

To: Board of Management

From: Director, Facilities & Infrastructure

Subject: **2019 ENVIRONMENTAL INITIATIVES REPORT**

Date: 2020-07-10

SUMMARY:

The purpose of this report is to update the Board of Management on environmental priorities and initiatives achieved for the Toronto Zoo in 2019. The Toronto Zoo continues to complete projects to improve energy efficiency, water conservation, waste diversion and employee and public engagement to reduce its overall carbon footprint.

RECOMMENDATIONS:

It is recommended that this report be received for information.

FINANCIAL IMPACT:

There is no financial impact from this report.

DECISION HISTORY:

In 2006, the Toronto Zoo introduced a Greenprint that provided resources and suggestions for the creation of the 2007 Green Plan. The Green Plan addresses the Toronto Zoo's major environmental impacts and provides action steps towards a greener solution by outlining goals, targets, timeframes and areas of responsibility.

COMMENTS:

The Green Eco-Zoo Team (GEZT), a non-technical advisory committee to the CEO, addresses the environmental impacts of Zoo operations, policies and procedures, and makes recommendations that will lessen our ecological footprint in the Rouge Valley and on the earth. The organizational structure of GEZT incorporates all divisions and units of the Zoo.

GEZT provides an annual report to the CEO for presentation to the Board of Management on environmental projects, programs and initiatives in progress or completed over the past year. Kyla Greenham, Manager of Conservation Programs & Environment, chairs GEZT.

In 2019, GEZT concentrated on waste management, energy consumption reductions, surface water quality improvements and plastics.

Environmental Management System

The Environmental Management System continues to be implemented across the Zoo, with several action plans being completed.

In 2019, GEZT continued with the 2018 Action Plan priorities for energy, water, waste and the palm oil conservation message. In February, the Board of Management approved the development of a contract with Ecosystem Energy Services Inc. for the Energy Retrofit Project to which a contract has been signed. GEZT and Project Management coordinated the installation of three windmills, a floating wetland and five water bottle filling stations. Exhibit Design assisted GEZT with the construction of a sustainable playhouse in the Eurasia Nature Play Area featuring solar panels, a green roof, a rainwater collection cistern and rain garden, electric-free air conditioner and insulation made from post-consumer recycled products such as jeans. In May, Custodial and GEZT implemented a Zero-waste employee program in the Administrative, Learning & Engagement and Guest Relations Centres. Details on each of these projects has been provided in later sections of this report.

As part of the Environmental Management System, incidences on site that have had or may have a negative impact on the environment are to be reported to the Conservation & Environment Office. There were two environmental incidences on site in 2019. A fuel spill of less than 3L of gasoline by an outside contractor occurred behind the Education Centre during the refueling of a backhoe. The spill was contained quickly and was restricted to hard asphalt prior to clean up. A second fuel spill of 10 to 15L of diesel fuel occurred behind the Americas Pavilion. Although the fuel reached the grass and soil, it was quickly contained to prevent exposure to the Zoo's waterway and stormwater catch basins. The Contractor responsible for the spill implemented the Zoo's spill response protocol and contracted an Environmental Hazardous Material Clean-Up Crew to clean up the spill and remove the contaminated soil. Inspection by the City of Toronto's Environmental Monitoring and Protection Unit was pleased with the containment and thorough clean-up process.

As a follow up to the number of spills at the Zoo in 2019, Facilities & Infrastructure, Safety & Security and the Conservation & Environment Office completed a review and update of the Spill & Leak Response Branch Instruction and developed a new Spill & Leak Response Plan Policy. The new policy will be included in all contractor training programs.

Energy Efficiency Improvements

To actively achieve our 2007 Green Plan targets, the Zoo has identified the need to improve operational efficiencies in its building infrastructure. The Facilities & Infrastructure Division continues to install greener equipment when replacing or updating services. Direct action taken to address the Zoo's operational activities that impact the environment are designed to optimize our current energy and water consumption levels. Optimization of these activities to meet the needs of Zoo operations and reduce our consumption is the first step in a long term plan to reach a target of reducing greenhouse gas emissions by 95% below 1990 levels by 2027.

In recent years, the Toronto Zoo has realized energy reductions through capital and operating projects completed by the Facilities & Infrastructure Division (formerly Facilities & Services).

Since 2015, the Utilities Branch has been replacing hot water storage tanks with on-demand hot water heaters. As of the end of 2019, a total of 26 hot water heaters have been replaced by 23 on-demand hot water heaters. This provides an estimated annual energy savings of \$3,744 (\$144 per tank).



