People Planet Profit

A small zoo’s adventures in sustainability
Strategic Leadership Components:

“If I were given one hour to save the planet, I would spend 59 minutes defining the problem, and one minute resolving it.” - Albert Einstein

Take a step back:

1. Understand priorities and future agendas, develop clarity on how you can contribute in a value-added way.

2. Develop a personal process to help you think strategically about your role and the role of your team in the organization’s strategy—things that are independent and unique.

3. Leading, guiding, and influencing your team members to be strategic thinkers about their own responsibilities.
Defining Sustainability

Planet
- Protection of natural resources
- Pollution prevention
- Habitat protection

People
- Standard of living
- Community
- Equal opportunity

Prosperity
- Economic growth
- Consumer purchases
- Production savings

Sustainability: meeting the needs of the present without compromising the ability of future generations to meet their own needs

Akron Zoo Mission: We connect your life to wildlife while inspiring lifelong learning and conservation action
S.O.A.R

- Strengths
- Opportunities
- Aspirations
- Results
Akron Zoo Aspirations:

- **Engagement:** Create an understanding of sustainable operations with staff, vendors, volunteers and guests.
- **Energy:** To be Net Zero.
- **Fossil Fuel:** 50% gasoline and oil reduction by 2020 compared to 2009.
- **Waste:** To produce zero waste.
- **Local Food:** To support local food through our operation.
- **Procurement:** To purchase environmentally sensitive products and support green vendors.
- **Program / Service:** Ensure sustainability is a key message.
- **Water:** Reduce water and sewer by 50% compared to 2009.
The Approach

Evaluation criteria:

- **Mission feasibility** – does our mission support it?
- **Capital feasibility** – can we afford to purchase it?
  What is the return on investment (ROI)?
- **Operations feasibility** – can we afford to maintain it?
- **Staff feasibility** – do we have the skill set to take care of it?
# Water Aspiration: Reduce Water and Sewer use by 50%

<table>
<thead>
<tr>
<th>Category</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storm water Management</td>
<td>1) Complete system lot D; dev/install interp. materials</td>
<td>1) Eval. storm solutions to meet site specific issues in AZP; refer to baseline data</td>
<td>1) Install priority area storm mg't for AZP</td>
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<tr>
<td></td>
<td>2) Develop raingarden for NE KK corner grading project</td>
<td>2) Propose priority areas</td>
<td>2) Review install. of storm water mg't in Big Exhibit and interp. materials</td>
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<tr>
<td></td>
<td>3) Eval. existing systems and trouble areas w staff. Focus on metering</td>
<td>3) Review Big Exhibit design for storm water BMP</td>
<td>3) review storm retention ponds C Lot for health</td>
</tr>
<tr>
<td>Water Harvesting / Recycling</td>
<td>1) review existing rain barrels in AZP</td>
<td>1) install approved new water harvesting systems at Grizzly</td>
<td>1)Create list of priority harvesting opportunities</td>
</tr>
<tr>
<td></td>
<td>2) proposals for renov. to rainbarrels</td>
<td>2) review AZP water harvesting opportunities</td>
<td>2) Propose for impl. 2019.</td>
</tr>
<tr>
<td>Water Use reduction</td>
<td>1) Install condensation unit Meso</td>
<td>1) Install 2nd condens. unit</td>
<td>1) Eval. water conservation implementation at Big Exhibit and interp. materials for public</td>
</tr>
<tr>
<td></td>
<td>2) Eval. potential replication</td>
<td>2) Eval. water conservation in Big Exhibit.</td>
<td></td>
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<tr>
<td></td>
<td>3) portable H2O meter design</td>
<td>3) install 2nd priority metering</td>
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<tr>
<td></td>
<td>4) review irrigation metering needs and install priority area</td>
<td>4) purchase portable H2O meter (hot H2O in Meso bldg.)</td>
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</tbody>
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Set Big Hairy Audacious Goals (BHAG)

Resource Usage BHAG Example:

- 2009: To reduce our water and sewer use by 50% compared to 2009 baseline.
- 12/31/16: actual reduction = 80+% 
- How did we accomplish this:

One piece at a time! = Good Stewardship

Executive Commitment
Board Commitment
Staff Commitment
Stewardship: The Secret To Successful Funding

**Development office:** “Know your story” – they need a compelling “Case Statement” that supports your mission. (Donor Stewardship)

**Board:** Tell the compelling story and how sustainability supports your mission. What is the financial bottom line (ROI)?

