OEPA E3 Award Application

Presented by

Cleveland Metroparks

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Organization Information

Cleveland Metroparks mission is to conserve significant natural resources and enhance people's lives by integrating high-quality outdoor education, recreation, and zoological opportunities into people's lives. Cleveland Metroparks was established in 1917 to provide open greenspace for the people of Greater Cleveland and to preserve the natural resources of the region. Today, the Park District consists of 23,553 acres in 18 reservations. Cleveland Metroparks is often referred to as the "Emerald Necklace" because it encircles the City of Cleveland and its suburbs with diverse greenspace and natural ecosystems. Cleveland Metroparks celebrated its 100th Anniversary in 2017.

Cleveland Metroparks serves over 48 million visitors annually through its 300 miles of trails, including all-purpose trails, hiking trails, mountain biking trails, and bridle trails, numerous picnic shelters, five swimming beaches, five outdoor education facilities, eight golf courses, and Cleveland Metroparks Zoo. Cleveland Metroparks manages property in 49 municipalities and is accessible within 15 minutes from any location in Cuyahoga County. Cleveland Metroparks reservations are open and accessible to the public 365 days per year with no admission fees, regardless of residency. Cleveland Metroparks averages 645 full-time and 125 part-time employees.

Natural resources are carefully managed throughout the Park District and the overall goal is to balance the needs of these natural areas with the needs of the park patrons. Various public programs are offered throughout the year that focus on science, wellness, and recreation for school groups, youth, adults, families, and seniors. Cleveland Metroparks operates a strong volunteer program and in 2017, 4,587 volunteers donated 124,632 hours of time to the Park District.

Cleveland Metroparks has long been recognized for its excellence in providing consistent, high-quality park maintenance. In 1994, 2001, 2007, and 2016, the Park District received the National Gold Medal Award for Excellence in Park and Recreation Administration. Cleveland Metroparks was also certified in 2013 by the Commission for the Accreditation of Park and Recreation Agencies (CAPRA), the most prestigious organization to certify park agencies in the country.

To ensure financial sustainability, Cleveland Metroparks relies on a diversity of revenue streams to support all aspects of the Park District. Cleveland Metroparks operating levy supports 65% of the Park District's overall budget. Other major sources of revenue include grants and donations (9%), Cleveland Metroparks Zoo (8%), golf operations (6%), and concession sales (4%). Cleveland Metroparks is a separate political subdivision of the state of Ohio. The Park District is governed by Cleveland Metroparks Board of Park Commissioners, composed of three citizens who serve three-year terms without compensation. Board members are appointed by the presiding Judge of the Probate Court of Cuyahoga County.

Cleveland Metroparks has adopted a non-discrimination policy, which is available via the Park District's website, www.clevelandmetroparks.com. The policy reads:

> "The Chief Executive Officer for Cleveland Metroparks has adopted a policy acknowledging that Cleveland Metroparks operates its programs, services, and activities without regard to race, color, religion, age, national origin, national ancestry, sex, pregnancy, gender, sexual orientation, military service

Environmental Stewardship Criteria

1. Management Commitment: Describe management's commitment to environmental stewardship. Examples of management commitment may include: having a written goal; promoting environmental stewardship through your policy; rewarding individuals who promote environmental stewardship; and continuously improving environmental practices throughout the organization.

Cleveland Metroparks (CM) mission is Conservation, Education, and Recreation. Conservation includes the protection, management, and restoration of lands and waters. Education and Recreation are tools by which CM connects people to the outdoors and encourages environmental stewardship.

In 2014, CM officially announced its Core Values that were developed by the entire staff through meetings and surveys conducted throughout the preceding year. Specifically, the identified Core Values are: Integrity, Professionalism, Teamwork, Respect & Dignity, Guest Focus, and Sustainability (Attachment 1A). Naming "sustainability" as a CM Core Value demonstrates its importance to the entire staff in addition to the organization. New staff are trained on Core Values during the "onboarding" process with each day hyper-focused on a specific value (Attachment 2B). To ensure staff's commitment to continually incorporate the Core Values into their work, CM employee annual performance evaluations include a measurement of each employee's actions regarding each Core Value, including sustainability.

Cleveland Metroparks 2020: The Emerald Necklace Centennial Plan, updated in 2015 (Attachment 1C), builds CM's vision around the "triple bottom line" of sustainability - People, Planet, Profit [Fiscal Responsibility]) - by stating, "CM will be the national leader for sustainable green infrastructure that provides essential environmental, economic, and community benefits for people in its core service area, the surrounding region, and the global reach of CM and the CM Zoo."

Sustainability is supported throughout CM by the interdepartmental ECO (Employee Conservation Opportunities) Team. They created the Sustainability Best Practices Guide (Attachment 1D), a continually evolving resource for employee decision-making around key areas of sustainability that mirror the Sustainability Policy (Attachment 1E). This committee is chaired by CM's full-time Sustainability Manager (Attachment 1F).

CM is committed at the highest levels to land acquisition for preservation. In 2017, CM had 10 real estate transactions totaling 171 acres, receiving $4.4M in land value while only expending $250,000 in Park District dollars. In 2018, CM is on track to acquire an additional 221 acres. (Attachment 1G)

2. Employee Involvement: Describe efforts to involve employees in the development and implementation of environmental stewardship activities. This may include training programs, recognition and awards, education employees through the organization's publications, involving employees in re-designing products or processes, or otherwise using individual's ideas to reduce waste.

In 2001, an internal working group at CM was established to explore, fund, and implement sustainable practices throughout the Park District. Originally named the "Recycling Environmental Team," because of the focus on recycling, this employee-driven group transformed into the "Employee Conservation Opportunities Team" (ECO Team) in 2005 to reflect its broader mission of "promoting environmental sustainability for CM employees, park visitors and community partners by creating opportunities that foster education and innovation." The ECO Team has worked and continues to work on matters ranging from recycling, responsible procurement, advocacy for alternative energy sources in internal operations, and a Non-idling Policy to reduce vehicle carbon emissions (Attachment 2A). The ECO Team also advances the Park District's Mission to "conserve significant natural resources and enhance people's lives by integrating high-quality outdoor education, recreation and zoological opportunities into people's lives."

As CM further refined its vision to "be a national leader for sustainable green infrastructure that provides essential environmental, economic, and community benefits for people in its core service area, the surrounding region, and the global reach of CM Zoo," the ECO Team was inspired to further formalize its efforts by driving the development of the Board-level "Sustainability Policy" (Attachment 1C) with input from all Park District and Zoo departments, senior administrators and Board members, which advances strategic goals within each of the following focus areas:

- Ecological Stewardship of Land, Water, Flora, and Fauna
- Water Quality, Conservation, & Storm Water Management
- Energy Efficiency and Conservation
- Resource Consumption & Waste Reduction
- Education and Awareness
- Community Resurgence
- Trails and Open Space

This Policy was recommended by CM Chief Executive Officer and adopted by the Board of Park Commissioners of the Cleveland Metropolitan Park District on August 17, 2017.

In order to accomplish the goals delineated in the Sustainability Policy, the ECO Team was tasked with creating a "Sustainability Best Practices Guide" which was accomplished with practical input from multiple staff and senior administrators, representing all departments, who met in 7 separate focus area workgroups over the course of approximately 9 months. This guide was reviewed and approved by the CEO on June 5, 2018 (Attachment 1B). The ECO

Team is currently working on a plan to better educate the entire staff on the content of the best practices and how to incorporate them into each work activity.

An additional effort to involve employees in the development and implementation of environmental stewardship activities throughout the Park District is the ECO Green Project Grant Opportunities. In 2006, an ECO Green Project Fund was created from the revenue generated from recycled materials and is used to support programs/projects within CM through a competitive grants program. Any employee in any department can apply for one of these grants. Applications that score the highest in meeting the established criteria are awarded funds for the identified project (Attachment 2B). A summary of several past years' awards is attached (Attachment 2C, 2D, and 2E). In 2018, the grant application was re-tooled requiring employees to demonstrate a direct correlation to how their project would advance the 2017 Sustainability Policy goals.

All of these efforts involve employees in the development and implementation of environmental stewardship activities, policies and procedures.