In support of taking action on climate change, the Toronto Zoo celebrated Earth Hour on Saturday March 30th, 2019 by turning off all non-essential lights from 8:30 p.m. to 9:30 p.m. To increase public awareness about Earth Hour and the impact of climate change, Toronto's Facebook, Twitter and Instagram pages each hosted three spotlights on how climate change is impacting the habitat range of endangered species that can be viewed at the Toronto Zoo.

Green Technology Implementation

Electrical Services continues to upgrade lighting systems to LED and has replaced approximately 22% of all Zoo lighting with LED bulbs. In 2019, the conversion of all lighting to LED in the Black Footed Ferret, Transit, Cheetahs, Baboons, and Invertebrate House were completed. Eight LED fixtures were installed at the Exit walkway to improve efficiency and aesthetics for guests. Finally, approximately 20 graphic boards at exhibits had LED lights installed.

Plumbing Services are conducting a pilot project that could significantly reduce water consumption and waste generation at the Zoo. This pilot project is testing the use of glass beads instead of sand in the sand filters used on the beaver & otter pool in the Americas Pavilion. The glass bead which won't deteriorate over time, will reduce the replacement of sand in the filter required to maintain water quality, they also reduce the amount of backwash required per week in order to maintain water quality from 3 backwash per week, to one every two weeks. This is expected to save 39,200 Litres of water per year for the one filter alone.

New Infrastructure

The Toronto Zoo installed its first water bottle filling station in the Administrative Support Complex in 2018. An additional five units were purchased and installed in public locations in the spring of 2019 to support the Zoo's efforts to reduce waste and the conservation message associated with the 2019 Washed Ashore Art to Save the Sea exhibition. Water bottle filling stations are now installed in the following locations; Canadian Domain Zoomobile Station, African Rainforest Pavilion, Americas Pavilion, Learning & Engagement Centre and the Front Entrance. Educational signage for the filling stations was also designed and installed in the summer of 2019. The water bottle filling stations were well received by Zoo staff and



the public, more than 66,628 water bottles were eliminated from use at the Zoo in 2019. The Zoo plans to install up to 5 more stations in 2020.

During the design of the Toronto Zoo, a series of 9 man-made connected ponds flowing from the Mayan Temple to the Front Entrance Bridge were designed and constructed to be the stormwater management feature for the Zoo back in 1974. This recirculating water feature has become a standing aesthetic feature for guests during their visit. Water quality testing of the ponds show reduced water quality as a result of elevated nutrient loading such as phosphorus, nitrogen and silt. The installation of a floating wetland in one of the ponds is being piloted to see if this low-cost, aesthetically pleasing natural system is capable of improving water quality and slowing water flow during stormwater events. Monthly water sampling is being conducted to the project success as new floating wetlands are planned for 2020.



Additionally, three Koender Windmills were installed near the waterway to reduce the carbon footprint of aerating the ponds. Traditionally, the Zoo has had up to nine aerating compressors that are used in the summer months to support aeration of the ponds and reduce oxygen-deprivation events which affect aquatic animals in the ponds. In replacing these old electric compressors, the decision to replace them with renewable energy sourced compressors resulted in the installation of three windmills. The windmills direct air to the water without the need for any compressor. The windmills are located at: the front entrance near the Bus Loop, in Eurasia Wilds behind the Snow Leopard habitat and in Eurasia Wilds near Schofield Garden. Each location provides an opportunity to highlight the Zoo's move towards renewable energy sources.



Environmental Awareness/Public Outreach

The Toronto Zoo reached a number of audiences in 2019 to promote environmental and sustainability awareness through public outreach opportunities. 2019 saw a positive increase in our presence of sustainability & environmental awareness on social media and we have experienced more interaction with the public through our online forums.

Washed Ashore

On Thursday May 16, Toronto Zoo officially opened the Washed Ashore – Art to Save the Sea exhibit. The exhibit displayed ten larger than life sculptures, created by Washed Ashore, a non-profit organization whose mission is to use the arts to educate a global audience about plastic pollution in oceans and waterways and to spark positive changes in consumer habits. The exhibit educated guests about the negative and devastating effects of plastic pollution. Each sculpture was built completely from plastics found in ocean. Yearlong activities and conservation messages at the Toronto Zoo supported this exhibition.



Our Exhibit Design unit worked hard to use plastic waste from staff collections, shoreline cleanups, and donation from Longo's, Value Village Pickering and Ajax, Habitat for Humanity Durham, and the Salvation Army Recycling Centre in Scarborough. Out of the plastic waste collected our very own Toronto Zoo sculpture, Poly the Polar Bear, was created and installed outside the Caribou Café. Poly the Polar Bear represents Toronto Zoo's commitment to reduce its use of single use plastics at the Zoo.

