

AZA GREEN GUIDE

Introduction to Building Zoo & Aquarium
Sustainability Plans

VOLUME 1



CREATED BY

AZA Green Scientific Advisory Group

AZA Conservation & Science Department



Formal Citation:

AZA Green Guide: Introduction to Building Zoo & Aquarium Sustainability Plans. (2013). Association of Zoos and Aquariums, Silver Spring, MD. Volume 1.

Publication Dates:

1st Edition: April 2011

2nd Edition: September 2013

AZA Conservation & Science Department Staff Authors and Editors:

Deborah Luke, PhD, Vice President, Conservation and Science
Rebecca Greenberg, Program Assistant, Conservation and Science
Maya Seaman, Intern
Alex Shimm, Intern
Felicia Spector, Intern
Arslan Ahmad, Intern

Significant Contributors:

[Jennifer Hale](#): (Chair) Director of Safety and Sustainability, Denver Zoo
[Doug Piekarz](#): (Vice Chair): VP, Planning and Conservation Programs, Akron Zoo
[Michelle Parker](#): (Past Chair): Director of Sustainable Practices, John G. Shedd Aquarium
[Meg Matthews](#): (former) Manager of Conservation Communications, John G. Shedd Aquarium
[Ruth Allard](#): (CEC Liaison) EVP, Conservation and Visitor Experiences, Phoenix Zoo
[Mark Fisher](#): Sr. Director of Facilities, Planning and Sustainability, Cincinnati Zoo and Botanical Garden
[John Garner](#): Conservation & Education Manager, Point Defiance Zoo & Aquarium
[Julie Henry](#): Director, Conservation Enterprises
[Barbara Long](#): Vice President, Aquarium of the Pacific
[David McGuire](#): VP, Architecture and Planning, St Louis Zoo
[Mark Plunkett](#): Conservation Manager, Seattle Aquarium
[Aaron Pope](#): Manager of Sustainability Programs, California Academy of Sciences
[Mary Joan Pugh](#): Deputy Director, North Carolina Zoo
[Beth Stark-Posta](#): Curator of Behavioral Husbandry and Research, Toledo Zoo
[Chris Waldron](#): (former) Sustainable Operations Manager, Philadelphia Zoo

Table of Contents

Introduction	4
Planning	5
Establish a Green Team	6
Create a Sustainability Mission and/or Vision Statement	6
Quantify Operational Baselines.....	7
Prioritize Sustainable Practice Opportunities & Strategies	8
Develop and Maintain a Dynamic Sustainability Plan.....	8
General Recommendations for Sustainability Topic Areas	10
Awareness.....	10
Awareness Recommendations:	10
Awareness Resources:	11
Chemical Management	12
Chemical Management Recommendations:	12
Tips for your Sustainability Plan:.....	12
Chemical Management Resources:.....	13
Construction	14
Construction Recommendations:.....	14
Tips for your Sustainability Plan:.....	14
Construction Resources:	15
Energy Management.....	16
Energy Management Recommendations:.....	16
Tips for your Sustainability Plan:.....	16
Energy Management Resources:	17
Fuel Management	18
Fuel Management Recommendations:	18
Tips for your Sustainability Plan:.....	18
Fuel Management Resources:	18
Innovation.....	20
Innovation Recommendations:.....	20
Tips for your Sustainability Plan:.....	20
Innovation Resources:	20
Purchasing	22
Purchasing Recommendations:	22
Tips for your Sustainability Plan:.....	22
Purchasing Resources:	23
Waste Management	24
Waste Management Recommendations:.....	24
Tips for your Sustainability Plan:.....	24
Waste Management Resources:.....	25
Water Management.....	26
Water Management Recommendations:	26
Tips for your Sustainability Plan:.....	26
Water Management Resources:	26
Glossary	28

Introduction

The Association of Zoos and Aquariums (AZA) is concerned about species survival and ecosystem health and is therefore dedicated to making substantial positive impacts for their conservation. AZA-accredited zoos and aquariums serve as conservation centers that make significant contributions towards sustainable practices, field conservation, research, and informal educational programming, and provide society the opportunity to develop personal connections with the animals in their care.

Sustainable business operations are becoming the “new normal” in corporate America, not only for their financial benefits, but also due to stakeholder demand. As trusted conservation leaders, zoos and aquariums understand that conservation of wildlife requires the conservation of natural and man-made resources; therefore, business operations should incorporate sustainable practices that conserve these resources, save money, and demonstrate the proverbial idea that “Conservation Begins at Home”. Zoos and aquariums that publicly demonstrate their commitment to wildlife conservation by “walking the talk” model ways in which guests can learn how to become part of the solution for many of the environmental problems at the root of the current extinction crisis.

Volume 1 of the AZA Green Guide, entitled “Introduction to Building Zoo & Aquarium Sustainability Plans”, is designed to help zoos and aquariums gain a basic understanding of sustainable practices, become fluent in the language of sustainability, and begin to develop a comprehensive ***Sustainability Plan***. This Guide is a living document that is updated as new information becomes available. Specific terms, highlighted in bold italics, are defined in the glossary. Chapters are categorized by the sustainability topic areas as defined for the [AZA Green Award](#) and each provides links to related resources, examples of successful AZA-accredited zoo and aquarium sustainability strategies, and a listing of related references. These sustainability topic areas include:

- Awareness
- Chemical Management
- Construction
- Energy Management
- Fuel Management
- Innovation
- Purchasing
- Waste Management
- Water Management