3. <u>Continuous improvement</u>: Describe how you use continuous improvement practices, including environmental management systems, to improve environmental quality and performance. Describe your key performance indicators and goals that you are pursuing. Please quantify results. This may include either incremental (progressive small steps) or breakthrough (giant step) actions.

In order to maximize the benefits from sustainable practices, CM regularly pilots projects in one location in order to field test an idea or product. For example, the Park District has completed multiple parking lot retrofits throughout its 18 reservations that incorporate storm water management techniques in order to reduce the impacts of storm water on our area's combined sewer systems. A large underground detention tunnel was first installed in the maintenance yard in Hinckley Reservation (see photo below left). After a successful installation, the same equipment was installed in the parking lot in our Administration Building. Similarly, the first installations of permeable pavers in the parking lots at Seneca Golf Course (5,700 sf, see photo below right) and at the Administration Building (3,450 sf) are small areas confined to one portion of the parking lot in order to monitor wear and maintenance needs. After several years, staff will be able to determine the success of the permeable pavers

in heavy traffic areas. CM also uses storm water calculation programs to predict the volume of storm water that will be captured with each of these projects in order to provide concrete metrics related to these projects (Attachment 3A). The retrofit in the Administration Building parking lot will reduce the amount of runoff from the parking lot by 1,056,150 gal/year.

As a public park district that maintains over 100 miles of roadway, CM uses road salt to maintain the safety of these roadways during the winter months. CM piloted a salt substitute in Garfield Park Reservation, which was funded by the above-mentioned ECO grant program, to determine its efficacy before making a large purchase and/or using throughout the Park District. Unfortunately, this pilot project proved unsuccessful in that the product did not thoroughly melt the ice on the roadways in a timely manner. This pilot proved extremely beneficial though to avoid unnecessary expenses and to not jeopardize the safety of park visitors. Currently, the amount of salt used in each reservation is tracked and roadway areas are prioritized in order to use the least amount of road salt as necessary.

Another aspect of CM operations that tracks continuous improvement is with the Park District's Recycling programs. All park managers and facility managers are required to track recycling totals on a monthly basis and to submit these reports to the Sustainability Manager. This allows for tracking by reservation and by material type. Recycling totals allow CM to track continuous improvement of recycling efforts on an annual basis.

In addition to energy efficiency upgrades such as changing light bulbs, replacing doors/windows and appliances, for example to the most energy efficient as noted in question 8., considerations are also made regarding water conservation efforts. Below are some examples made in animal exhibits at CM Zoo, some of which were paid for with recycling revenue that resulted in huge water savings:

> *Gorilla Pool:* chlorine feeder system completed in April 2012. The new system provides an adequate and safe level of chlorine, reduced labor and water costs for dumping and filling the pool now only 1 or 2 times a year, which means less time that gorillas are off exhibit. Water usage has dropped from 176,000 gallons per year to approximately 44,000 (with better than expected results, we may see our water usage drop to ~ 20,000 gallons for dumping and refilling).
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> *Sea Lion Indoor Pool:* previously, the animal care staff was using a dump and fill method while running domestic water constantly into the pool to kill off any bacterial and promote a constant water change. Using this method, we had estimated about 7,200 gallons of daily waste. In August 2013, we added filtration and are now saving ~80% of water usage from the old method (Attachment 3B).

4. Innovation: Describe how the applicant's environmental stewardship activities are innovative and compare it to standard practices being used elsewhere. Provide information on innovative research and development the organization uses to support this activity. Include a description of practices that exemplify outstanding creativity, introduce new approaches or advance emerging technologies.

While CM's Sustainability Policy and Best Practices Guide steers overall sustainability activities across the Park District, CM's Division of Natural Resources provides leadership toward appropriate on-the-ground environmental stewardship activities. Compared to other similar park districts across the country, CM is unmatched in the robust staff of experts and generalists (Attachment 4A) that carry out the division's guiding principles as outlined in the Natural Resources Management Approach and Plan (Attachment 4B).

To accomplish this Plan and guide the actions of the Park District at large, the Division of Natural Resources utilizes an innovative ecosystem management approach to environmental stewardship. This approach relies on adaptive management to continually gather new data while making well-informed decisions about land use and modifications. Below are select examples of some of the innovative ways CM researches, monitors and manages its natural resources.

Habitat & Fisheries Management and Restoration:

- Large-scale stream and wetland restoration projects are informed by monitoring data and evaluated by using state-of-the-art protocols and equipment.
- Ongoing land management projects utilize full suite of technologies from basic brush-hogging to prescribed fire to drone imagery for evaluating efficacy.
- The Invasive Plant Management Program coordinates and prioritizes treatments completed by full-time invasive plant management staff, natural resource managers, park maintenance staff as well as volunteers.
- Fish transfer initiatives retrieve unwanted fish from ponds that are being drained, dredged, or are not managed for fishing and moves them into public fishing areas managed by CM. Tax credits are provided for the value of fish moved from private property.

Assessment and Monitoring Programs:

- The Plant Community Assessment Program is a long-term, district-wide condition assessment of plant communities. Protocols are repeated every 5 years on 400 plots to inform resource managers about the current and changing conditions.
- The Stream Assessment Program has conducted a complete census of 1,000+ primary headwater streams, utilizing OEPA protocols – HHEI, HMFEI.
- The Wetland Assessment Program has mapped ALL of the wetlands across the entire Park District, allowing for proper protections of wetlands of all sizes.

These programs allow external researchers to layer on specific questions and develop meaningful academic studies. For example, in partnership with Michigan State University (MSU), CM deployed 200+ wildlife cameras at a portion of the abovementioned vegetation plots. Volunteers assist with maintaining the cameras and downloading pictures, while CM and MSU upload images to www.zooniverse.com to allow anyone in the world to contribute by identifying wildlife in the images. CM is also working with software program volunteers to develop artificial intelligence for faster sorting of the images. This project not only answers simple questions such as what wildlife are using CM properties, but also more complex questions like human impact on wildlife behavior.

CM also regularly partners with local and regional universities such as Kent State University, Case Western Reserve University, Cleveland State University, Bowling Green University, The Ohio State University and Baldwin Wallace University to address questions related to stormwater, antimicrobial resistance, stream fish forage competition, historical plant communities, macroinvertebrate populations and invasive plant management effectiveness and stream metabolism.

Assessment and monitoring data also inform activities undertaken across a variety of divisions, including site construction, trails, park maintenance and golf. Examples of activities include grow-no mow meadow management, coarse woody debris policy and management, trail construction and rehabilitation, guidelines for landscaping with native plants and vegetation management policy.

CM also recognizes the importance of public involvement in all aspects of its work, hosting volunteer opportunities for research, monitoring and management. CM has developed ways to encourage staff and public engagement beyond organized activities by promoting existing citizen science initiatives such as iNaturalist and eBird. CM has also developed custom citizen science apps to benefit CM studies like ParkApps NEO – a free app download that provides unique user engagement through "Adventure Tracks", as well as a variety of citizen science opportunities (e.g. basking turtles, aquatic invasive weeds, bumble bee, coyote monitoring, hemlock woolly adelgid, etc.).

Specific hardware technologies utilized by CM include:

- Fulcrum – Project-specific online data forms that are designed and tracked by staff
- FLIR – Infrared imagery for spotting deer at night. Used for population analysis
- Drone, Kite & tethered Balloons – Aerial imagery to document before and after restoration and management activities
- iPads & waterproof Yuma w/ GPs – replace paper for data collection
- Turbidity sensors, conductivity probes, pressure transducers – water quality & quantity monitoring
- MOTUS towers & nanotags – monitors bird movements across Lake Erie (https://motus.org/)

- Pit tags – snake population monitoring
- GPS collar – coyote movement tracking
- One-of-a-kind biomimetic floating booms – developed in partnership with Cleveland Institute of Art to keep debris out of critical fish habitat along the Cuyahoga River

Section 4 in the Community and Regional Sustainability section will describe how these internal efforts contribute at the larger community and regional scales.