On Earth Day®, Monday April 22nd 2019, the Toronto Zoo released its brand new plastics statement which highlights our position and actions to fight plastic pollution and its negative effect on habitats and species. The statement includes a list of confirmed actions implemented in 2019; Compass Group Canada conducted a pilot for offering wooden



cutlery in April; plastic cutlery offered in the restaurants by Compass Group Canada is biodegradable; sale of t-shirts made from recycled plastic bottles; increase of reusable water bottle options and travel mugs for sale in retail outlets, to name a few. A spotlight on our Twitter and Facebook pages announced to the public the release of the statement on Earth Day® and included highlights on the harms of plastic pollution.

From July 10th to August 28th, the sustainability team hosted Waste Free Wednesdays, a pilot event to educate guests on the importance of cutting down on plastic waste to protect habitats and species and to highlight the waste-free options available on site. An activation booth included a photo-based "Sustainable Scavenger Hunt" that encouraged guests to engage in actions such as taking a photo picking up a piece of litter, taking a photo while

using something reusable that they brought to the zoo, taking a photo using our reusable cups at a restaurant, and so forth; 8 actions were available, guests returned to the booth at the end of their visit to showcase their photos, receive 10 percent off at our gift shops, and were entered into a draw for a Behind the Scenes Tour. The Recycling Council of Ontario and 10,000 Changes, a sponsor of our Washed Ashore exhibit, participated. Together we had guests use the 10,000 Changes online platform in real time to commit to actionable changes in their daily lives. A total of 2,478 commitments were made throughout the summer. Approximately 2,700 total engagements took place at the booth, 120 guests utilized our Waste Free Wednesday Instagram frame in front of our Under the Sea photo booth, and 72 guests took part in the Sustainable Scavenger Hunt.

A total of 19 educational countertop signs were placed at retail and restaurant locations around the zoo; signage showcased waste-free actions such as receiving the 10¢ off for using a reusable mug and other signs highlighted where items, such as compostable Booster Juice cups, belonged for disposal. Our vendor, Compass Group, tracked and reported on the number of plastic beverage bottles and reusable zoo cups purchased each week before and after the signs were implemented. Where 811 reusable cups were sold, there was still a large proportion of bottled beverages sold (5,898). Waste Free Wednesdays also hosted a number of guests throughout the summer, joining in our efforts to educate on the harms of plastic pollution and to teach guests what they can do to protect species. Our guests included: Turtle Island Conservation, Great Lakes Conservation Program, Adopt-A-Pond, Biodiversity Education & Awareness Network, and Bullfrog Power.



Our brand new interactive “Plastic Travels” children’s educational activity was installed in August 2019 at the Australasia Pavilion. The activity, equipped with tubes and toy balls filled with plastic items, shows how plastic can travel from various sources—our homes, factories, outdoor recreation, roads, and farms—all the way to the ocean through our streams, rivers, and lakes. Cross-functional teamwork between the sustainability team, multiple teams of our Facilities branch, Graphic Design, and Education branch worked together to design

and install a first-of-its-kind activity to engage families with the topic of plastic pollution in our environment.

As an Arctic Ambassador Centre, the Toronto Zoo actively engages target audiences in better understanding the impact of climate change on polar bears and their arctic habitat and the reliance of humans on a carbon-based economy. Through our education programs we encourage students to become engaged in activities within their local community that result in stewardship or conservation actions that mitigate greenhouse gases. We work closely with Polar Bear International (PBI) and partner organizations to; support content development, share messaging tools, coordinate public information activities and create metric tools to measure program successes. Through these activities and collaborations the Zoo informs, inspires, and empowers others to take immediate

steps to reduce CO₂ for the conservation of polar bear habitat and other species impacted by a warming world. Toronto Zoo biologists and researchers work closely with their wildlife biologist counterparts in the field with valuable learning and studies that can be applied to polar bear conservation in the wild. The knowledge gained through polar bears in our care provide invaluable information that is shared internationally and is essential for the survival of this vulnerable species. This is very important as biologists estimate there are only approximately 20,000 to 25,000 polar bears in the wild with approximately 60% of those living in Canada.



The Toronto Zoo proudly showed our leadership in polar bear conservation by celebrating International Polar Bear Day with a new Polar Dip event on Saturday, March 2, 2019. Thirty brave dippers plunged into the icy cold waters to support our polar bear cause. More than \$14,000 was raised by dippers and virtual dippers for polar bear conservation. The Toronto Zoo is a champion for Canada's majestic polar bears listed as vulnerable by the International Union for Conservation of Nature (IUCN) as they are at risk of becoming endangered due to climate change. Proceeds from the Toronto Zoo Polar Dip challenge went to support the Toronto Zoo's role in

scientific research, education and saving and protecting the polar bear for future generations.