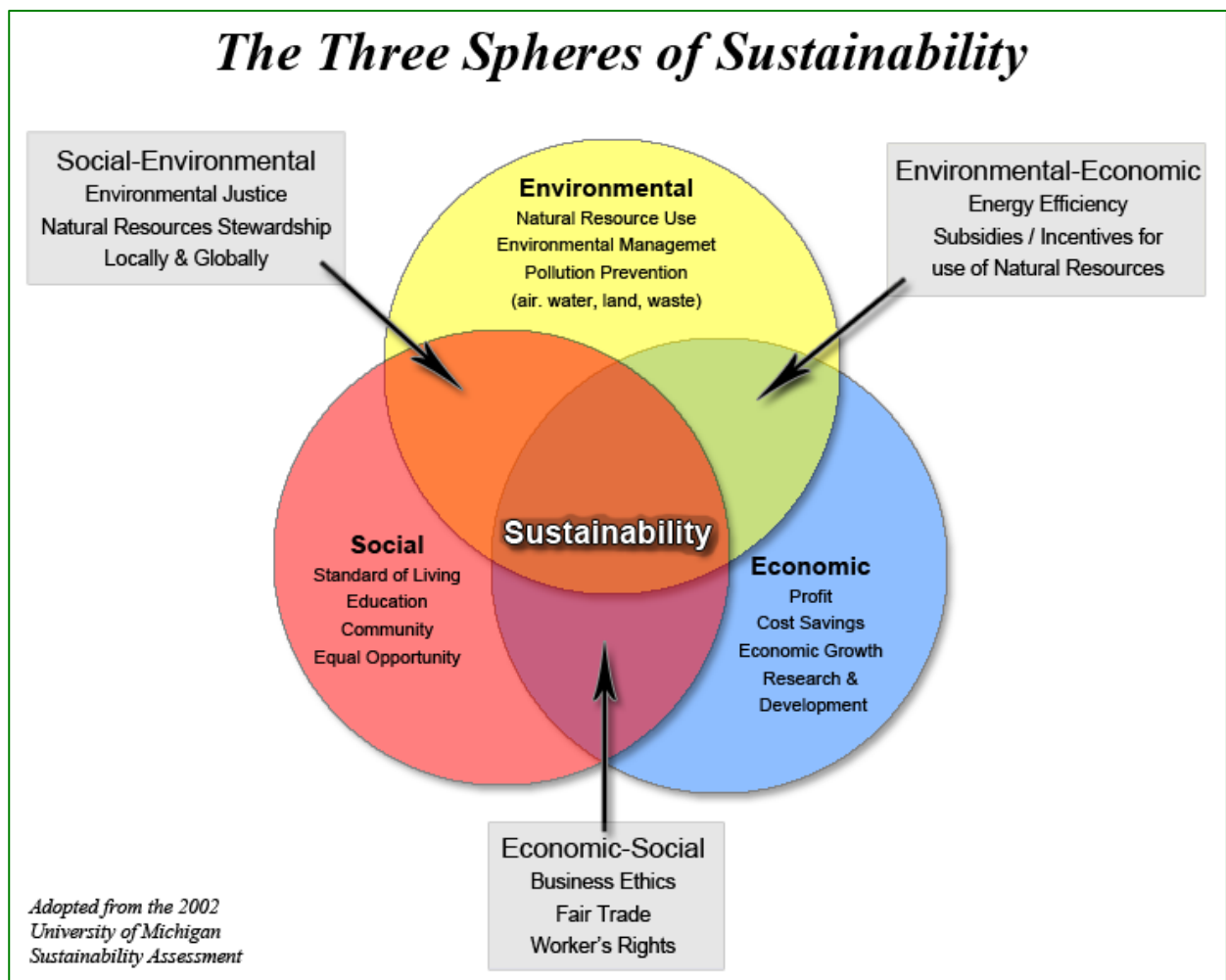
Volume 2 of the AZA Green Guide, entitled “Building and Measuring Zoo & Aquarium Sustainability Plan”, is designed to help zoos and aquariums implement specific ***sustainable practice strategies***, identify AZA Smart Source Cooperative Purchasing Programs to provide discounts on sustainable products, and document their progress on categorical metrics through checklists. These checklists, provided for each sustainability topic area, are modeled after the ICLEI-Local Governments for Sustainability USA’s successful Green Business Challenge Program but modified to fit the needs of zoos and aquariums. The metrics and checklists are designed to help each organization document its sustainable practices internally via a point system and track its progress against its own operation over time.

Beginning in September 2013, AZA will distribute an annual Sustainable Practices survey to its membership that will gather data from these checklists. This information will, in turn, be used to promote the membership’s individual and collective sustainable practice efforts (in addition to field conservation, research, and educational programming efforts) via the AZA Annual Report on Conservation and Science (ARCS). The newly refined ARCS will allow AZA to be better able to share the story of how accredited zoos and aquariums are leaders in wildlife conservation. Whether they are saving species from the brink of extinction or ensuring species never reach such a precarious state by mitigating environmental threats, AZA-accredited zoos and aquariums are working hard to protect wildlife and wild habitats for future generations to enjoy.

Planning

All AZA-accredited zoos and aquariums are encouraged to develop a Sustainability Plan, which will provide a critical starting point for staff to support the organization's sustainable practice strategies and contribute to the Plan's success. Staff should be urged to read both AZA Green Guides, visit the AZA Sustainable Practices webpage (<http://www.aza.org/sustainable-practices/>), and contribute their ideas to further develop these resources. The Sustainability Plan should also provide a tangible roadmap that can be used to communicate or increase awareness of the zoo or aquarium's Plan to gain further support from visitors, vendors, and the community.

To truly model sustainable development, it is recommended that the Sustainability Plan consider and balance the zoo or aquarium's environmental, economic, and social outcomes when making operational decisions and defining operational costs (Spooner, 2012). The environmental sphere includes natural resource management, environmental protection, and conservation. The economic sphere includes the economics of sustainable growth, production and consumption of goods and services, and funding of research into sustainable methods of production and technology. The social sphere includes educating, community building, and providing equal opportunity for everyone to live in a clean and healthy environment. These three spheres should overlap cooperatively for a zoo or aquarium to achieve, and promote, the greatest success in sustainability.



It is also recommended that the Sustainability Plan consider and incorporate components of various other sustainability programs that have already been developed. Factors such as the zoo or aquarium's size, operating budget, existing programs, and program management should be considered when selecting and/or adapting these components. Some suggested programs that might be considered include:

- Environmental Management Systems
- International Organization for Standardization (ISO) 14001
- Life Cycle Assessment
- Natural Capitalism
- Ecological Footprinting
- Zero Emission

Establish a Green Team

It is important to establish a group of individuals, typically referred to as the **Green Team**, that is responsible for creating a sustainability mission and/or vision statement, quantifying operational baselines, prioritizing sustainable practice opportunities and strategies, and developing a dynamic Sustainability Plan to meet the needs and strengths of the zoo or aquarium. Recruitment of members for the Green Team should focus on those that are interested and/or already engaged in sustainability efforts and personnel ranging from upper-level managers to representatives from all departments, particularly those that serve the different topic areas defined in this Guide. Management support of employee involvement on the Green Team is highly advantageous for all staff buy-in and consistency.

Roles and responsibilities should be clearly articulated for the Green Team members. These may include, but are not limited to, developing and updating the Sustainability Plan, identifying sustainable practice strategies that can be implemented independently and collaboratively within multiple departments, facilitating decision-making and organizational buy-in, measuring outcomes, and ensuring consistent growth of the overall program. It is recommended that the Green Team schedule routine meetings to ensure selected sustainable practice strategies are well coordinated and implemented across all departments.

Create a Sustainability Mission and/or Vision Statement

The first task of the Green Team should be to create a sustainability-related mission and/or vision statement. Both serve different purposes but are often confused with each other. A **Sustainability Mission Statement** should describe what the Green Team wants for the present, and the **Sustainability Vision Statement** should describe what the Green Team wants for the future. It is recommended that draft versions of the Sustainability Mission and Vision Statements be distributed to representatives from each department within the zoo or aquarium to ask them what, if anything, should be added or changed. Not only will better and more comprehensive statements be developed in this manner, but employees will also be more invested in the Statements because they helped form them.

	Mission Statement	Vision Statement
About:	A mission statement talks about HOW you will get to where you want to be. It defines the purpose and primary objectives related to your sustainability needs and values	A vision statement outlines WHERE you want to be. It communicates both the purpose and values of sustainability
Answer:	It answers the question, "What do we do for sustainability? What makes our sustainability focus unique for our zoo or aquarium?"	It answers the question, "Where do we aim our sustainability focus to be?"