5. Life cycle assessment: Describe any analysis completed to evaluate and quantify the environmental impacts of a product, material, process, activity or service throughout its entire life cycle, from design and formulation through end-use recycling or ultimate disposal. Some organizations use life cycle analysis to help modify their processes and products to realize cost savings and reduce environmental impacts. Describe how your organization uses life cycle analysis to identify opportunities to improve environmental performance and inform decision-makers in your organization. Please quantify environmental improvements from these efforts.

Annually, reports are created that are utilized by CM Finance Department to calculate and list the projected depreciation of capital assets. The Capital Asset document is updated for additions and retirements once a year. All capital assets are depreciated, except for land and construction in progress.

The Finance Accounting Manual outlines depreciation guidelines. CM depreciates in accordance with the Governmental Accounting Standards Board (GASB) 34 (Attachment 5A). CM outlines varying structures life expectancy, (Attachment 5B) roads, and computer equipment technology as a guideline according to the GASB 34.

Additionally, CM utilizes a digital database to house information pertaining to all buildings and structures throughout the park (Attachment 5C). The information maintained within this database provides an estimated replacement cost and an avenue for quick and consistent access to information pertaining to the physical characteristics and historical evidence of the building/structure.

Recently, after a several month Lean Six Sigma project, several conclusions were made to determine the best and efficient way to provide the most productive fleet. Included in the analysis were topics such as: purchasing, sharing, and disposal time frame. New procedures will require effort and financial commitment.

CM is dedicated to a clean, safe and efficient workplace for employees and for the public using the parks. Roads, infrastructure, and play equipment are regularly tracked for life cycle analysis. Outdoor Experiences Division uses surveys and attendance figures to gauge the life cycle of their programming so they are always offering the public fresh and current options.

CM does not produce products or materials, but has a volume of materials that reach the end of their life cycle and need to be disposed of in an environmentally friendly way. This includes vehicles, computers, batteries, ink cartridges, and clothing.

- With a large fleet, CM uses software to track vehicle maintenance. When the repairs reach 50% of the original purchase price, the vehicle is flagged for replacement. Old vehicles are sold at auction.
- Computers are on a five-year replacement schedule and are donated to RET3 Job Corp. They refurbish those that are still useable, reuse parts of others, and de-manufacture the rest for recycling.
- Additional old equipment and unused supplies or items are sold on Govdeals.com
- In 2018, CM held a live auction where 511 items were sold for a profit of $171,000.
- CM uses thousands of uniform clothing items for employees and volunteers. At the end of their life, logos are removed and they are donated to the City Mission.
- CM has a long list of materials that are separated for recycling from the landfill bound waste stream.

6. Sustainable Materials and Purchasing: Quantify the use of renewable, recovered or recycled materials. Describe how these materials are used to reduce environmental impacts. Describe your efforts to buy products or services that have a reduced environmental impact when compared with competing products or services. This comparison may consider raw materials, production, manufacturing, packaging, distribution, reuse, operation, maintenance or disposal of the product or service. This description should include any costs or savings resulting from these efforts.

In accordance with CM's Sustainability Policy, we recognize our responsibility to the environment while supporting a diverse, equitable, and vibrant community and economy. CM also recognizes that the products and services we buy have inherent social, human, health, environmental, and economic impact and that CM should make purchasing decisions that embody, promote, and encourage the commitment to sustainability when fiscally logical.

The Sustainable Purchasing Policy is intended to:

- Incorporate sustainability standards into purchasing decisions;
- Encourage the purchase and use of materials, products and services that best align with Park District fiscal, environmental, social, community and performance goals;
- Reduce the amount of environmental impact from Park District use of products including reduction of greenhouse gas emissions, reduction of waste to landfill, health and safety risks and resource consumption;
- Empower staff to be innovative and demonstrate leadership by incorporating progressive and best-practice sustainability specifications, strategies and practices in purchasing decisions.
- Encourage vendors to promote products and services that they offer which are most

suited to the Park District sustainability principles.

- Communicate CM commitment to sustainable purchasing, by modeling the best product and services choices to citizens, other public agencies and private companies.

General Purchasing Policy Statement: CM shall acquire its goods and services in a manner that integrates fiscal responsibility, social equity, and environmental stewardship. Each division shall encourage department decisions that reflect the policy objectives. CM shall promote and encourage product and service acquisitions compliant to the policies and guidelines adopted herein.

Sustainability Factors: Environmental factors to be considered in product and service acquisitions include but are not limited to, the assessment of: Pollutant releases and toxins, air emissions, water pollution, waste generation and minimization, greenhouse gas emissions, recyclability and recycled content, energy consumption and efficiency, use of renewable energy, depletion of natural resources, potential impact on human health, biodiversity, industrial environmental practices, third party certification, organic content, local purchasing and the cost to own (Attachment 6A). Ultimately, the total lifecycle of the product may be evaluated and considered to determine the best overall value to the park district.

Sustainable Products: In partnership with Cuyahoga Valley National Park, CM currently produces some of its own hay and straw. As the field continues to evolve, the Park District will be able to provide food (hay) to our Zoo animals and Ranger Mounted Unit horses, bedding (straw) for the animals, construction projects, entertainment (Boo at the Zoo Halloween event), and more. In 2017 and 2018, CM harvested six semi-loads (3 in 2017 and 3 in 2018) equal to 36 tons of material for the hay maze for Boo at the Zoo; ultimately saving the Zoo $25,920 in product bought from CM's Hay vendor via a formal bid. (Attachment 6B)

Sustainable Packaging: The Park District partners with vendors to reduce packaging waste with the delivery of goods. For example, currently the park has a contract with Independence Business Solutions for Office Supplies. Most orders (except for paper) are delivered in plastic totes. Once the products are removed, the totes are picked up the next day or by the next order. This ultimately has reduced the amount of shipping packaging materials that went into the solid waste stream and reduced disposal costs.

Sustainable Procurement: In 2017, CM implemented a new robust ERP accounting system, Munis by Tyler Technologies, which improved the electronic work flow and processes of requisitions, contracts, accounts payable, accounts receivable, pro card, and much more. This system has increased the efficiency of staff, increased the flow of goods and services to staff, as well as reduced the consumption of paper and toner for printing purchases orders, invoices, requisitions, statements, paystubs, etc.

7. <u>Pollution prevention</u>: Pollution prevention is source reduction and recycling. Describe the process modifications to improve efficiency, use of improved feedstocks, material substitutions, good operating and management practices, in-process recycling, and other efforts to reduce waste generation and conserve resources that have been implemented at the facility. Quantify the results including cost savings.

CM is continuously looking for ways to become more efficient in our operations. In addition to other examples throughout this application, below are some of the various ways we have reduced waste or materials going to a landfill or for recycling at the end of their life:

- CM mills boards from trees taken down or chips them for use on trails as well as being made available to the public for free.
- On one Valley Parkway project, 30 trees had to be removed, but they were used to build a bridge at Forbes Woods. Another project where the trees were not furniture quality, a company made them into pallets.
- Zoo Horticulture works closely with the Natural Resources Division to collect invasive or non-native plants to be used as browse for Zoo animals
- Hay that is not food quality for Zoo animals has been used for Site Construction projects to prevent erosion.
- CM Annual Employee Picnic is planned for Zero Waste
- CM has streamlined several purchasing lists to fewer product choices, adding ones that are more environmentally preferred.
- We use govdeals.com to sell equipment, furniture, vehicles that are no longer needed
- CM Zoo switched one type of gloves to a Kimberley Clark brand because they offer a recycling program for them.
- We work with vendors to reduce packaging where we can for reuse, like Independence Business Supply, or to something that is recyclable, and not Styrofoam.
- Old uniforms get repurposed into rags, mattress stuffing, or insulation materials
- When we purchase new properties that have buildings on them, we deconstruct materials of value that can be repurposed elsewhere in the parks before demolition (23 in the last two years).
- Zoo Animal Care reuses and washes containers for daily food deliveries
- Produce, fish, or grain that has gone bad is composted. Dedicated food storage, which can help to prevent waste, was designed into the new Zoo Hay Barn constructed in 2017.
- Employee water bottle filling stations are located in several work areas, park locations and within CM Zoo reducing single-use plastic.
- At CM restaurants, straws are available only by request and we are looking for a reliable quality paper option to replace plastic (Attachment 7A).

