Attachment 1

toronto zoo

TZNET0

Environmental Sustainability Plan

1TZ MISSION:

OUR TORONTO ZOO - CONNECTING PEOPLE, ANIMALS, AND CONSERVATION SCIENCE TO FIGHT EXTINCTION.

OUR SUSTAINABLITY VISION:

WE ENVISION A ZOO WHOSE OPERATIONS PRODUCE AN OVERALL BENEFIT TO OUR NATURAL ENVIRONMENT, ALLOWING WILDLIFE AND WILD SPACES TO THRIVE.

The future demands we make change now!

We need to do more to mitigate climate change. The purpose of this environmental sustainability plan is to renew our commitment to preserve, protect, and ultimately enhance the earth's living systems.

The Green Eco-Zoo Team used the Zoo's 2007 Green Plan and the City of Toronto's TransformTO, Climate Resiliency Action and Biodiversity Strategies as the framework to build this new plan. We also looked to the United Nations' Sustainability Development Goals - a collection of 17 interlinked global goals designed to achieve a better and more sustainable future for all, and Canada's commitment to the 2015 Paris Climate Accord, to reach beyond the Zoo's premises and take action with our community, within our community, and as a national leader. These new directives are key to taking the TZNet0 Sustainability Plan to the next level.

Where we are at today

Toronto Zoo staff have been innovative to reduce, reuse and recycle, even before the 3Rs were coined. In the early 1990s, the Zoo formalized their environmental initiatives through the GreenPrint and the Environmental Committee. In 2007, the Zoo embraced an official sustainability platform with its Green Plan. Since then, the Zoo has implemented a series of projects, educational programs and modified its practices to achieve the goals of the Green Plan.

As of 2020, Your Toronto Zoo has:

- Reduced annual greenhouse gas emission 28% below 1990 levels;
- Reduced annual potable water consumption 42% below 1990 levels;
- Purchased clean renewable power to offset 9% of our greenhouse gas emissions annually;
- Net zero carbon conservation programs and special events;
- Added systems to utilize grey water;
- Diverted 78% of waste from landfill;
- Reduced overall waste generation by 46%;
- Purchased food and supplies produced locally and using environmentally sound practices; and
- Implemented sustainable construction and landscaping practices at the Wildlife Health Centre.

Our Sustainability Priorities

1. **Creating an environmentally sustainable zoo modelling best practices**
2. **Improving biodiversity for a sustainable planet**
3. **Communities, partners, and the Zoo working together**

Your Toronto Zoo has developed a plan that goes beyond the gates and prioritizes ecosystem function and social responsibility. We have set more aggressive goals to reduce water consumption and CO_2 emissions, increase waste diversion. We have added biodiversity goals and assumed a community approach to support the climate resiliency of our community.

Using the Toronto Zoo's four "cares", we will design for resilience, consider the social and environmental impacts of our operations and initiatives, and engage our community and partners in the planning process to ensure we are making the right decisions for the wellbeing of our animals, guests, team, and community.

TZNet0 Sustainability Goals

	PROGRESS	GOAL	WHAT SUCCESS LOOKS LIKE
CO_2 Emissions	**28%** Below 1990 levels	30% by 2021 45% by 2022 50% by 2023 60% by 2024 *Below 1990 Levels	Net Zero CO_2 emissions by 2030
Water Consumption	**42%** Below 1990 levels	45% by 2021 55% by 2022 65% by 2023 75% by 2024 *Below 1990 Levels	Net Zero water consumption by 2030
Waste Diversion	**78%** Diverted from landfill	80% by 2021 84% by 2022 87% by 2023 90% by 2024	Net Zero to landfill by 2027
Habitat Restoration	Habitat inventory complete	5% by 2021 10% by 2022 15% by 2023 20% by 2024	200 acres of habitat restored by 2030

1 Creating an environmentally sustainable zoo modelling best practices

In 1972, the Toronto Zoo was the epitome of architecture, construction and technology. Nearly 50 years later, it is time to reinvest in the Zoo's facilities and operations to once again present a community icon that promotes a vision for a sustainable planet through the responsible use of resources, advanced technologies, and operational best practices.