Time:	A mission statement talks about how the present sustainability focus will lead to its desired future.	A vision statement talks about your future sustainability plans.
Function:	It lists the broad goals for sustainability. Its primary function is internal - to define the key measure(s) of success.	It lists where you see your zoo or aquarium's sustainability focus some years from now. It inspires others to give their best and provides an understanding of why work in this area should continue.
Change:	The sustainability mission statement may change, but it should still tie back to the zoo or aquarium's core values and vision.	Your sustainability vision statement should remain intact because it speaks to what you represent, not just what you do.
Developing a Statement:	What do we do for sustainability today? For whom do we do it? What is the benefit?	What do we want to do for sustainability going forward? When do we want to do it? How do we want to do it?

Sustainability Mission Statement:

The Sustainability Mission Statement should define the current commitment towards sustainable practices, provide measurements to determine success, and serve as a key tool to influence the zoo or aquarium's business operations plan. There are four key elements found in an effective Sustainability Mission Statement: value, inspiration, plausibility, and specificity. In a few succinct sentences, the Sustainability Mission Statement should convey the value of the zoo or aquariums' position on sustainability goals and the philosophies underlying them, inspire and encourage visitors, employees, suppliers and the community to follow suit, sound completely plausible and have measurements in place to determine success, and be as specific and relevant as possible.

Sustainability Vision Statement:

The Sustainability Vision Statement should also define the commitment towards sustainable practices, but in this case it should do so in terms of the zoo or aquarium's values rather than bottom line measures. The Sustainability Vision Statement should communicate the zoo or aquarium's guiding beliefs about how and why sustainable practices should be incorporated. For employees, it gives direction about how they are expected to behave and inspires them to give their best. Shared with visitors, suppliers, and the community, it shapes an understanding of why they should follow suit.

Quantify Operational Baselines

In order to reach a destination, it is necessary to know your starting point; this is the essential idea of identifying metrics to quantify operational baselines. The idea of using a known and defined point of reference is commonplace and is central to an effective management process. A common performance measurement philosophy that is typically incorporated in formal management processes asserts that:

- If it can't be measured, it can't be managed.
- What gets measured gets watched.
- What gets watched gets done.

The Green Team should tour all areas of the zoo or aquarium and meet with all departments to determine which operational practices, products, or services can be measured through specific inventories to develop a baseline of information. Each inventory should be a well-defined, well-documented reference about resource usage and cost that serves as the foundation for future assessment. The easiest place to start is to document the monthly **unit usage amount** and **dollar spent amount** over the past 12 months in each of the topic areas (typically be obtained from reviewing the monthly bills).

The information gained from quantifying the operational baselines in these topic areas is vitally important to identifying and address "low-hanging fruit" that will help the zoo or aquarium achieve greatest success in sustainability within the environmental, economic, and social spheres. The Green Team should use

this information to identify and prioritize the sustainable practices and goals that will be incorporated into the Sustainability Plan.

Prioritize Sustainable Practice Opportunities & Strategies

The Green Team should use information gained from the operational baselines as well as input from staff in other departments to identify easy opportunities to increase sustainable practices and prioritize which Sustainable Practice Strategies will be incorporated into the Sustainability Plan. The Green Team should solicit the expertise of employees in each department to recommend which Sustainable Practice Strategies are the most obtainable. Because zoo- or aquarium-wide green initiatives don't succeed in a vacuum, laying the groundwork for cooperation up front can be very beneficial.

There are several considerations that should be taken into account when prioritizing and selecting the Sustainable Practice Strategies that will be included in the Sustainability Plan. It is not necessary to try to address everything at once and the Green Team should select the three or four most feasible Sustainable Practice Strategies when developing the zoo or aquarium's first Sustainability Plan. As progress is measured and assessed over time, additional Strategies can be incorporated into the Plan as it evolves. To start, it may be easiest to use the checklists found in Volume 2 of the AZA Green Guide to determine which Sustainable Practice Strategies:

- your zoo or aquarium is already implementing.
- are required or regulated (Federal, State or local).
- make the most sense to incorporate given your zoo or aquarium's needs and strengths.
- are the easiest to accomplish at little to zero dollars invested.
- will help leverage buy-in of the Sustainability Plan.
- will have the greatest level of positive environmental impact.
- will have the greatest level of positive economic impact.
- will have the greatest level of positive social impact.

Develop and Maintain a Dynamic Sustainability Plan

The development of a formalized Sustainability Plan is important as it communicates the ways in which the zoo or aquarium will meet its Sustainability Mission and/or Vision and provides a detailed roadmap to guide employees, visitors, suppliers, and the community in positive steps forward. There are five steps to maintaining a dynamic Sustainability Plan:

1. Conduct inventories to quantify and document the monthly **unit usage amounts** (or generation/discharge amounts) and associated **dollar spent amount** within one or all topic areas over the past 12 months.
2. Identify which Sustainable Practice Strategies are already met in each topic area and indicate the year initiated on the corresponding scorecard.
3. Select which new Sustainable Practice Strategies will be implemented for the current Sustainability Plan year.
4. Tally and compare the unit usage and dollar spent amounts from those at the beginning - to those at the end - of the Sustainability Plan year to assess progress.
5. Repeat Steps 3 and 4 annually!

The Sustainability Plan should identify goals that are specific, measurable, attainable, realistic and timely (SMART). Each goal should identify the Sustainable Practice Strategy that is targeted, the person responsible for championing the goal, the team of individuals assigned to work on the goal, the baseline data that will be used to measure progress, a completion timeline, and a budget (if necessary). Zoos and aquariums will provide the basis for establishing accountability for results, rather than just requiring a level of effort, by including these components for each goal:

Sustainability Goal1:	Identify an overarching sustainability goal that addresses a specific need or strength of your zoo or aquarium.
Sustainable Practice	Identify the Sustainable Practice Strategy(ies) that will be implemented to make

Strategy:	progress on this goal.
Champion:	Identify an individual who will be responsible for championing this goal and reporting progress.
Team:	Identify the individual or team of individuals assigned to work on this goal.
Baseline/Annual Data:	Conduct inventories to determine unit usage and dollar spent amounts to be used as a point of reference when assessing progress in the future.
Timeline	Identify a realistic timeline for assessing and completing the individual Sustainable Practice Strategy(ies) and this goal.
Budget	Identify which budgetary needs are required to meet this goal and project any financial savings that will result when this goal is accomplished.

Assessment and reporting periods should be consistent with the time phasing of the Sustainability Plan, typically on an annual basis. The AZA annual Sustainable Practices survey will be distributed in September and closed by February 28th of each year so zoos and aquariums have ample time to report progress that will be included in the Annual Report on Conservation and Science.

General Recommendations for Sustainability Topic Areas

This chapter provides recommendations, tips, and resources to expand on the environmental, economic, and social spheres of sustainability within each topic area. Zoos and aquariums are encouraged to give consideration to these recommendations as they think about developing a Sustainability Plan.

Awareness

To increase awareness and support of the zoo or aquarium's Sustainability Mission, Vision, and/or Plan, transparent and consistent communication should be maintained with employees, visitors, suppliers, and the community. Information should include success stories as well as identify challenges that have been encountered. These types of communication will provide direction and context for individuals to participate and can inspire problem-solving feedback that may contribute to goal accomplishment.