8. Energy efficiency: Quantify efforts to conserve energy and fuel use, use more energy efficient products and/or modify operations to improve energy efficiency. This description should include any costs or savings resulting from these efforts.

CM strives to reduce energy consumption throughout the park district. This is done by upholding its mission to monitor, reduce and explore other opportunities. Within the Sustainability Policy, "Energy Efficiency and Conservation" is a focus area. CM employees are expected to adhere to this policy and are encouraged to contribute towards its effort and use the Sustainability Best Practices Guide for reference.

Two sections of CM Handbook, which reflect energy usage and ways to conserve energy:

Sustainable Practices: In furtherance of its conservation mission, the Board of Park Commissioners adopted the Sustainability Policy with which all employees and volunteers must comply. Some examples include:

- Conserve energy by turning off lights, adjusting thermostats, and turning off equipment when not in use.
- Reduce, reuse, and recycle products to reduce waste and conserve natural resources.
- Buy local food and products, thereby reducing distance food travels to consumption.
- Use fuel-efficient vehicles.

Vehicle Idling Policy: The reduction of vehicle idling is a documented method of fuel conservation and a practice that reduces exhaust as a source of air pollution. Employees are required to turn the engine off in instances where idling lasts one minute or longer. In addition, employees should not "warm up" engines before driving, as it is not a necessary practice.

CM seeks to reduce vehicle use and has an application pending with the League of American Bicyclists for a "Bike Friendly Business" designation for its Administration building, which houses CM's top management. The building's 107 employees have access to an in-house bike share, showers, covered bike parking (Attachment 8A), bike repair classes and they celebrate "Bike to Work" days in the summer. CM employees can buy RTA passes with a pre-tax payroll deduction.

At CM Zoo, a significant reduction in unleaded gas usage occurred over a 6 year-to-year period when a reduction in driving habits change was made (Attachment B).

The Fleet Manager is currently completing a 2018 study with Evelocity. Ninety-six vehicles were tracked via GPS for six months to determine best alternative fuel use. Electric vehicles were favored and CM is just beginning to formulate a decade-long plan to potentially add charging stations and electric fleet (Attachment 8C).

Further practices:

- Parking lot timers are used throughout CM and are adjusted monthly to accommodate the changing daylight throughout the season.
- Where possible, CM implements solar power. Some outdoor lights, river monitoring stations, the zoo carousel and a weather station operate on solar power.
- Specific facilities have converted older lighting to more efficient LED bulbs and fixtures.
- Newer facilities have light sensors triggered only when the room is occupied.
- Energy audits can be performed by the building/facility managers to monitor these savings and overall electrical consumption on a quarterly basis through accounts payable.
- In new construction, such as the new administration building wing, state-of the-art technology is installed to promote virtual meetings and conference calling.
- Employees are encouraged to save energy creatively such as combining orders or having dumpsters emptied on an as-needed basis versus a weekly basis.

A specific example of fuel reduction from CM's Sleepy Hollow golf course is listed below:

The hybrid mower on the left was acquired in 2014 to replace the conventional mower on the right. Previous to 2014, we averaged 900 gallons of gas to mow our greens during the golf season. Currently we average 315 gallons of gas to mow the same greens. This has been a significant reduction in our fuel consumption. Each of the eight golf courses throughout the park district have upgraded to these new mowers and show quantifiable amounts of fuel reduction.

Throughout CM Zoo we have been updating lighting fixtures with LED technology. We have hundreds of dual tube 32w T8 ballasted fluorescent fixtures in the zoo. We retrofit current fixtures with self-ballasted LED tubes by removing the ballasts and rewiring the ends to accommodate the self-ballasted LED's. The new LED tubes are 15w, which is less than half of

the current 32w fluorescent tubes being replaced. We recycle approximately 2,000+ fluorescent, HID, mercury vapor, and specialty aquatics lighting each year.

Below are examples of HVAC equipment replaced throughout CM Zoo in the last 4 years to the most energy efficient at that time. (Attachment 8D, shows energy savings in 2018 at CM Zoo RainForest building).

Location	**New equipment**	**Replaced Equipment**
AEC	2- 600,000 BTU Condensing Water Heaters 98%	Fulton Pulse 1,000,000 BTU Water Heater 88%
Wade Hall	2- 80,000 BTU Furnaces and A/C Condensors 96%	2- 80,000 BTU Furnaces and A/C Condensors 80%
Zoo Admin	1 - Carrier 50 Ton RTU	1 - Trane 50 Ton RTU installed 1981
Koala	1 Aaon Packaged unit 1.2 MBH	1 - Engineered air Packaged Unit 1 MBH installed 1998
Hospital	1 - Aaon Packaged Unit 1.28 MBH	1 - Engineered air Packaged Unit 1.3 MBH installed 2001
GreenHouse	1 - 500,000 Btu Condensing Boiler 98%	1 - Peerless 1,400,000 Btu Boiler Installed 1982
RainForest	1 - 2MBH Condensing Water Heater 98%	1 - Steam to Hot Water Heat exchanger

9. <u>Recycling programs:</u> Quantify your recycling activities and describe how recycling programs are used to reduce environmental impacts. This description should include in-process and onsite efforts, use of external recycling programs and any costs or savings resulting from these efforts. Indicate whether quantified recycling information has been reported to your solid waste management district or other organizations.

CM has established procedures requiring recycling throughout the organization (Attachment 9A and 9B). The recycling program covers numerous inorganic materials, including but not limited to paper/cardboard, metals, plastic and glass containers, batteries, and fluorescent tubes (Attachment 9C and 9D), as well as organic materials including animal waste, food waste, and landscape debris. Annual recycling data is submitted to the Cuyahoga County Solid Waste District (Attachment 9E). One public recycling program is in partnership with River Valley Paper Recycling Company.

Containers are located throughout the park district for the community to recycle newspapers, magazines, catalogs, junk mail, phonebooks and cardboard (Attachment 9F). In addition, every park location provides general trashcans and commingle plastic, aluminum, and glass recycle stations throughout the reservations and golf courses (Attachment 9G). CM Administration building received new waste stations when a building addition was completed (Attachment 9H). Some of the recycling containers at the Zoo were initially purchased with a 2010 ODNR Community Development grant (Attachment 9I).

Employees are encouraged to plan meetings and events for zero/reduced waste, such as the annual 'Crossroads' Employee Picnic (Attachment 9J and 9K). In addition, recycling opportunities and education occur during events at Cleveland Metroparks Zoo, such as Twilight, which sells out annually at ~7,000 guests (Attachment 9L), as well as at some non-CM sponsored events held at CM venues.

Recycling revenue, averaging ~ $33,000 annually, is deposited in restricted accounts that allow that money to be spent on such items or services as:

- Tire recycling
- Hazardous Waste disposal
- Purchasing new waste and recycling containers
- Memberships in sustainability related organizations, such as U. S. Green Building Council
- ECO Grants, which are awarded internally for any part or full-time employee to complete a sustainability project in the park district
- Some special recycling collections, such as aluminum cans, cell phones, or holiday lights, support international wildlife conservation projects

10. Organics Diversion: Quantify your efforts to divert organics from the solid waste stream. Describe how your organics diversion program, including composting and anaerobic or enzymatic digestion, reduces environmental impacts. This description should include onsite efforts, use of external facilities and any costs or savings resulting from these efforts.

CM has established procedures requiring recycling throughout the organization (Attachments 9A and 9B). The recycling programs cover numerous inorganic materials, including, but not limited to paper/cardboard, metals, plastic and glass containers, batteries, and fluorescent tubes, as well as, organic materials including animal waste, food waste, and landscape debris.