The Zoo hosted an e-waste collection weekend in April 2019 for Earth Day® collecting over 2,352 lbs of general e-waste for recycling. To date, the Toronto Zoo has recycled over 43,000 cellphones and donated more than \$32,000 to Great Ape conservation efforts in Africa. From January to April, the Zoo also participated in AZA's Gorilla's on the Line...Answer the Call Campaign; an awareness and fundraising to help Gorilla Conservation in Africa. Through a social media awareness campaign, the Toronto Zoo collected 1,049 cellphones during this period, the second highest number of cellphones collected during the campaign. This initiative collected 12,000 cellphones and over \$5,300 for Gorilla Conservation in the Congos.



Renaturalization/Biodiversity Improvement Projects

The Toronto Zoo continues to commit to renaturalization of the Zoo site. Through Corporate Volunteerism and the commitment of Zoo staff to protect natural ecosystems, the Zoo hosted a tree planting and a large meadow planting in partnership Symcor Inc. in 2019. Symcor supports Acres for the



Atmosphere and Meadows for Monarchs with significant donations as well as 200 staff and family who do the planting. More than 540 hours of volunteer time was committed by Symcor. Our sustainability team presented a lunch & learn for the Symcor that educated on the topic of plastic pollution focusing not only on the protection of species but also the economic downfalls of plastic pollution, gearing the information particularly to the corporate financial firm.



Once again, Toronto Zoo staff hosted two Great Canadian Shoreline Clean-ups at the Rouge Beaches. GEZT hosted a shoreline clean-up for Zoo staff on May 8th for Party for the Planet. The Toronto Zoo readied a connection between both sustainable actions and conservation actions for Zoo staff and Toronto residents this year by combining three separate Zoo actions into one campaign. To celebrate Earth Day®, Zoo staff completed a Shoreline Clean-up Event in a provincially significant wetland that was designated for roadside mitigation work by the Zoo's Adopt-A-Pond (AAP) programme and then invited the local

community to pitch in at a community clean up in September as well. Nine-hundred and thirty pounds of waste plus 103 pounds of recyclables was picked up by 26 staff members in May and an additional 750 pounds of waste and 60 pounds of recyclables were collected by 42 members of the public and 33 staff members in September. This campaign was featured as a Green Tales in the December AZA Connect Magazine.

Awareness with Green Hacks. As part of AZA's Party for the Planet, Toronto Zoo developed five educational how-to videos which we proudly call Green Hacks to promote sustainable lifestyles. Each video, hosted by Toronto Zoo staff provide step-by-step directions on how to easily adopt a greener lifestyle. Welcome to Toronto Zoo Green Hacks discusses the Zoo's commitment to fight the issue on plastics and responsible consumer choice. Beeswax Wraps walks people through the steps of making their own food wraps with textile and beeswax. Let's give up the Ziploc!, Hosting a Green Birthday Party is as easy as one, two, three...., and Green on the Go highlight simple, easy and cheap ways people can make day to day choices and still have what they want. These videos were posted with social media posts (#TorontoZooGreenHack, #Connect2Earth, #EarthDay2019) promoting the Zoo's sustainability initiatives and how we are helping animals in the wild have 1,831 views. Toronto Zoo Green Hack Videos can be viewed at https://www.youtube.com/results?search_query=%23TorontoZooGreenHack.

Partnerships/Collaboration

To achieve the goals of the 2007 Green Plan, Toronto Zoo has reached out to create partnerships and collaborations with like-minded organizations. These partnerships and collaborations have been instrumental in achieving project goals, developing a resource base of knowledge and materials, and developing a network from which to learn and share.

The Toronto Zoo continues to support the PBI “Call to Action” Campaign to showcase Toronto Zoo as an Arctic Ambassador Centre. It outlines some of Toronto Zoo's key goals and ongoing initiatives, such as providing displays that showcase “green energy” for visitors such as Ice-Bear, Geothermal Energy, and Green Roofs; as well as workshops on climate change for grades/youth groups and interpretation at the polar bear exhibit for visitors and educating the public through messaging in Keeper Talks.

Kyla Greenham represents the Toronto Zoo as a member of the Ontario Biodiversity Council (OBC), Biodiversity Education & Awareness Network, AZA Green Scientific Advisory Group and Partners in Project Green.