Awareness Recommendations:

- Introduce the members of the Green Team and articulate their responsibilities.
- Clearly summarize the Sustainability Plan's goals and expectations and identify what sustainable practice strategies will be implemented in the workplace.
- Identify a process to gather sustainable practice ideas and feedback from staff on a regular basis.
- The Green Team should schedule routine interdepartmental meetings to ensure selected sustainable practice strategies are both well coordinated and actively implemented across departments.
- **Annual Sustainability Reports** should be composed by the Green Team and be transparent to promote the zoo or aquarium's efforts. Content should include a summary of the strategies your organization selected and/or achieved in each topic area.
- Develop a communications plan that will consistently promote your zoo or aquarium's sustainable practice efforts and accomplishments internally to staff throughout the year.
- Include progress on sustainability goals in staff performance appraisals whenever appropriate.
- Ensure that public messaging cannot be interpreted as **greenwashing**.
- Create signage that delivers key sustainability messages to the public, in addition to training educators/interpreters to help spread this information.
- Publicly recognize key sustainability efforts made by staff within each department on a consistent basis.



- Integrate sustainability practices into all public programming and events and provide signage promoting these efforts.
- Provide mechanisms for guests to successfully achieve or replicate the sustainable practice efforts you promote.
- Partner with external conservation organizations to expand your reach through a collaborative effort.
- Coordinate consistent sustainability-related community involvement projects, programs, events, and activities.
- Complete the AZA annual Sustainable Practices survey so that progress on your zoo or aquarium's sustainable practices will be included in the AZA Annual Report on Conservation and Science (ARCS).

Awareness Resources:

Aspen Global Change Institute (<http://www.agci.org/>): Is dedicated to furthering the scientific understanding of Earth systems and global environmental change through interdisciplinary scientific workshops, educational programs, and publications and videos.

Climate Communication (<http://climatecommunication.org/>): This site focuses on what is happening to our climate, how it will affect us, and what we can do.

Climate Interpreter (<http://www.climateinterpreter.org/>): This site allows zoo and aquarium professionals to learn about climate change as well as collaborate and communicate with others.

Environmental Science for Dummies by Alecia Spooner

(<http://www.dummies.com/store/product/Environmental-Science-For-Dummies.productCd-1118167147.html>): This book simply explains how organizations can act as environmental stewards and elaborates on the three spheres of sustainability that should be considered to do so.

Framing eWorkshop (<http://sfa.frameworksinstitute.org/>): This link offers a free webinar entitled "Changing the Public Conversation on Social Problems: A Beginners Guide to Strategic Frame Analysis".

FrameWorks Institute (<http://www.frameworksinstitute.org/>): Their mission is to advance the nonprofit sector's communications capacity by identifying, translating and modeling relevant scholarly research for framing the public discourse about social problems, including climate change.

Good to Great by Jim Collins (http://www.jimcollins.com/article_topics/articles/good-to-great.html): The AZA Green SAG recommends the perspective in this book and strongly encourages all AZA organizations to set "Big Hairy Audacious Goals" when creating or expanding their Sustainability Plan.

The Six Sins of Greenwashing (http://cms3.tucsonaz.gov/files/ocsd/6_sins_Terrachoice.pdf): A study of environmental claims in North American consumer markets.

Tools of Change (<http://www.toolsofchange.com/en/topic-resources/climate-change/>): This site offers specific social marketing tools, case studies, and a planning guide for helping people take action and adopt habits that promote health, safety, and/or sustainability.

United States Global Change Research Program (<http://www.globalchange.gov/what-we-do/assessment>): This site provides a report that summarizes the current and projected impacts of climate change in different regions of the U.S. It includes various aspects of society and the economy such as energy, water, agriculture, and health and is written in plain language, with the goal of better informing public and private decision making at all levels.

Chemical Management

Green chemistry, also known as sustainable chemistry, is the design of chemical products and processes that deliberately reduce or eliminate the use or generation of hazardous substances. Green chemistry applies across the life cycle of a chemical product, including its design, manufacture, and use. Zoos and aquariums are end users of many chemicals, ranging from cleaning products to water treatment additives. Recognizing the impact of the chemicals we choose to work with, and seeking less hazardous products where possible, helps keep our waterways and environments clean.

Chemical Management Recommendations:

- The Green Team should assess the organization's collective chemical unit usage amount over the past year by conducting a **Chemical Inventory**.
- The Chemical Inventory should be conducted or updated on an annual basis (or more frequently depending on local regulations) and should:
 - Identify the type and quantity of all chemicals used onsite over the past 12 months.
 - Identify the ways in which each chemical was and still is currently used throughout the organization and by outside contractors.
 - Stipulate the purchasing practices used for each chemical, including quantity ordered and vendor information.
 - Describe the management, handling, and storage requirements for each chemical.
 - Identify the potential environmental hazards and disposal protocols for each chemical.
- Results from the Chemical Inventory should be used to determine if there are chemical management-related sustainable practice strategies your organization can implement to reduce or eliminate your chemical usage unit amount, or switch to greener alternatives over the course of the following year.

Tips for your Sustainability Plan:

- Include the Chemical Inventory.
- Outline your organization's view on chemical pollution prevention and using green chemical alternatives.
- Outline your organization's current best practices for controlling onsite chemical usage.
- Identify the specific chemical management-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous annual year's (if applicable) chemical unit usage and related dollar amount spent.
- Document the current year's annual chemical unit usage and related dollar amount spent to track



trends.

Chemical Management Resources:

US Environmental Protection Agency (<http://www.epa.gov/>): An organization dedicated to protecting the environment by creating and enforcing law-based regulations.

- EPA Generator Category Summary (<http://www.epa.gov/osw/hazard/generation/summary.htm>).
- EPA Resource Conservation Act, Subtitle C on hazardous waste generators (<http://www.epa.gov/region02/waste/csummary.htm>)

Subtitle C of the Resource Conservation and Recovery Act regulates hazardous waste generators, see: <http://www.epa.gov/region02/waste/csummary.htm>

Construction

Buildings constructed using sustainable design parameters lower the buildings' life time operating costs, which has a positive impact on the institutional annual operating budget. Zoo and aquarium structures built using these parameters also have an increased asset value; conserve energy, water, and other resources; provide a healthier environment for staff, guests, and collections, and qualify for money saving rebates and other incentives. Here are some interesting statistics regarding construction of buildings:

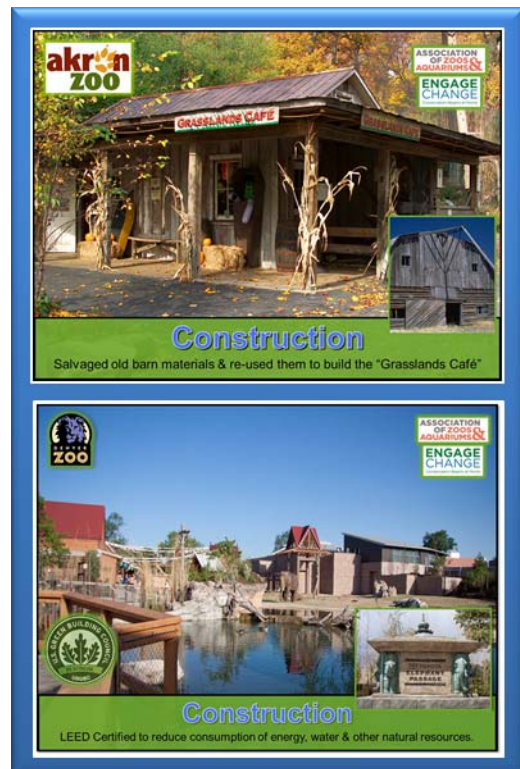
- The portion of energy in buildings used inefficiently or unnecessarily = 30%
- The percentage of U.S. greenhouse gas emissions generated = 17% for commercial buildings and 28% for industrial buildings (combined 45%)
- The amount of greenhouse gas emissions that would be reduced if the energy efficiency of commercial and industrial buildings improved by 10% = ~ 30 Million vehicles
- The number of migratory birds that die per year due to collisions with buildings that do not incorporate wildlife friendly components = More than 1 billion