Focus	Priority	Benefits of Investment	Projects
Understanding our resource consumption	Understand how each building, ride and operational practice contributes to the Zoo's overall resource consumption to make informed actions to achieve the goals of the TZNet0 Plan.	Implementing successful projects to reduce our annual resource consumption will reduce the demand on local services supporting the needs of the community and reduce greenhouse gas emissions from burning fossil fuels.	• Install natural gas, water and electrical smart submeters throughout the Zoo • Annual resource consumption audits
Optimizing Energy Efficiency	The first step in becoming a carbon neutral Zoo is to optimize the efficiency of existing systems and operational practices. Once we have improved the energy efficiencies of our systems, we will then look at larger installations of renewable energy.	Upgrading mechanical systems, ventilation and lighting to more efficient systems will significantly reduce energy use and greenhouse gas emissions from burning fossil fuels and provide better environmental conditions for our animals.	• Install a combination of more efficient heating, cooling, ventilation and humidity with smart control systems • Install new LED lighting and replace existing inefficient lighting
Sustainable Green Construction	Renovations and new construction at the Zoo will better serve our animals, our team, our guests and our community. Implementing sustainable green construction practices in our redesign will set us up as a world class showcase for sustainability.	Net zero construction, low impact development and clean renewable energy will reduce the Zoo's greenhouse gas emissions, support the implementation of a greener, cleaner economy, support local businesses, and allow wildlife and wild spaces to thrive.	• Design to meet and exceed the Toronto Green Standards sustainable building requirements • Engage staff in LEED and Passive House Design training to embolden net zero carbon and resiliency for all new construction

1 Creating an environmentally sustainable zoo modelling best practices

Focus	Priority	Benefits of Investment	Projects
Renewable Energy	Clean renewable energy is an alternative way to meet the energy needs of the Zoo and reduce our carbon footprint.	Selecting clean renewable energy will reduce our greenhouse gas emissions, support the implementation of a greener, cleaner economy, support local businesses, and allow wildlife and wild spaces to thrive.	• Increase the purchase of renewable energy • Continue to research large-scale generation of renewable energy on site
Low Carbon Zoo Transportation	Travelling to and within the Zoo does not need to have negative impacts on the environment. Electric vehicles are maturing and there is a promising future for EV technology. Some of our vehicles are electric already, but we will decarbonize all of our commercial vehicles.	Re-evaluating the use and size of Zoo vehicles, transitioning the entire fleet to low carbon emitters and/or operated using renewable energy will reduce our greenhouse gas emissions and dependency on fossil fuels. Offering EV charging stations for Zoo guests and staff promotes private sustainable transport modes.	• Install 340 EV charging stations for guests, employees and Zoo vehicles over the next 10 years • Transition Zoo commercial and passenger vehicles to low carbon emission vehicles • Re-evaluate the staff Carpool Program • Investigate Ride-Sharing programs for guests
Water Resource Efficiencies	Cleaning and maintaining animal habitats and guest washrooms are the two largest uses of water at the Zoo. Implementing behavioural change and installing water reducing options are key to achieving our new 75% reduction target for water consumption by 2024.	Reducing the amount of water we use will support our local community to ensure all have access to safe and affordable clean water. Using captured stormwater for plant care provides more nutrient rich water and less chemical laden water for their growth.	• Install low flow water features during all washrooms renovations • Improve water service infrastructure such as filtration systems, filter media and watermain lines • Increase grey water options such as rain harvest and stormwater management
Zero Waste to Landfill Strategy	The Toronto Zoo's policy for waste is simple: we want to reduce the amount of waste we produce, reuse any materials we can, and recycle as much as possible.	Supporting a circular economy reduces risks associated with climate change, pollution and habitat destruction. Restricting the use of single-use plastics and generation of waste will protect both terrestrial and aquatic environments.	• Develop a zero-waste guest program • Rewrite our Green Procurement Plan • Develop a Preferred Green Vendor's List

2 Improving biodiversity for a sustainable planet

Extinction is forever. The Toronto Zoo is working to counteract the loss of biodiversity which has soared to three species lost per day on our planet. We rely on healthy biodiverse ecosystems to create strong, healthy, and robust communities. Our mission to help improve biodiversity globally, within our community, and at the Zoo is because biodiversity is an essential part of the solution to climate change.