**Executive Leadership:** Tell the compelling story and how sustainability supports your mission. Describe the financial bottom line (ROI). What is the strategy?

**Management:** Tell the compelling story and how sustainability supports your mission. Describe the financial bottom line (ROI). Describe the strategy. What are the tactics?

**Staff:** How can I be a part of this?............. **SUCCESS!**
“Big C” Expenditures

- Field Conservation (Emergency) = $39,560
- Education (Awareness) = $694,272
- Collection Sustainability (Prevention) (50% of animal care budget) = $1,297,761
- Green Practices (Root cause) (annual capital * labor excluded) = $110,000
- Research = inside “Collections Sustainability”

=15% or $1.99 million to invest in “Big C” activities.
2015 parking lot: more than just 168 new spaces

Stormtech underground water detention system
Focalpoint: intensive bioretention cell design
Bike Shelter connector to the Ohio & Erie Canal Towpath Trail
Akron Zoo Organic Materials Handling Building

or

the Compost Castle: *let's talk trash*
Akron Zoo history of waste diversion
Zoo zero waste aspirations now...

Investments in sorting containers, staff training, compostable flatware, hauling fees

Change in haulers has increased fees, reduced diversion rates

Zoo commitment is un-phased.
Steps to a new solution

• met with ReWorks to explore options

• convened new dumpster dives to establish new baseline data
Summary of dumpster dives and waste audits during 2016 season for average daily production

4 different Dumpster dives with Reworks

2 different dumpster dives with Big Hanna representatives

3 days of tracking just organic waste being collected in park for Organix
Summary of dumpster dives and waste audits during 2016 season for average daily production

<table>
<thead>
<tr>
<th>Organic waste (trash)</th>
<th>Trash</th>
<th>Organic waste (compost)</th>
<th>Total average daily production</th>
</tr>
</thead>
<tbody>
<tr>
<td>136 lbs/day</td>
<td>87</td>
<td>193</td>
<td>416</td>
</tr>
<tr>
<td>33%</td>
<td>21%</td>
<td>46%</td>
<td>100%</td>
</tr>
</tbody>
</table>

4 different Dumpster dives with Reworks

2 different dumpster dives with Big Hanna representatives

3 days of tracking just organic waste being collected in park for Organix
Big Hanna enables Zoo to divert organic trash to compost

Existing inventory: all cups, plates, flatware have been tested and cleared at the other Ohio Big Hanna locations

Testing continues on biodegradable ‘rubber gloves’ as potential additional substitute purchase

Initial evaluation shows potential for composting on site, using aerobic digestion, without the smell or rodent issues.

Structure under consideration would complement storage barn aesthetic
Fresh food waste and sawdust or pelletized sawdust is fed into the Composter.  
Thermophilic phase – 40-70% moisture. High temperature: 122-140°F 
Mesophilic phase – Lower moisture. Temperature: 75-105°F 
Maturation phase – Low moisture. Temperature: 70°F  
Compost is automatically emptied from cylinder.
Pulp is fed into in-vessel composter

Food waste is converted to compost over 24 day period
Ventilation Fan for Bio Filter
“In the bag...”
Proposed compost center is 1/3 the size of the event storage barn
Aerial photo of site:

- Komodo Service Gate
- Akron Zoo “C” lot
- Edgewood Avenue
- Welcome Center
- Proposed building location
East elevation

Passive solar heater

3' door

12' roll up garage door, lockable

Parcel drop bins (metal)

12' roll up garage door lockable
Concrete pad w/ tubes for slab heat. LED lighting and electric heating sufficient to maintain temperatures above freezing year round; roof ventilation required and exhaust fans in side walls required as well.

Ground slopes east; retaining wall expected on west side.

Alternative size is 48'x32'

100A service
Utility sink

Work space w/cabinets below. 24'' deep top

Door
12' roll up garage door
Parcel drop bins (metal)
12' roll up garage door
Komodo Kingdom gate

Passive solar heater

Utility sink

100A service

Door

12' roll up garage door
Questions?
Thank you!

Contact:

Chris Norman

c.norman@akronzoo.org

330.375.2550 ext. 7248