Construction Recommendations:

- The Green Team should assess the organization's collective construction management strategies for all construction projects over a designated budget amount - including new buildings and projects, renovations, and temporary exhibits - by conducting a **Construction Inventory**.
- The Construction Inventory should be conducted or updated on an annual basis and should:
 - Identify the ways existing buildings and exhibits, as well as new capital construction projects, incorporate Green, Leadership in Energy and Environmental Design (LEED) Certified, Green Globes and / or Wildlife Friendly components.
 - Stipulate purchasing practices including vendor information for these components.
- Results from the Construction Inventory should be used to determine if there are construction-related sustainable practice strategies your organization can implement to reduce or eliminate your non-sustainable construction materials usage amount, or switch to greener alternatives over the course of the following year.

Tips for your Sustainability Plan:

- Include the Construction Inventory.
- Outline your organization's views and current best practices on sustainable, LEED Certified, Green Globes and Wildlife Friendly construction of new buildings and projects, renovations, and temporary exhibits.
- Identify the specific construction-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's amount of unsustainable - as well as Green, LEED Certified, Green Globes, and Wildlife Friendly - construction material your organization used.
- Document the current year's annual non-sustainable as well as Green, LEED Certified, Green Globes, and Wildlife Friendly construction material usage amounts to track trends.



Construction Resources:

Alliance for Water Efficiency (<http://www.allianceforwaterefficiency.org/>): A nonprofit organization dedicated to the sustainable and efficient use of water and aquatic resources.

Alliance to Save Energy (<http://www.ase.org/>): A nonprofit organization that “promotes energy efficiency worldwide through research, education, and advocacy.”

Energy Star (<http://www.energystar.gov/>): An international standard for energy efficient consumer products that employs a labeling system to denote which products have been proven efficient.

Fatal Light Awareness Program (<http://www.flap.org/>): Bird friendly construction and building management.

Green Globes (<http://www.greenglobes.com/>): Provides an “online assessment protocol, rating system and guidance for green building design, operation and management.”

LEED (<http://www.usgbc.org/>): A green certification program “for buildings, homes and communities that guides their design, construction, operations, and maintenance.”

National Association for Museum Exhibition (<http://www.name-aam.org/>): A networking organization for the American Alliance of Museums that aims “to enhance the cultural landscape by advancing the value and relevance of exhibitions through dialogue among individuals, museum leaders and the public.”

- NAME Green Exhibit Guidelines (<http://name-aam.org/uploads/downloadables/OMSI%20Green%20Exhibits%20Guide.pdf>).

National Wildlife Federation (<http://www.nwf.org/>): An organization dedicated to the conservation of wildlife and wild places for the benefit of future generations.

- NWF Certified Wildlife Habitats (<http://www.nwf.org/Home/How-to-Help/Garden-for-Wildlife.aspx?campaignid=WH10A150>).

The American Bird Conservancy (<http://www.abcbirds.org/>): An American nonprofit dedicated to preserving native birds and their habitats.

- ABC Birds and Collisions Page (<http://www.abcbirds.org/abcprograms/policy/collisions/>).

The U.S. Green Building Council recommends the following green-building material resources. Try to follow these applicable recommendations when constructing a new building:

- Scientific Certification Systems (<http://www.scsglobalservices.com/>): Third-party accreditation and auditing.
- Forest Stewardship Council (<https://us.fsc.org/>): Setting standards for forest management.
- Green Seal (<http://www.greenseal.org/>): Promotes conservation through scientific education of consumer, producers, and companies.
- Green Guard (<http://www.greenguard.org/en/index.aspx>): Creates and identifies interior products that are low in chemical emissions.
- Carpet and Rug Institute (<http://www.carpet-rug.org/>): Science-based facts about carpets and rugs.
- Building Green, Inc. (<http://www.buildinggreen.com/>): Provides resources to clients on environmental design.
- U.S. Green Building Council’s Frequently Asked Questions sheet on Building Materials (<https://www.usgbc.org/Docs/LEEDdocs/LEEDfaq-materials2.pdf>).

Energy Management

Energy management includes the planning and operation of all energy related functions in a zoo or aquarium. The objectives of energy management are primarily cost savings, resource conservation, and pollution reduction, in addition to ensuring permanent access to the required energy over the long term. Most forms of energy are easy to measure, and therefore easy to manage. Frequently, energy companies provide easy to track monthly or quarterly metrics.

Energy Management Recommendations:

- The Green Team should assess the organization's collective energy unit usage amount over the previous year by conducting an **Energy Inventory**.
- The Energy Inventory should be conducted or updated on an annual basis and should:
 - Identify the type and quantity of energy (electricity, natural gas, solar, wind, hydro, geothermal, fuel cells, gasification, mega-generator, etc.) used and/or generated onsite over the previous 12 months.
 - Stipulate purchasing or generation practices including vendor information.
 - Calculate the British Thermal Units (BTUs) per square foot for each building and exhibit as well as your organization's total BTU consumption over the past year.
- Results from the Energy Inventory should be used to determine if there are energy management related sustainable practice strategies your organization can implement to reduce or eliminate your energy usage unit amount, or if you should switch to greener alternatives over the course of the following year.

Tips for your Sustainability Plan:

- Include the Energy Inventory.
- Outline your organization's view on reducing energy usage amounts and using sustainable energy alternatives.
- Outline your organization's current best practices for generating energy, using energy efficient equipment, and controlling onsite energy usage.
- Identify the specific energy management-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's annual energy unit usage and generation amount, and related dollar amount spent (if applicable).
- Document the current year's annual energy unit usage and generation amount, and related dollar amount spent to track trends.



Energy Management Resources:

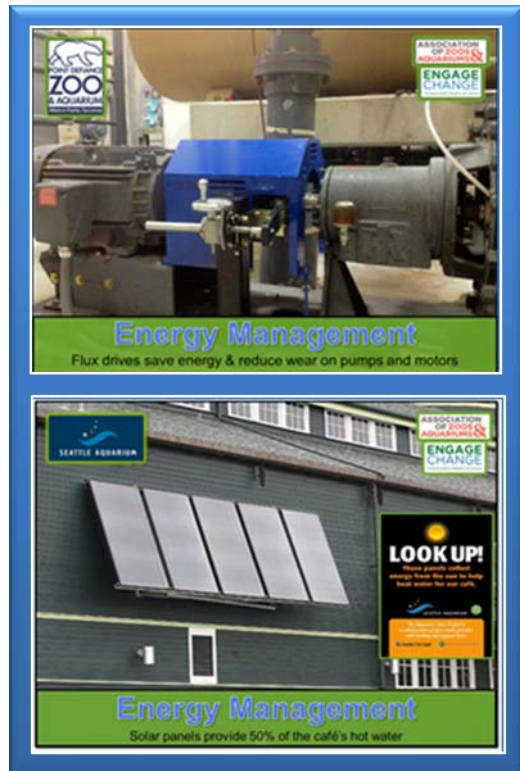
Alliance to Save Energy (www.ase.org). Promotes energy efficiency through research, education and advocacy.