There are many benefits to composting on-site. It reduces the amount of organic materials sent to area landfills and reuses valuable materials. In addition, composting:

- Reduces waste hauling costs CM currently pays $168 per haul for 20-40 yard open top containers; in 2017, there were 143 hauls, in 2016, 145 hauls.
- Reduces the need for purchasing synthetic fertilizers, mulches, and compost
- Naturally adds nutrients to CM Zoo's award-winning specialty gardens and beds
- Provides high-quality compost to gardeners which brings revenue to the Zoo
- Composting cycle is a focus for educational outreach

CM Zoo started composting in 1996. We have an on-grounds, ½ acre, EPA Class III composting site (Attachment 10A). We process manure and bedding materials, such as straw and wood shavings, from our many herbivorous animals, including elephants, giraffes, zebras, rhinos, kangaroos, and camels along with yard waste, such as landscape debris, hay bales, fall leaves, pumpkins, and corn stalks to create a natural soil amendment. We do not include primate or carnivore manures due to the bacteria that might be present, which is harmful to humans. The materials are delivered daily to the compost site where they are mixed and stored in 5 windrows (Attachment 10B). The site is too small for all of the ~5,000 cubic yards of organics we produce annually - we have processed up to 1/4 of the materials in any one year - so the remainder is hauled to Urban Organics via Republic Services for commercial composting. CM Zoo's mature compost is used throughout our gardens and is available to other Metroparks locations, such as our Nature Centers and Golf Courses, but has also benefited organizations like Cleveland Botanical Garden and local community gardens. Over the years when we have had excess compost not needed for Zoo landscaping or new exhibit expansions, we have offered compost for bulk sale to our members and the general public during the spring and fall months. Advanced purchases are made through the Cleveland Zoological Society and pick-up dates are scheduled in May and October.
When commercial service is locally available, the zoo also separates out food waste and Biodegradable Products Institute (BPI) certified compostable service-ware from the landfill-bound waste stream for composting. In 2010, we started a program with Rosby Resource Recycling and continued through 2014. During those years, we filled ~100, 95-gal totes in 2010, 110 in 2011, 153 in 2012, 244 in 2013, and 243 in 2014. We started food waste collection again recently at the end of 2017 with Rust Belt Riders hauling to Kurtz Bros (Attachment 10C).

Employees are encouraged to plan meetings and events for zero/reduced. In addition, recycling opportunities and education occur during events at CM Zoo as well as, at some non-CM sponsored events held at CM venues.

CM Zoo and CM Natural Resources Division have been working together to use non-native and invasive species of plants as browse for Zoo animals. Browse is live plant material that is collected and distributed daily to Animal Care as a supplement to an animal's regular diet. It promotes health and natural behaviors in many animal species. It is given to primates, hoof stock, marsupials, rodents, insects, reptiles, bears, bats, and birds. There is overlap between plant species that can be fed as browse and plant species that are being removed from the reservations because they are non-native or invasive. The Zoo Horticulture staff works to procure browse on a daily basis and the Natural Resources division notifies the Zoo team when they will be removing targeted species that will be suitable for browse. Arrangements will then be made for the Natural Resources Division or the Horticulture Department to harvest and deliver the browse to the Animal Care team. This collaboration has led to increased quantity and variety of browse, increased options for daily collection, and high staff satisfaction through contribution to animal enrichment. In addition, there are no additional costs or disruption to work flow.

CM Park Operations Division produces a lot of organic debris and waste throughout the year ranging from leaf removal, topsoil and clay, wood chips, woody debris and grass clippings. In an effort to cut down on cost to remove the organics, CM has implemented several practices to sustainably remove or reuse all organics listed above.

- *Leaf removal*: The majority of leaves are blown out of picnic areas and off paved trails and roadways. To cut down on the amount of blowing park staff use mulching blades on some mowers and work to mulch leaves where possible instead of blowing and/or hauling them away.
- *Topsoil and clay:* Any clean construction topsoil and clay is hauled to the closest Management Center and stored for a later use. Some areas mix and turn the soils with other organics to create a compost to use in planter beds and with tree plantings. This effort has cut down on the amount of topsoil brought in from the outside. In this effort we know what's in our topsoil.
- *Wood chips and woody debris:* Every CM reservation has a wood chip pile that offers the wood chips free to the public. To cut down on woody debris dumps CM has made an effort to offer up free wood chips, un-split firewood and mill scraps free to the public. CM Trails Division operates a wood mill. The wood mill was reintroduced to help cut down costs of paying to remove woody debris and also purchasing of lumber. The Trails Crew staff will mill all hardwoods and some softwoods to produce materials for park buildings, bridges, boardwalks and other lumber uses. Woody debris dumpster hauling can range from $250 to $350 based on location and what type of woody debris.

- *Grass Clippings:* The majority of grass clippings throughout the park are mulched directly into the area with the mowers. The few areas where grass clippings are bagged and removed from site (Ledge Pool and Washington Golf), the clippings are added to the composting sites at their operations facility.

11. Green building: Quantify any environmental benefits derived from green building infrastructure, designs and materials, excluding energy efficiency improvements. Describe how these activities have been used to reduce environmental impacts. This description should include any costs or savings resulting from these efforts.

With each new project CM looks for opportunities to improve its resource management and protect the environment for future generations. By using the national standard for Green building as the basis of design, we strive to leverage our resources and lessen our impact on existing infrastructure and the unbuilt land. Examples of recent green building within Cleveland Metroparks are the 2013 LEED Gold Certified Zoo African Elephant Crossing (Attachment 11A) and 2015 LEED Gold Certified Watershed Stewardship Center at West Creek Reservation and the green roof on the Edgewater Beach House.

CM incorporates green building elements into new and existing buildings/infrastructure receiving upgrades, often including but not limited to:

- Sensor light switches (Attachment 11B)
- Add water bottle filling stations to reduce single-use plastic bottles (Attachment 11C)
- High efficiency lighting, HVAC, and plumbing
- Insulated roof panels
- Provide building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views (Attachment 11D and 11E)
- Solar tubes (Attachment 11F)
- Replacing pit toilets with flush where possible
- Use of downed trees are milled in-house for trail bridges and other trail elements
- Utilizing recycled products and materials including saving and re-using old wood

Employees using the in-house ECO Grants program apply for recycling revenues for green projects. Justification includes quantifying savings to the Park District. (Attachments 11G and 11H)

12. Green infrastructure and storm water best management practices: Describe efforts to minimize storm water runoff beyond standard requirements for a storm water permit or required Storm water Pollution Prevention Plan (SWP3). Describe how your organization's use of green infrastructure and storm water best management practices reduces environmental impacts at the applicant's location.

CM is a stream and floodplain based park system, encompassing large watersheds such as the Rocky River, Cuyahoga River and Chagrin River as well as many of their tributaries and smaller streams that flow directly to Lake Erie. As such, by virtue of long-term protection, these natural forested areas provide extensive storm water infiltration and water quality benefits to the greater region of northeast Ohio. Specifically, the previously mentioned Trust for Public Land study quantifies the *annual* benefit storm water services of the Park District at $20.4 Million.

Despite these extensive ecosystem services provided by our natural areas, CMP also demonstrates to other Park Districts how to be proactive in storm water management by 1) building and managing a public facility – the Watershed Stewardship Center (WSC), 2) capturing storm water run-off created by upland land uses, and 3) installing practices that store as much volume as possible, not just the first flush mandated by Ohio EPA.

Storm water innovation at the WSC[1] includes the physical landscape and building, but also partnerships, education and research (Attachment 12A).

- *Storm water Control Measures* include multiple bio-retention cells and rain gardens, green roof, pervious pavers, pervious concrete, storm water wetland, bioswale step-pools, large cistern, rain barrel all working in conjunction with each other.
- *Indoor & outdoor interpretive exhibits* are dedicated to storm water and watershed management and include 3-D topographic map, stream habitat tanks, EmRiver model, self-guided tour and accompanying signage & digital displays.
- *Kent State University* professors and students monitor various storm water practices to understand practice efficacy as well as management impacts.
- *Watershed Volunteer Program*[2] utilizes 300+ volunteers to maintain storm water practices, monitor streams and water quality, remove invasive plants and install riparian and wetland vegetation.
- Outdoor Experiences staff deliver *storm water curriculum* to thousands of students, providing school districts with the means to receive a credit to their storm water fee to Northeast Ohio Regional Sewer District (NEORSD).

[1] Recognized by Ohio Parks & Recreation Association (OPRA) with an Award of Excellence in 2013 for Park Development (1st place) & Facility (2nd place). Also received an Honor Award through Ohio Chapter – American Society of Landscape Architects for General Design – Constructed project and Award from Ohio Storm water Association.