Toronto Zoo believes every action counts towards saving and protecting wildlife and wild spaces. For 45 years the Toronto Zoo has been active in conservation breeding and release programs in Canada and abroad to help struggling populations thrive.

To expand the scope and reach of programs such as the Black Footed Ferrets, Vancouver Island Marmot, Yellow-banded bumble bee, Lake Victoria Cichlids, Blanding's turtles and Eastern Loggerhead shrike, the Toronto Zoo has partnered with Bullfrog Power to ensure our conservation programs are carbon neutral and have only positive impacts on wildlife by ensuring only renewable energy is used to power our conservation program facilities.



Additionally, two public events hosted at the Toronto Zoo were carbon neutral. Bullfrog Power sponsored the Polar Dip in February and Brew at the Zoo in September. Starting on the right foot, Toronto Zoo also purchases Bullfrog Power for the new Terra Lumina Experience. Guests can experience the luminescent wonders of 2099 knowing their night walk will not contribute to climate change. Terra Lumina is 100% carbon neutral, solely powered by renewable energy sources.

Leadership

In support of the Zoo's Washed Ashore Exhibit and commitment to reducing plastic at the Zoo, the Guest Operations Retail Unit actively sought and replaced many items in the retail outlets with recycled and plastic free items. Discussions with manufacturers and wholesalers were very positive with the target of eliminated plastics from the retail outlets and reducing packaging becoming realistic within the next five years. Examples of items profiled in the retail outlets in 2019 include reusable tumblers and water bottles, Abelle sandwich wraps made from fabric and beeswax, environmentally-friendly plush with fabric and stuffing made from recycled content and organic weight beans, 4Oceans bracelets made from recycled plastic collected from the ocean, t-shirts made from recycled plastic bottles and more than 50% of all the items in the retail outlets with a product or price tag having the tags made from organic, recycled materials.



Toronto Zoo maintains its active member status with AZA's Green Scientific Advisory Group, providing mentorship to members of the sustainability staff at other Canadian Zoos and Aquariums. In 2019, Kyla Greenham attended the AZA Green Summit invigilating sessions on employee engagement, single-use plastic waste, benchmarking and making sustainability a business norm.

The Toronto Zoo continues to maintain its Level Two Ajax-Pickering Board of Trade ECO-business certification.

On Friday September 27th, 27 Toronto Zoo staff and volunteers participated in Toronto's Global Climate Action Strike. Toronto Zoo was out in uniform to make a public plea to take action on climate change. The intent was to engage with our local community to bring awareness about the impact to animals and habitat as a result of climate change; to be seen as a part of the community's voice asking governments to take responsibility to promote action; and to engage staff in being part of the solution.



Employee Engagement

On Wednesday May 1st, in collaboration with Custodial Services and Materials Collections, GEZT rolled out a new Zero Waste Employee Program in the Administrative & Operations Complex, Learning & Engagement Centre, and Guest Relations Centre. All black garbage bins were removed and replaced with a mini black desk bins to help reduce the amount of unnecessary waste being generated; staff are now responsible for sorting their own waste, recycling, and compost at the three-tiered central waste stations where colour diagrams are posted to assist in determining the most appropriate waste receptacle. This program is intended to make staff more aware of their waste volume, encourage staff to consciously reduce their waste, and implement the 3Rs in their daily activities at work. Reducing contamination levels to 0%, engaging zoo staff in achieving Green Plan targets, and becoming a zero waste facility by the year 2027 are the goals. Comparing results of a 3 month implementation waste audit to appropriate components of the 2018 waste audit, a slight improvement was seen in waste diversion by the Toronto Zoo staff. All of the compost bins were free of contamination; a 50% increase in diversion from landfill. Contamination of the recycling bins decreased from 75% to 67%. Toronto Zoo staff have accepted the Zero Waste Employee Program and are making improvements towards achieving a zero waste corporate culture.



In July, the Toronto Zoo took on the Plastic Free July Challenge. Working together, Zoo staff and volunteers had a strong finish of 20th out of the 398 organizations and businesses that participated; placing 17th out of 189 Zoos and Aquariums participating, and 2nd out of Canadian zoo teams. Each team member gathered points by completing their choice of daily month-long challenges and one-time challenges. Daily challenges included things like bringing a reusable water bottle and not using plastic straws. One-

time challenges brought in more points, and participants had to do things like learn about pet waste composting or plant a green garden. For a unique change, organizations opened up the challenge to the public as well. The Toronto Zoo utilized our Membership messaging and social media to promote the challenge and saw 63 individuals of the public join our team.