Database of State Incentives for Renewables & Efficiency (www.dsireusa.org). Discover alternative energy funding and incentive opportunities.

Energy Star (www.energystar.gov). Purchase Energy Star® rated items when possible.

EPEAT (www.epeat.net). Use this environmental rating to identify greener computers and other electronic equipment.

Lamprecycle.org (www.lamprecycle.org). A one-stop source of information about recycling mercury-added lamps.



Fuel Management

By establishing an annual monitoring program for fuel use, you can empower your organization with the information that is needed to move towards a reduced and more efficient use of fuel resources. When your zoo or aquarium switches to using fuels and equipment with lower carbon emissions you are helping to protect the air quality of your region and the health of the people who live there, as well as mitigating the increased emission of greenhouse gases.

Fuel Management Recommendations:

- The Green Team should assess the organization's collective fuel usage amount over the past year by conducting a **Fuel Inventory**.
- The Fuel Inventory should be conducted or updated on an annual basis and should:
 - Identify the type and quantity of all fuel (gasoline, propane, diesel, oil, etc.) used and/or generated onsite over the past 12 months.
 - Identify all fuel-powered equipment (e.g., combustion engines, vehicles, generators, etc.) and vehicles used onsite and calculate the amount of fuel used to power each (e.g., MPG for vehicles).
 - Stipulate the purchasing practices used for each fuel, including quantity ordered and vendor information.
 - Describe the management, handling, and storage requirements for each fuel.
 - Identify the potential environmental hazards and disposal protocols for each fuel.
 - Conduct a personnel commute and business travel audit.
- Results from the Fuel Inventory should be used to determine if there are fuel management-related sustainable practice strategies your organization can implement to reduce or eliminate your fuel usage unit amount, or if you should switch to greener alternatives over the course of the following year.

Tips for your Sustainability Plan:

- Include the Fuel Inventory.
- Outline your organization's view on fuel pollution prevention and using green fuel alternatives.
- Outline your organization's current best practices for controlling onsite fuel usage and monitoring personnel fuel-based travel patterns.
- Identify the specific fuel management-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's annual fuel unit usage and related dollar amount spent (if applicable).
- Document the current year's annual fuel unit usage and related dollar amount spent to track trends.

Fuel Management Resources:

Carbon Footprint Calculator (<http://calculator.carbonfootprint.com/calculator.aspx>): Helps calculate your carbon footprint, meaning your total carbon dioxide and methane emissions, using different values and parameters.

Cisco WebEx (https://signup.webex.com/webexmeetings/US/sem_signup_tomorrow.html?CPM=KNC-sem&TrackID=1021381&psearchID=webex): An online meeting space that reduces potential fuel



consumption by eliminating the need for travel.

GotoMeeting Web-conferencing

(<https://www3.gotomeeting.com/join/7015000000ZD29&gclid=CMiaiqrQsrgCFdFDMgod9yoAUg>).
(https://www3.gotomeeting.com/m/g2msem3.tmpl?Portal=www.gotomeeting.com&c_name=gget-d-c&c_mark=NAPPC&c_kwd=gotomeeting-Exact&c_prod=GTM&c_cmp=sf-7015000000ZD29&gclid=CMiaiqrQsrgCFdFDMgod9yoAUg).

RideFinders (<http://www.ridefinders.com/FrontEnd/HTML/index.asp>): Helps find carpoolers available in your area, allowing you to save money on transport, thus reducing total emissions.

Innovation

Every AZA-accredited zoo or aquarium is unique and has individualized challenges and strengths. Each institution is encouraged to “think outside the box” in order to introduce new concepts, designs, or strategies into your Sustainability Plan in addition to adapting existing ones. Being innovative in a way that meets your organization’s needs, taps into its strengths, considers the community it operates within, and recognizes existing local sustainability strategies or opportunities will improve sustainability efficiency, productivity, and quality. It is important to remember that sustainability doesn’t just pertain to the environmental sphere, but also the economic and social spheres. Innovative thinking should be considered within all three spheres to maximize the likelihood of greatest success in sustainability.



Innovation Recommendations:

- The Green Team should assess the organization’s current management strategies for conceptualizing and implementing innovative sustainable practices by conducting an ***Innovation Inventory***.
- The Innovation Inventory should be conducted or updated on an annual basis and should:
 - Identify the ways in which innovation has been incorporated into your organization’s workings in order to improve sustainable business operations across the organization, specify partnerships (with private, local, or state organizations) that make your sustainable practices stronger, and describe ways in which staff is encouraged to think outside of the box.
 - Quantify the number of innovative ideas your organization has implemented, and the amount of money saved based on the implementation of these ideas, over the past year.
- Results from the Innovation Inventory should be used to determine if there are innovation-related sustainable practice strategies your organization can encourage innovation in improving your organization’s sustainable business operations over the course of the following year.

Tips for your Sustainability Plan:

- Include the Innovation Inventory.
- Outline your organization’s view on conceptualizing and implementing innovative thinking to improve sustainable business operations.
- Outline your organization’s current best practices for encouraging innovative thinking and incorporating innovative sustainable practice ideas within or between departmental areas.
- Identify the specific innovation-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year’s amount of innovative ideas and amount of money saved based on the implementation of these ideas.
- Document the current year’s annual amount of innovative ideas and money saved based on the implementation of these ideas.

Innovation Resources:

Biomimicry Institute (<http://biomimicry.net/>): An organization dedicated to helping companies better emulate natural phenomena when creating their own designs and technologies.

- What is Biomimicry? (<http://biomimicryinstitute.org/about-us/what-is-biomimicry.html>).

Global Reporting Initiative (GRI) reporting (<https://www.globalreporting.org/>): non-profit organization that promotes sustainability by providing organizational reporting guidance.

US Environmental Protection Agency (<http://www.epa.gov/>): An organization dedicated to protecting the environment by creating and enforcing law-based regulations.

- EPA Smart Growth (<http://www.epa.gov/smartgrowth/>): Environmental principles of community development.

Purchasing

The purchasing of goods, services or work from an external source should be sustainable when possible and integrate requirements, specifications and criteria that consider environmental protection, social equity, and economic growth factors. Zoos and aquariums can utilize purchasing programs to better meet their needs in terms of quality and quantity while optimizing lower costs by using the buying power of the whole organization, as well as that of the wider-spanning AZA community via the Smart Source Purchasing Program.