Focus	Priority	Benefits of Investment	Projects
Habitat Recovery	It is essential species returning to the wild through the Zoo's Conservation Science Plan have a healthy functioning ecosystem to return to. We will work with local and global partners to restore habitat to ensure a successful reintroduction.	Restoring natural habitat with diverse species of plants and animals improves the resiliency of species, including humans, against unexpected events such as climate change and natural disasters. Natural spaces reduce global warming and sequester carbon emissions mitigating climate change.	• Contribute to Canada's tree and meadow planting initiatives • Support global habitat restoration projects • Contribute to the City of Toronto's Biodiversity Strategy to recover biodiversity in the redevelopment of urban spaces • Purchase products that don't cause deforestation
Renaturalization of the Zoo Grounds	The 542 acres of Zoo lands face threats from invasive species and climate change. To combat these issues, we will collaborate with our partners such as the City of Toronto, TRCA, and Parks Canada to restore the Zoo's wild spaces.	The natural spaces at the Toronto Zoo are home to a variety of species of frogs, birds, turtles, fish, invertebrates and mammals. We will improve habitat for local wildlife and the ecosystem as a whole, increase biodiversity, sequester carbon, and increase amenities for our guests.	• Develop a site-wide natural space management plan • Remove and control the spread of invasive species • Improve wetlands and waterway to act as nature's water purification system • Contribute to Canada's tree and meadow planting initiatives
Climate Resiliency	It has been predicted that Toronto will see an increase in severe precipitation, floods, extreme temperature events and drought as a result of climate change. While this sustainability plan is meant to mitigate climate change, preparing for the impacts of climate change is also needed.	Implementing strategies to protect the animals, guests, staff and facilities from catastrophic events will reduce waste, damage and injury or loss.	• Develop a climate resiliency plan • Create rain gardens and vegetation swales to act as bio-filters extracting nutrients and pollutants prior to groundwater recharge • Use nature-based solutions to repair and prevent weather-induced damage to natural spaces

3 Communities, partners, and the Zoo working together

One of Toronto Zoo's core values is its prioritization of social leadership within the Zoo and in surrounding communities. We will ensure an equitable environment at the Toronto Zoo, and provide opportunities to encourage and engage all in conservation science. Through citizen science, community-based, and nature-based programs the Zoo will be an active member of the community.

Focus	Priority	Benefits of Investment	Projects
Within the Zoo	Climate change can be a difficult subject to broach, though urgent and important. We are constantly learning about new research, technologies and innovations. We will continue to inspire guests to think more closely about their actions and impact on the environment.	There is a direct correlation between visiting a zoo and awareness about niche environmental issues. Hands-on, interactive education and engagement embed a passion to immerse oneself in nature and preserve it, and creates the drive to initiate and accept change for a more sustainable lifestyle.	• On site interactive displays and programs like the Plastics Pathway • Conservation Action Team (CAT) volunteer program to engage people in environmental stewardship • Contribute to the City of Toronto's Biodiversity Strategy to recover biodiversity in the redevelopment of urban spaces
Within our Community	Sharing resources is the most effective way to overcoming barriers to mitigate climate change. We endeavor to work with the community to share Zoo resources to develop strong, engaged, sustainable and resilient communities.	Communities with appropriate support and resources will reduce poverty and hunger, become more resilient, less reliant on fossil fuels and engaged in conservation.	• Consult with local community stakeholders to identify locally-significant projects and climate mitigation barriers • Assist with locally-significant projects to eliminate climate mitigation barriers • Contribute to the City of Toronto's Biodiversity Strategy to recover biodiversity in the redevelopment of urban spaces
With our Partners	Working together is key to success. The Zoo will continue to reach out and create partnerships that will further advance climate resiliency within our communities, create on the ground action and engage more people in conservation.		

TZNet0 at a Glance