One-time challenges that took place each Thursday of July saw a great turnout from staff and volunteers; “From Rags to Riches”, a workshop showing how to turn old textiles into reusable bags and make-up removing face rounds saw over 25 participants including a class of our zoo school students; all textiles were donated by Value Village Ajax. Documentaries and Ted Talks were shown to highlight the ills of plastic pollution as well as the ways in which organizations around the globe are shifting the future of plastic. Staff and volunteers also

took part in Plastic Free July Trivia, competing for a coveted 4Oceans bracelet; each workshop was equipped with waste-free snacks, learning and engagement, and a lot of fun.

Overall, the Toronto Zoo Team kept 1,027 pieces of plastic cutlery, 1,019 plastic bottles, 833 plastic containers, and 518 plastic straws out of landfill. 904 pieces of litter were picked up, 100 petitions were signed, 46 hours were volunteered to the cause, and 209 zero-waste meals were prepared. These are just a few of the many feats achieved.

Individual areas like Nutrition have set up special collection bins for frequently used items that are commonly misplaced in the wrong waste receptacle. This has greatly increased compliance with diverting items from landfill as well as educating themselves on the proper disposal method. Other items that have the potential to be reused on site, such as bulk plastic baskets from produce deliveries are stock-piled and offered up to others to be repurposed. Wildlife Care have found unique ways to use these plastic baskets for animal enrichment or as shelves for supplies and equipment. More than 150 items have been repurposed in 2019, including office furniture, artwork, barrels, plastic baskets, bamboo, and gravel.

Toronto Zoo participated in the Waste Reduction Week from October 21 – 27th. Daily emails along with additional resources were provided to staff discussing each of the seven themes of Waste Reduction Week; circular economy, textiles, champions & innovators, plastic & packaging, food waste, swap, share & repair and e-waste. The Zoo also hosted a week long e-waste collection for PhoneApes, a Swap Shop, and a textile collection drive. Two tonnes of e-waste was collected, more than 150 items were swapped and 2.5 tonnes of textiles was repurposed or recycled. Three social media posts regarding the Zoo's waste reduction actions in 2019 and plans for 2020 were shared containing links to the Zoo's Green Hack

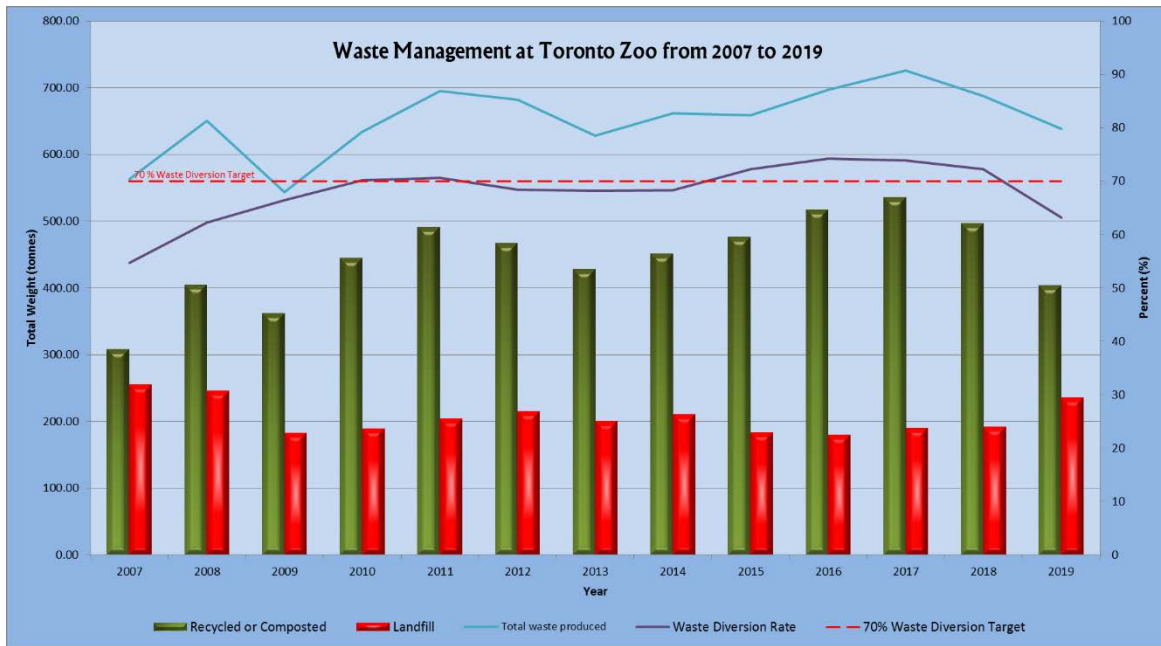


Videos. And finally, three Zoo volunteers and staff presented green hack suggestions for more Zoo sustainable actions.