Purchasing Recommendations:

- The Green Team should assess the organization's collective bulk product usage amount over the past year by conducting a **Purchasing Inventory**.
- The Purchasing Inventory should be conducted or updated on an annual basis and should:
 - Identify all bulk products (e.g., office, education, landscaping, food/catering, animal diet, custodial, and gift shop supplies, etc.) your organization used onsite over the previous 12 months.
 - Identify the ways in which purchasing practices incorporate sustainable products within different departments.
 - Stipulate the purchasing practices used for all bulk items, including quantity ordered and vendor information.
- Results from the Purchasing Inventory should be used to determine if there are purchasing-related sustainable practice strategies your organization can implement to replace products with more sustainable choices and increase purchasing efficiency and cost-effectiveness over the course of the following year.

Tips for your Sustainability Plan:

- Include the Purchasing Inventory.
- Outline your organization's views on purchasing sustainable bulk products that are used throughout the organization.
- Outline your organization's current best practices for purchasing products in bulk and switching to sustainable products.
- Identify the specific purchasing-related sustainable practice strategies your organization will implement to engage in sustainable product purchasing and management selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's annual bulk products used, for both sustainable and non-sustainable items, and related dollar amount spent (if applicable).
- Document the current year's annual bulk products used, for both sustainable and non-sustainable items, and related dollar amount spent to track trends.



Purchasing Resources:

AZA Smart Source Cooperative Purchasing Program (<http://www.aza.org/cooperative-purchasing-programs.aspx>): Exclusive to AZA Institution members and their guests, bulk purchasing has been coordinated with neighboring zoos and aquariums from several companies to increase price leveraging on sustainable products and services:

- Diversey Green Products (<http://www.aza.org/diversey/>): AZA-accredited Institutions and Certified-Related Facilities that are non-for-profit 501c (3) may take advantage of deep discounts on green cleaning and sanitization supplies.
- Johnson Controls: Installs equipment to reduce energy usage and will pay the difference if energy savings do not make up for the cost of equipment, thereby making it a risk-free way to reduce your energy consumption.
- Medline Medical Supplies (<http://www.aza.org/medline/>): AZA-accredited Institutions and Certified-Related Facilities that are non-for-profit 501c (3) may take advantage of deep discounts on medical supplies.
- Pfizer Animal Health Program: AZA-accredited Institutions and Certified-Related Facilities that are U.S. based and 501c (3) nonprofit are eligible to request donated pharmaceutical products.
- PNC Finance & Melink Solar Products: PNC will provide reduced financing rates to fund the installation of Melink solar energy products to AZA-accredited Institutions and Certified-Related Facilities. Institutions need to commit to both providing a location to put the solar array so that servicing can be maintained and to purchasing the solar power from Melink at a specific rate.
- PPG Industries (<http://www.aza.org/ppg/>): AZA-accredited Institutions and Certified-Related Facilities can lower cost through a cooperative purchasing program with PPG, a global manufacturer of paints, coatings and other architectural products.
- Staples Business Advantage (<http://www.aza.org/staples-business-advantage/>): AZA-accredited Institutions, Certified-Related Facilities, Conservation Partners, and Commercial Members are eligible to participate in cooperative purchasing of green business supplies.

Cradle-to-cradle (<http://c2ccertified.org/>): A certification program that uses a holistic, biomimetic approach to create products and systems that are both efficient and essentially waste-free.

Ecolabel Index (<http://www.ecolabelindex.com/>): An immense directory of ecolabels, which are labels for food and consumer products which denote sustainably made and manufactured goods.

Responsible Purchasing Network (<http://www.responsiblepurchasing.org/>): An “international network of buyers dedicated to socially responsible and environmentally sustainable purchasing.”

Seafood Watch (<http://www.montereybayaquarium.org/cr/seafoodwatch.aspx>): Helping consumers make healthy and sustainable choices in terms of fish and seafood.

United Nations Global Marketplace (<https://www.ungm.org/Index.aspx>): The procurement portal of the United Nations system.

- UNGM Sustainable Procurement page (<https://www.ungm.org/sustainableprocurement/>).

US Environmental Protection Agency (<http://www.epa.gov/>): An organization dedicated to protecting the environment by creating and enforcing law-based regulations.

- EPA Environmentally Preferable Purchasing website (<http://www.epa.gov/epp/>): Has a wealth of information about sustainable purchasing standards
- EPA Life Cycle Assessments (<http://www.epa.gov/nrmrl/std/lca/lca.html>): The LCA is a technique used to “assess the environmental aspects and potential impacts associated with a product, process, or service”.

Waste Management

Much of the focus on climate change revolves around how atmospheric levels of carbon dioxide (CO₂), a pollutant produced primarily from fossil-fuel combustion, is consistently increasing, and how it accounts for approximately 85% of greenhouse gas emissions. It is important to recognize, however, that atmospheric levels of methane produced in part by garbage decomposition in landfills, account for an additional 8 % of greenhouse gas emissions and may in fact be more damaging to the environment due to methane being 21 times more efficient at preventing infrared radiation from escaping the planet's atmosphere.

Zoos and aquariums spend thousands of hours and dollars managing a multitude of waste streams annually. The waste management cycle typically starts at the initial point of generation and continues with collection, sorting, processing, hauling and final disposal. Reductions in any of the components of this cycle can have a positive impact on their bottom line by saving staff time and direct costs as well as our environment.

Waste Management Recommendations:

- The Green Team should assess the organization's collective waste generation amounts over the previous year by conducting a **Waste Inventory**.
- The Waste Inventory should be conducted or updated on an annual basis and should:
 - Identify all waste generation sources (e.g., office supplies, food services, composting, animal feces, etc.) across the organization.
 - Stipulate the disposal practices including waste removal vendor information.
 - Describe the management, handling, and storage requirements for each type of waste.
 - Identify the potential environmental hazards of each type of waste.
 - Quantify the amount of waste generated for each source (e.g., pounds or cubic feet) and costs associated with these product losses (e.g., excess food) or in waste removal over the previous year.
- Results from the Waste Inventory should be used to determine if there are waste management-related sustainable practice strategies your organization can implement to reduce or eliminate your waste generation amount, or if your organization can switch to sustainable and/or compostable product alternatives over the course of the following year.

Tips for your Sustainability Plan:

- Include the Waste Inventory.
- Outline your organization's view on waste generation prevention and using sustainable product alternatives that do not produce a large amount of waste.
- Outline your organization's current best practices for reducing waste generation and disposal



transport.

- Identify the specific waste management-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's annual waste generation amounts (e.g., pounds or cubic feet) for each source and the related dollar amount spent for product losses and waste removal (if applicable).
- Document the current year's annual waste generation amounts for each source and related dollar amount spent for product losses and waste removal to track trends.

Waste Management Resources:

The Story of Stuff (<http://www.storyofstuff.org/movies-all/story-of-stuff/>): A short film on production and consumption patterns in modern society.

US Environmental Protection Agency (<http://www.epa.gov>): An organization dedicated to protecting the environment by creating and enforcing law-based regulations.

- EPA Generator Categorization (<http://www.epa.gov/wastes/hazard/generation/>): Descriptions of hazardous waste generators.
- EPA Waste Auditing (http://www.solidwastedistrict.com/projects/waste_audit.htm): Instructions on how to conduct a waste audit.
- EPA Waste Conservation (<http://www.epa.gov/waste/conservematerials/index.htm>): A list of non-hazardous materials recovered for recycling in the US.
- EPA WasteWise Program (<http://www.epa.gov/epawaste/conservematerials/wastewise/index.htm>): More information about the WasteWise program, which is designed to help organizations reduce industrial waste.
- EPA Waste Types (<http://epa.gov/wastes/hazard/wastetypes/index.htm>): Categorization of waste types.