[2] Recognized by OPRA with an Award of Excellence (2nd place) & by OEPA in 2016 as an outstanding project through the Ohio Environmental Education Fund.

- *Collaborative steering committee* comprised of CM, NEORSD and local conservation organization – West Creek Conservancy – meets monthly to coordinate programs & activities.
- *Professional trainings* include OEPA's Qualified Data Collector program, certification for Inspection & Maintenance of Storm water Control Measures, Train the Trainer programs in managing storm water control measures, etc.

CM also manages numerous storm water practices throughout the Park District (Attachment 12B), but this is the most robust example of how seriously CM takes its role in the management of and education about storm water and education about storm water and watersheds.

13. Renewable energy: Describe renewable energy and alternative fuel projects at the applicant's location and quantify the environmental benefits. This description should include any costs or savings resulting from these efforts.

As we incorporate more renewable energy projects into our infrastructure, we will inevitably be reducing our harmful impacts, including air and water pollution. One of our internal goals is to encourage and recognize increasing levels of on-site renewable energy self-supply in order to reduce environmental and economic impacts associated with fossil fuel energy use. Phase I of a study utilizing all electric vehicles, Evelocity EV, recently concluded with very positive results. The use of Evelocity electric vehicles would allow us to take fossil burning vehicles out of service as EV are phased into our fleet (Attachment 13A).

The sun provides an enormous resource for generating clean and sustainable electricity. A 2016 project at CM Zoo incorporated Photovoltaic Panels on the roof of our Wildlife Carousel. This is a grid-tied system without batteries that semi-powers the carousel and is messaged in several locations to Zoo guests (Attachment 13B). CM Zoo also has several solar/electric carts, some to transport guests to Stillwater Place Event Center in the middle of the Zoo.

Solar is used in several locations throughout CM. Some outdoor lighting, river monitoring stations, and a weather station are all solar powered. The new (late 2018) security light manufactured by Illumient Smart Off-grid Lighting Solutions at Euclid Beach Pier has batteries powered by solar and wind. This is a pilot project, especially important because in a 100-year-old park district, such technology could benefit us greatly in remote areas without access to power (Attachment 13C).

We have also been reviewing the possibility of Purchase Power Agreements (PPA) to bring preferred canopy parking to CM Zoo with a solar energy component. Installing a solar canopy over an existing parking lot is simply a more efficient use of space than installing a standard ground-mounted system – when you build a solar canopy, you add more uses to the same square footage and don't have to set aside additional space. An additional benefit is the reduced heat-island effect of asphalt in the direct sunlight.

We continue to evaluate wind energy at several of our lakefront reservations. By locating the turbines in optimal locations and in full view of our guest we would bring the conversation of renewable energies forward.

14. Economic benefits: Describe short and long-term cost savings of your environmental stewardship efforts, include information on how your organization accounts for environmental impacts and costs of internal operations. Quantify the investment required, cost avoided, efficiency achieved, and realized or estimated payback or return on investment.

For 100 years, CM has remained a mission-driven organization. It is CM's Mission Statement and Vision Statement that guide the decision-making process in all endeavors.

As a result, every new opportunity to invest in capital, construction, operational or human endeavors must first and foremost promote the mission to ***"conserve significant natural resources and enhance people's lives"*** - the lives of its taxpayer and other customer constituents. Further, CM always seeks to fulfill its vision of ***"sustainable green infrastructure that provides essential environmental, economic, and community benefits for people in its core service area and the surrounding region."*** Environmental stewardship efforts are not chosen based upon measurable cost avoidance, payback amount, period, or return on investment. Rather, opportunities are prioritized based on their environmental conservation and sustainability potential. However, the cost of such efforts is carefully contemplated along with the intended environmental benefits during the evaluation and planning process to ensure a proper fit with the CM's overall long-term strategic and fiscal plans.

Attached is a list of CM environmental stewardship projects over the past 3 years (Attachment 14A). For each project on the list, the project cost listed includes both internal and external funding sources such as public and private grants. For projects not yet complete, the project cost listed is the expected, appropriated cost.

Some of the stewardship efforts undertaken by the CM represent essential values-driven investments with no expected monetary return to the Metroparks. These projects provide very significant environmental benefits as well as substantial economic benefits to the surrounding residents and regional water authority. Below are two examples:

> *Bonnie Park Dam Removal and Wetland Restoration Project:* This $1.9 million project which commenced in 2018 involves dam modifications, floodplain restoration, asphalt removal and restorative plantings designed to improve the habitat of fish and other wildlife, to increase volume and efficiency of natural storm water retention and filtration, and to provide enhanced visitor engagement with the natural amenities.
>
> *Acacia Euclid Creek Restoration Project*: This $1.8 million project which began in 2015 involves the restoration of a former golf course to its natural state through in-stream

habitat restoration, bank stabilization and channel design, restoration of adjacent floodplain areas, and creation of interconnected wetland swales designed to increase natural storm water filtration, decrease sedimentation and pollutant loads, and provide additional native habitat.

Many of the vast number of CM's environmental stewardship projects are expressly or intuitively expected to provide a payback or return on investment through efficiency and cost avoidance; however, measurement or calculation of the actual resulting payback is impossible or impractical for a variety of reasons:

Complexity of operations: operating units such as the Zoo, Edgewater Beach and numerous park reservations have a multitude of drivers of operating cost. As a result, it is often not possible to calculate the resulting impact of a discrete change with all other things being equal. For example, more than 10 years ago, the CM instituted a *Non-Idling Policy* for all management, maintenance and ranger vehicles. While this policy clearly has resulted in a reduction in harmful exhaust emissions and fuel consumption, there are other factors which could increase fuel consumption, offsetting and masking the true savings associated with this initiative.

Segregation limitations: In order to accurately measure utility cost avoidance, for example, sophisticated, highly targeted metering is required. Implementing this metering is very expensive. Since cost avoidance is a side benefit of environmentally responsible projects, investment in such measurement infrastructure is unnecessary. For example, new *High Efficiency Circulation and Filtration Pumps* were installed at the Zoo for the seal/sea lion exhibit. Because of combined utility metering between exhibits throughout the Zoo, without installing discrete meters for this exhibit, the measurement of water and power consumption decreases directly resulting from this initiative was not possible.

"Mission Accomplished Impact": If CM is successfully fulfilling its mission by providing high quality recreational, educational and zoological opportunities to its constituents, reduced consumption of electricity, water, labor cost, etc. resulting from sustainability initiatives may be offset by increases in consumption resulting from increased activity. For example, over the past 5 years, *LED and Solar Lighting and Motion Sensing Light Switches* have been installed at locations throughout CM. However, increased customer activity and the associated guest service, management, maintenance and security activity are factors which offset and mask true savings associated with these initiatives.

Other contributing factors: Factors such as weather may impact consumption or other operating cost which, like increased constituent/customer activity, may offset and mask the true payback from a stewardship initiative. In 2018, *Turf Guard wireless turf/soil moisture monitoring* was installed at some of our golf courses. This system enables mobile-app-based monitoring of moisture levels on greens and the capability

to remotely shut off sprinkler systems otherwise following daily timer cycles. The problem with isolating the water consumption savings directly resulting from this functionality is the effect of heat, rainfall and humidity patterns on consumption from year to year.

Other stewardship activities implemented by the CM may result in cost avoidance, efficiency and/or a payback or return on investment, even though such organizational benefit is not the primary justification for the investment. Payback or return on investment sometimes takes the form of cash payment to CM and is therefore easily measured and tracked.

One example of this is the organization's robust *Recycling Program*, which results in ~$33,000 of revenue each year. A large portion of this revenue is allocated to annual ECO Grants – a program which encourages an organizational culture of innovation by reinvesting recovered recycling dollars in environmental stewardship and sustainability projects conceived by employees. For more information on this program, see the response to items 2 and 9 above.

Perhaps the best example of measurable, trackable payback in the form of cash payment is the *Stormwater Management Reimbursement Fund* arrangement between the CM and the Northeast Ohio Regional Sewer District (NEORSD). Under this agreement, for a period of five years, the CM is eligible to receive reimbursement for the cost of NEORSD-approved storm water management projects.