The Toronto Zoo continues to participate in the TerraCycle recycling program. TerraCycle is an international company with the innovation to divert currently non-recyclable (through local municipal recycling programs) products from landfill by innovative post-consumer waste product manufacturing. TerraCycle will upscale products by directly using the materials submitted into new items for sale such as purses/bags and pencil/pen holders, or recycle other products to create 100% post-consumer waste garbage receptacles, park benches, fence and cutting boards. The Zoo replaced the very popular Cereal Bag TerraCycle collection with the Snack Wrap program in 2019. We continue to offer Air freshener packaging, inkjet cartridges, Brita water filters, latex/nitrile gloves, personal safety equipment, coffee pods and filter cartridges. To date, the Zoo has recycled more than 50,000 items at a weight of 1,541 kg of waste diverted from landfill through TerraCycle.

The Toronto Zoo Material Collections branch working with the City of Toronto Waste Management Division in 2008 set a target of diverting 70% of all Zoo waste from landfill. Setting up an intensive recycling and composting program for the Zoo, as well as increasing public and employee awareness of these programs has resulted in the Zoo achieving this target in 2010. The Materials Collections branch continues to source new opportunities to repurpose, upcycle or divert waste from landfill. Waste diversion in 2019 saw an unfortunate drop below the 70% diversion target. This drop is related to several factors. A few of the Zoo's alternative diversion programs were cancelled by suppliers such as ink cartridges, and large wood products which the Zoo is trying to source new measures. The recycling numbers for hazardous materials have yet to be provided by the vendor. Finally, in 2019, the Zoo worked with the waste management hauler to create a more detailed report on waste produced at the Zoo. The results from Green For Life in 2019 better represent the results of the 2018 waste audit. With more accurate measures of the three waste streams is important to setting a plan to achieve the zero waste target for 2027. The Zoo has been working to reduce waste generated at the Zoo, which can be seen in the graph with a 60 tonnes decrease in waste produced. The Zoo continues to have an issue with the non-recyclable Tim Horton's cups being disposed of in the recycling containers, contaminating that which is sent for recycling above the 10% threshold despite efforts to educate both staff and guests about recyclables, compostables and landfill waste practices in 2019.



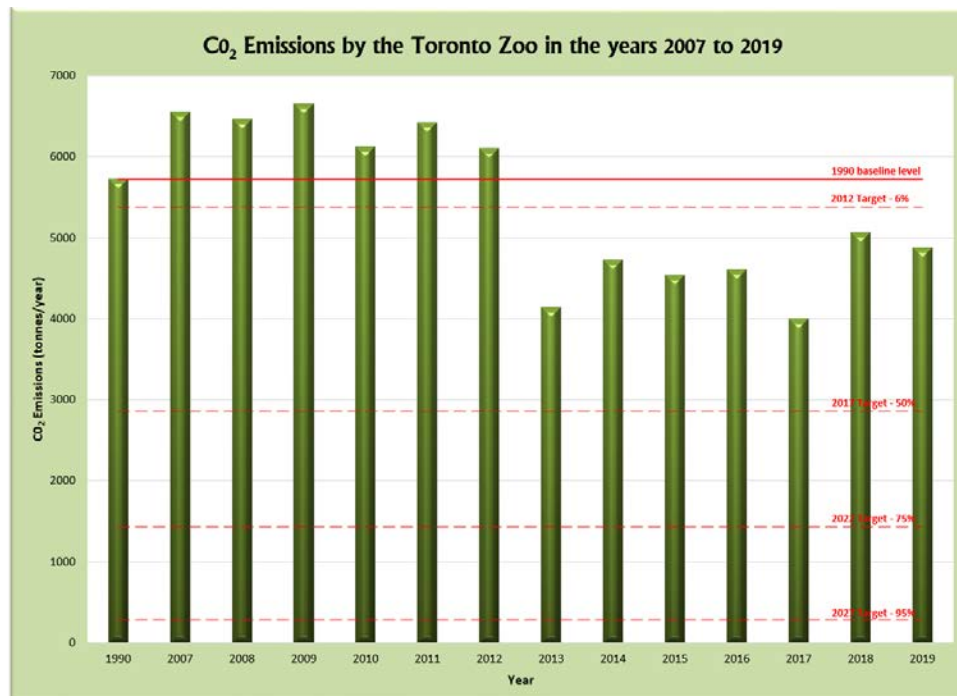
The Nutrition Commissary took on a unique pilot project in 2019. Distribution of daily animal diets consumes a large number of plastic bags every year. To reduce the number of single use plastics used by the Zoo, staff in the Commissary tried a glycine bag pilot project to see if they could replace all plastic bags with a biodegradable paper product designed to hold moist food items. Although, the results of the pilot were not as successful as hoped, the pilot project did identify

opportunities to significantly reduce the amount of plastic bags. All dry feeds are now packed in brown paper bags instead of plastic. The switch has saved approximately 63,000 individual plastic bags from entering the landfill or recycling system per year.