Water Management

Water is the most abundant compound on Earth's surface, covering about 70% of the planet. About 98% of this water is salt water, whereas only 1%, the water found in groundwater, lakes, rivers and streams, is considered freshwater available for human consumption. Zoos and aquariums recognize that water is a world resource and actions taken to conserve and maintain healthy waterways and supplies are critical for species conservation.

Water Management Recommendations:

- The Green Team should assess the organization's collective water usage amount over the previous year by conducting a **Water Inventory**.
- The Water Inventory should be conducted or updated on an annual basis and should:
 - Identify all sources (buildings, food preparation, restaurants, landscaping, fountains, pools/exhibits, animal diets, public misters/fountains, etc.) where water was used onsite over the past 12 months.
 - Stipulate purchasing and discharge practices including vendor information.
 - Calculate the amount of water used and/or discharged for each source (e.g., in gallons) and their associated costs over the previous year.
- Results from the Water Inventory should be used to determine if there are water management-related sustainable practice strategies your organization can implement to reduce your water usage unit amount over the course of the next year.

Tips for your Sustainability Plan:

- Include the Water Inventory.
- Outline your organization's view on increasing water efficiency and reducing water usage and discharge amounts.
- Outline your organization's current best practices for increasing water efficiency and reducing water usage and discharge amounts.
- Identify the specific water management-related sustainable practice strategies selected for the current year.
- Detail an implementation and outcome measurement schedule for each strategy.
- Calculate the previous year's annual water unit usage amount and related dollar amount spent (if applicable).
- Document the current year's annual water unit usage amount and related dollar amount spent to track trends.

Water Management Resources:

US Environmental Protection Agency (<http://www.epa.gov>): An organization dedicated to protecting the environment by creating and enforcing law-based regulations.



- EPA Water Audits and Measurement (<http://www.epa.gov/region9/waterinfrastructure/water-conserv.html>): Information on water conservation and auditing.
- EPA Stormwater Management (<http://www.epa.gov/oaintnt/stormwater/>): Information on the importance of stormwater and rain runoff conservation.
- EPA Water Resources (<http://www2.epa.gov/learn-issues/learn-about-water>).

Water: Use it Wisely (<http://wateruseitwisely.com/index.php>): A site dedicated to educating the public about water conservation issues.

Glossary

Annual Dollar Amount Saved: Subtract the current year's total chemical, energy, fuel, waste, and water dollar amount spent from the projected estimated annual cost of these bills at current rates.

Annual Sustainability Report: Composed by the Green Team. Content should be transparent and include a summary of the scorecard sustainable practice strategies selected and/or achieved in each topic area, a comparison of the year's annual chemical, energy, fuel, waste, and water unit and dollar amounts spent to the projected cost estimate, the annual dollar amount saved, and the way(s) the savings will be re-invested into the next year's Sustainability Plan. Members of the Green Team and employees who have made significant and key efforts should be highlighted.

Chemical Inventory: Should be conducted annually and identify the type and quantity of all chemicals used onsite over the past 12 months, identify the ways in which each was and is currently used throughout the organization and by outside contractors, stipulate purchasing practices including quantity ordered and vendor information, describe their management, handling, and storage requirements, and identify potential environmental hazards and disposal protocols.

Construction Inventory: Should be conducted annually and include the ways each existing building or exhibit, as well as new capital construction projects, incorporate Green, LEED Certified, and Wildlife Friendly components, stipulate purchasing practices including vendor information for these components, and calculate the amount of Green, LEED Certified, and Wildlife Friendly construction material used over the past year.

Dollar Spent Amount: Total amount spent for chemical, energy, fuel, waste, and water in the past 12 months.

Energy Inventory: Should be conducted annually, identify the type and quantity of energy (electricity, natural gas, solar, wind, hydro, geothermal, fuel cells, gasification, mega-generator, etc.) used and/or generated onsite, stipulate purchasing or generation practices including vendor information, and calculate BTUs/square foot for each building/exhibit as well as total BTU consumption over the past year.

Fuel Inventory: Should be conducted annually, include a personnel commute and business travel audit, identify the type, quantity, and physical location of all fuel and fuel-powered equipment used onsite, provide a MSDS for each fuel and identify the ways each is used throughout the organization and by outside contractors, stipulate purchasing practices including quantity ordered and vendor information, describe all management, handling, and storage requirements, and identify potential environmental hazards and disposal protocols.

Green Team: Should be composed of upper-level managers and representatives from all departments as well as those that serve the different topic areas defined in this Guide that are actively involved in developing and updating the Sustainability Plan, identifying sustainable practice strategies that can be implemented independently and collaboratively within multiple departments, facilitating decision-making and organizational buy-in, managing Leadership Teams, measuring outcomes, and determining ways to invest the current annual dollar amount saved into the following year's Sustainability Plan.

Innovation Inventory: Should be conducted annually and identify the ways in which innovation has been incorporated to improve sustainable business operations across the organization, specify partnerships that make sustainable practices stronger, describe ways in which staff and the Innovation Leadership Team are encouraged to think outside of the box, and calculate the amount of innovative ideas your organization produced over the past year.

Purchasing Inventory: Should be conducted annually and include the ways current purchasing practices incorporate sustainable products within different departments, provide vendor information, and calculate the amount of sustainable products your organization used over the past year.

Sustainability Mission Statement: Should define the zoo or aquarium's current commitment towards sustainable practices, provide measurements to determine success, and serve as a key tool to influence the zoo or aquarium's business operations plan.

Sustainability Plan: Should tie into the organization's mission and strategic plan, identify members of the Green Team and Leadership Teams and stipulate their responsibilities, itemize which new sustainable practice strategies will be implemented and how the previous annual dollar amount saved will be directly applied to these strategies, and include a synopsis of the previous year's Annual Sustainability Report.

Sustainable Practice Strategies: Specific strategies identified for the areas of Awareness, Chemical Management, Construction, Energy Management, Fuel Management, Innovation, Purchasing, Waste Management, and Water Management that can be implemented at your zoo or aquarium to conserve resources. Strategies and checklists to track your organizations efforts can be found in the AZA Green Guide (Volume II): Building and Measuring Your Zoo or Aquarium Sustainability Plan publication.

Sustainability Vision Statement: Should communicate the zoo or aquarium's values and guiding beliefs about how and why sustainable practices should be incorporated.

Unit Usage Amount: The amount of chemical, energy, fuel, waste, and water your organization used in consistent units of measurement (e.g., gallons, BTUs, etc.).

Waste Inventory: Should be conducted annually and identify the type and quantity of waste generated onsite, stipulate purchasing or generation practices including quantity ordered and vendor information, describe all management, handling, and storage requirements, and identify potential environmental hazards and disposal protocols.

Water Inventory: Should be conducted annually and identify the ways water is used and discharged onsite, stipulate purchasing practices including total consumption in gallons for each building/exhibit over the past year, provide vendor information, and describe all current water usage reduction management practices in place.