While storm water management impacts of these projects have no direct impact on future water consumption, and therefore no reduction to the monthly water bill paid by the CM, the environmental and economic benefit to the surrounding community and regional water authority is significant. The reimbursements CM receives under this agreement represent a true payback as the funds are a return of annual water/sewer charges paid by the organization. Since inception of the program in 2017, over $800,000 of storm water management projects have been approved for reimbursement.

In summary, because of the mission and vision of CM, a vast number of environmental stewardship projects are implemented each fiscal year. While these projects produce varying amounts of payback or return on investment to CM, for the reasons discussed herein the calculation of actual payback is not presently performed for most projects. The Trust for Public Land study of the economic impact of CM is the most relevant document detailing how the organization is providing a return on the investment of its stakeholders – the taxpayers, customers and generous benefactors who support CM' mission (Attachment 14B).

15. Promotion and dissemination: Describe how information about your environmental stewardship activities is made available and shared with others internally and externally. Explain how this information is used to promote similar practices to other organizations.

Internally: A full-time Sustainability Manager oversees all internal efforts. She provides training and education on sustainability for employees, as well as outside organizations. She chairs the interdepartmental ECO Team. This group is tasked with promoting sustainability by creating opportunities that foster education and innovation. The ECO Team is responsible for awarding grants to individual projects that support the organization's commitment to resource conservation. Funding is provided through revenue from recycled materials and ECO Grant projects are evaluated based on the positive impact they have on sustainability (Attachment 15A).

Additionally:

- Staff begin to learn about sustainability during onboarding.
- Employee reviews include sustainable practices.
- Trash receptacles are paired with recycling receptacles in all employee areas.

Externally: With Conservation and Education being two main pillars of CM' mission, we excel at promotion and dissemination. A glance at the December program listing demonstrates the breadth of CM's natural history offerings (Attachment 15B). The Outdoor Experiences Division served 632,238 guests and offered 7,301 nature-based programs in 2017 through:

- Five nature centers
- Nature-based pre-school
- Two mobile outreach vehicles targeting under-served communities
- Classroom visits
- Urban youth outdoor recreation initiative: Youth Outdoors

CM Zoo hosted 1.4+ million visits in 2017. The Zoo has been involved in wildlife conservation for more than 20 years and has dedicated more than $1.5 million to wildlife conservation efforts in more than 25 countries around the world in the last three years, including: Colombia, Peru, Bolivia, Rwanda, Uganda, Tanzania, Kenya, Indonesia, Malaysia, and Vietnam. Regional conservation efforts include head-starting programs for Eastern plains garter snakes and spotted turtles. The Zoo also participates in a collaborative international in-situ/ex-situ conservation program for the Puerto Rican crested toads. The "Quarters for Conservation" program allows guests to choose from seven different animal conservation programs for donations. The Zoo connects visitors to wildlife and a global conservation mission through animal viewing opportunities, programs, signage, and play areas (Attachment 15C).

Guests looking to host a special event on CM property must submit a permit application which includes green event guidelines to encourage all events to be good stewards of the environment. This includes guidelines not just on recycling and waste, but also food and beverage, printed materials and transportation. All CM affiliated non-profits receive these guidelines in their contract (Attachments 15D and E).

CM has a land acquisition department which strategically seeks to buy land that:

- Is contiguous to existing properties
- Protects wetlands and waterways
- Contributes to trail connections

The Real Estate Report is produced and presented annually at a public board meeting. It's then available on the web site as part of the board meeting proceedings.

Additionally:

- CM's public trash receptacles are almost always paired with a blue recycling receptacle.
- CM hosts River Valley Paper recycling receptacles around the park district.
- Interpretive signs in every park communicate conservation messages (Attachment 15F).
- Table top restaurant cards explain banning plastic straws (Attachment 15G).

Community and Regional Sustainability Criteria

1. Product or Service Design: Describe how environmental considerations are used to modify your products, processes or services to improve the health, safety and vitality of consumers and the community.

CM Planning and Design staff participates in a wide range of local community planning efforts. Participation ranges from engagement with watershed planning groups, to local community comprehensive planning, bikeway planning, and site specific recreational facility planning. Staff also proactively coordinates with neighboring municipalities when updating reservation master plans or on other major capital projects. CM, due to its geographic area and importance to the community, is often asked to serve on steering, stakeholder, and other committees.

An example of a local strategic planning initiative:

- Re-Imagining Cleveland – CM planners serve on the stakeholder committee of this ongoing group which seeks to improve conditions at the economic, physical, and environmental level in Cleveland neighborhoods and is organized and led by Cleveland Neighborhood Progress, the umbrella nonprofit that assists Cleveland Community Development Corporations. Responsibilities include: attending meetings, participating in strategic planning, and circulating information back to other CM divisions (Attachments 2.1A and 2.1B).

Strategic Planning - Transportation:

CM has been actively engaged either as sponsor, partner, or participant in many Transportation for Livable Communities Initiative (TLCI) planning studies, a program developed by the area's metropolitan planning organization, the Northeast Ohio Area-wide Coordinating Agency (NOACA). These studies outline on a corridor, city, or larger basis improvements to the active transportation network, including bicycle trails, lanes, and routes.

One recent TLCI study is:

- *Midway Cycle Track:* CM planners were assigned to the stakeholder committee for this study, which looked at repurposing excess pavement from a long-removed trolley network in the city of Cleveland for a median cycle track system. Responsibilities included: attending meetings, reviewing drafts before public meetings, providing details of CM planning for the area (Attachments 2.1C and 2.1D).

Two examples at the state level:

- *Ohio Department of Transportation (ODOT):* CM coordinates with the district office and statewide Active Transportation office within the Department of Planning on a regular basis.
    - *I-90 Safety Study:* CM was a major stakeholder in the development of this

ODOT-led study that looked at short-term and relatively low cost safety improvements around three highway interchanges that are adjacent to the Lakefront Reservation (Attachment 2.1E).

- *US and State Bike Route Program:* As part of a statewide initiative through ODOT, a system of routing and signage for US and State bike routes is being developed. CM coordinated area stakeholder comments to ground truth and refine GIS-derived routes by providing specific routing comments and hosting a workshop on January 27, 2016 (Attachments 2.1F, 2.1G, and 2.1H).

Sustainability and *Guest Focus* are two of CM 6 Core Values, and thus guide our decision making and strategizing in regard to engaging the community. We are very aware that we exist in service to the greater Cleveland area not only to provide them with opportunities to interact with nature, but also to steward the area's natural resources.

As environmental stewards in this community, we approach our services frequently through the lens of community resurgence. Per our agency's Sustainability policy, we pledge to work with public and private entities to improve equitable access to parks and trails; prioritize development in underserved parts of the community; serve as a model for green infrastructure in new and existing construction; and continue to document the health impact in the communities we serve.

2. Community Education: Describe how the organization's environmental stewardship efforts are used to educate and build networks with the local community and region to improve the overall quality of life. Describe how your organization's environmental impacts are shared in a transparent manner with the community and region.

Outdoor Experiences Division: Creating environmental stewards is core to Cleveland Metroparks mission. The Outdoor Experiences Division (OE) vision is "to be recognized as an exceptional provider of meaningful experiences with our natural heritage" (Attachment 2.2A).

In 2017, 83 OE staff served 632,238 guests and offered 7,301 nature-based programs through:

- Five nature centers, free and open 361 days/year
- Nature-based summer camps
- Two mobile outreach vehicles targeting under-served communities
- Field trips classroom visits
- Urban youth outdoor recreation initiative: Youth Outdoors
- Scholarships and bus vouchers
- Interpretive signs and exhibits park-wide (Attachment 2.2B)

One of the most recent and unique ways in which we share environmental stewardship in our programming is through Nature Preschool (Attachment 2.2C). This 9-month program for 3-5-year-olds was designed to meet all the learning requirements for that age group and instill a curiosity and healthy respect for nature. The students go outside every day, unless there are

unsafe weather conditions, and learn about the natural world. The inaugural year saw maximum enrollment and an established waiting list, which is a testament for not only community interest but also their trust in us as an agency to take on such an involved education role.

