ON OUR GOLF COURSES

Monarch Butterfly Way-station at North Chagrin Reservation
BUY ZOOPOO COMPOST

- Spring – Buy in April, Pick up in May
- Fall – Buy in September, Pick up in October

SOLD OUT in 2.5 hours!

1 - $45, 2 - $60

Soil and Compost

Soil

$20

$5
FutureforWildlife.org

Nancy Hughes, Manager of Sustainability
216.635.3337
neh@clevelandmetroparks.com