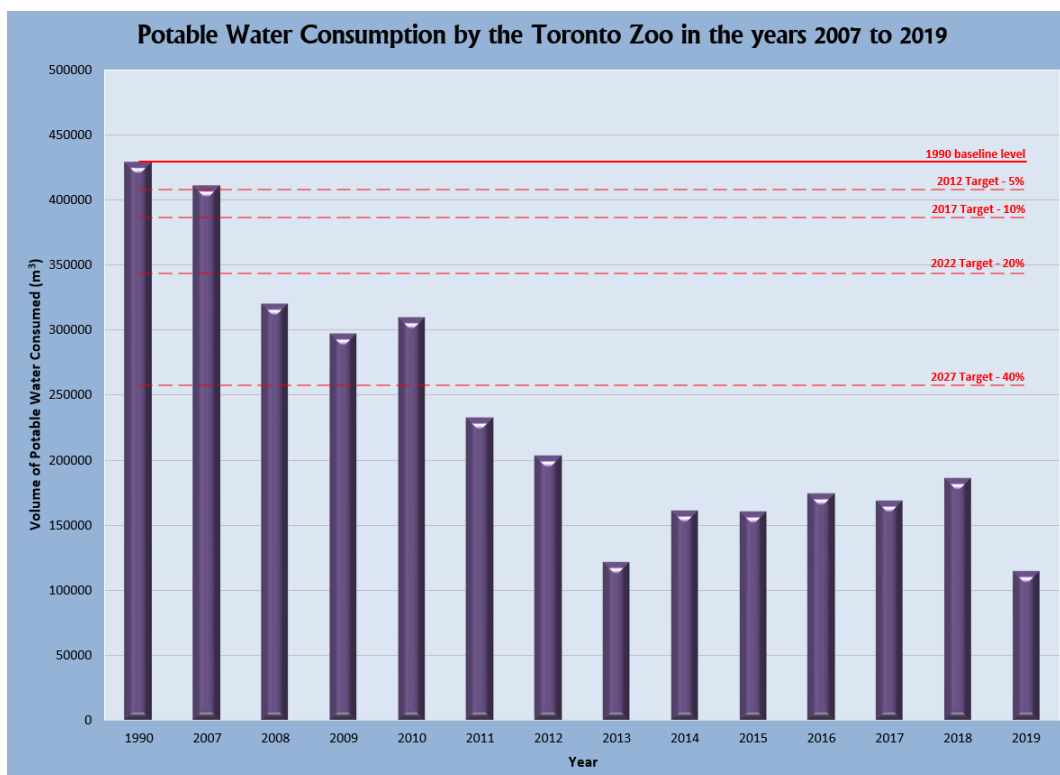
Human Resources is working on improving the Payroll system for the Toronto Zoo and has encouraged 80% of staff to adopt an electronic pay stub delivery system.

The Toronto Zoo hosted its first and fourth Zero-Waste Events in 2019. On August 21st, General Management led the way by hosting the first Zero-Waste event with the Strategic Plan Stakeholder's Meeting. Careful consideration was given to all foods offered to attendees, the probability of recycling or composting their packaging as well as the reuse and recycling of all other materials required for the meeting. The first public Zero-Waste event followed shortly after on August 31st at Brew at the Zoo. With the success of these two events, Zoo staff continued to work with the Conservation Office to host a Zero-Waste Volunteer Appreciation Event and the Outdoor Sumatran Orangutan Habitat Project Launch. GEZT and Material Collections will continue to work together in 2020 to offer more Zero-Waste Events and improve public participation in recycling and composting.

Greenhouse gas emissions in 2019 began to drop again after the significant increase seen 2018, dropping from 11.5% below 1990 levels in 2018 to 14.8% below 1990 levels in 2019. Behavioural changes, updated mechanical systems and the initiation of the Building Automated System aided in achieving reductions in energy consumption.



Water consumption reduction continues to be a strong area of conservation for the Toronto Zoo. Consumption of potable water was at its lowest levels at 73.2% below 1990 levels. Messaging around water conservation from the Washed Ashore Exhibition contributed to behavioural changes to reduce water consumption.



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