Zoo: CM Zoo connects visitors and students to wildlife and a global conservation mission, starting with their tagline, "Securing a Future for Wildlife", www.futureforwildlife.org and "Make a Difference" where individuals can take action towards sustainability and conservation.

- Since 2011, in partnership with Project Dragonfly and Miami University, CM Zoo has offered a graduate level course on Environmental Stewardship in Northeast Ohio. As part of the course, students learn about sustainable practices from leaders in the field, not only at the Zoo but also at other organizations throughout the region. As part of their coursework, they investigate conservation opportunities and solutions in their local communities and then develop a conservation project that is used in their classroom or community. To date, 150 graduate students have completed the course.
- Zoo Crew (teen programming) has been working on sustainability programming since 2009. Some examples of what they've done is:
    - Beach clean-ups at Edgewater/Huntington/Euclid Beach - 240 teens have participated since 2009
    - Assisting Master Gardeners in the gardens at Ben Franklin Elementary School - 120 teens have participated since 2009
    - Assisting with park beautification projects at Forest Hills Park - 100 teens have participated since 2010
    - Cans for Conservation drives - 90 teens have participated since 2010, collecting over 2,000 lbs. of aluminum
    - Trash Toss Game and Great Lake Erie Boat Float (Attachment 2.2D).
- Versions of What to do With All the Poo/The Scoop on Poop programming have been done with different audiences
    - Offered as distance learning programming between 2004-2015, reaching 1500 participants nationwide
    - Most recently offered as a homeschool program in 2018 to a group of 43 participants

Volunteer Citizen Science: CM volunteers engage in citizen science, helping with invasive plant management, wildlife studies, storm water management and other conservation efforts. Park-wide, 4,587 volunteers gave 124,632 hours of service to CM (Attachment 2.2E).

Building Networks: CM is deeply involved in environmental planning and conservation efforts with local, state and federal agencies through the donation of in-kind expertise and/or participation by Cleveland Metroparks professional staff. Recent examples include:

- Lake Erie Nature & Science Center
- National Park Service

- Ohio State University
- Cuyahoga River Water Trail
- Northeast Ohio Regional Sewer District
- Clean Ohio Natural Resources Advisory Council
- Northeast Ohio Area-wide Coordinating Agency, Bicycle and Pedestrian Advisory Committee
- Ohio Department of Transportation State Bike Route Workshop
- Lake Erie Allegheny Partnership
- Cuyahoga Greenways Partners
- Mayor's Office of Sustainability, City of Cleveland
- Bike Cleveland
- River Network
- National Recreation & Parks Association
- Ohio Parks & Recreation Association
- Cuyahoga County Soil and Water
- Dian Fossey Gorilla Fund International, Rwanda
- Ruaha Carnivore Project, Tanzania
- Drone Open Mapping, World Bank

CM staff provide expertise to myriad environmental efforts and organizations locally and internationally. Staff are encouraged to sit on mission-compatible boards and advisory committees.

- Portage Park District
- Greater Cleveland Beekeepers Association
- Rocky River Watershed Council
- Chagrin River Watershed Partners
- Cleveland Water Alliance
- Tinkers Creek Watershed Partners
- Medina County Soil & Water
- Ohio Biological Survey
- Organics Recycling Association of Ohio
- Washington Park Environmental Studies Academy
- Cleveland Lakefront Collaborative
- Cleveland State University – Interdisciplinary Center for the Urban Environment
- Rhodes School for Environmental Studies
- Cuyahoga River Area of Concern Advisory Committee
- City of Brecksville Master Plan Steering Committee

Transparency: CM follows Ohio Revised Code Section (RC) 121.22 ("Sunshine Laws") requiring public accountability.

The CM website includes a plethora of public information on CM's operations including:

- Board agendas and proceedings
- Planning projects
- Public meeting notice
- Policies and procedures
- Contact numbers/emails for top leadership
- Annual budget
- Accessibility information

Additionally, the Marketing Department:

- Issues press releases
- Maintains 277,000+ followers on social media; Facebook, Twitter and Instagram
- Distributes 40,247 Emerald Necklace program schedules monthly
- Has 78,968 e-newsletter subscribers

3. Improving the Supply and Delivery Chain: Describe the organization's work with employees, suppliers and other organizations to improve sustainability at various points in their supply and product/service delivery chain.

This question is addressed throughout the application in several ways including aspects of Management Commitment, Employee Involvement, Innovation, Sustainable Materials and Purchasing, Community Education, and Promotion and Dissemination. CM strives to deliver excellent service while continuously updating infrastructure, practices, and processes to meet best sustainability practices.

4. Community and Regional Environmental Priorities: Describe how you address community and regional priorities through your environmental stewardship program.

In 2012, CM completed the Emerald Necklace Centennial Plan (updated 2015) (Attachment 2.4A) to guide priorities for the Park District. The plan used community surveys, public meetings, and research to develop strategic directions, with a focus on providing parks and trails in Cleveland and inner ring suburbs. The plan broadens CM's role in the greater Cleveland area as a stabilizing and beneficial influence extending well beyond park boundaries, helping improve quality of life in established communities as a way of stemming sprawling suburban development.

The transformation of the lakefront parks in Cleveland are a great illustration of the power of parks to influence the community and region and demonstrates the economic, environmental, and equity aspects of sustainability. CM took over the operation of over 500 acres of parkland along the Lake Erie shore. The lakefront was visited by over 3 million people last year, turning around a neglected asset with better maintenance, ranger patrols, special events, and improved facilities. More importantly, the lakefront is now a source of civic pride.

In addition to changes at the lakefront, CM measured its economic impact on some of the region's most pressing environmental issues; storm water, air quality and human health. In 2018, the Trust for Public Land conducted a CM Economic Impact Study funded by the Gund Foundation (Attachment 2.4B). Highlights include:

- CM reservations provide storm water infiltration valued at $20.4 million annually.
- Vegetation removes air pollutants, reducing pollution control costs in Cuyahoga County and Hinckley Township by $8.09 million per year.
- Approximately 114,000 adults receive measurable health benefits through their physical activity in the Cleveland Metroparks system, yielding an annual medical cost savings of $160 million.

5. Habitat and Biodiversity Improvements: Describe how your environmental stewardship activities protect and improve the natural habitat and biodiversity of the community and region.

Biodiversity management focuses on regional, ecosystem-level processes. CM's strategic acquisition and stewardship of parks is detailed in our NR Management Plan (see Section 1, Q4): strategic, lasting stewardship, scale and connectivity of natural landscapes, and adaptive management. CM leverages its capacity to deliver extensive ecosystem services to the region, which are described in the previously mentioned Trust for Public Land 2018 study. For instance, trees and shrubs throughout CM provide health benefits and reduce pollution control costs at an annual estimated value of $8.09 million.

CM extends these ecosystem services by working and collaborating beyond its political boundaries, contributing to regional programs. For instance, CM led a regional ecosystem monitoring and assessment program (2011-2015, funded by US EPA), which developed protocols and mapping resources for regional conservation planning (Attachment 2.5A). New metrics for assessing human disturbance, based on OEPA Vegetation Indices of Biotic Integrity protocols, are planned for 2019 or 2020.

This project developed strong relationships among conservation partners, enabling a rapid response to the discovery of an undescribed pest or pathogen, beech leaf disease, garnering national attention and funding (Attachment 2.5B).

LEAP: Lake Erie Allegheny Partnership for Biodiversity member (https://www.leapbio.org). CM participates in many of the network's projects; a leader or major contributor to the following:

- Regional Biodiversity Vision. CM staff served on the project's steering committee, and facilitated the relationship with the USFS Northern Research Station to develop new climate models for the LEAP region (https://www.leapbio.org/biodiversity-plan)
- CM staff produced "Landscaping for Biodiversity with Ohio Native Plants: A Species Guide for Plantings," (attached), produced an online map of native plant nurseries, and coordinated with native plant growers to promote LEAP's Native Plants of the Year through 2022. (https://www.leapbio.org/resources/native-plants)

Crooked River Cooperative Weed Management Area (CR CWMA):

- Established in 2011 with US EPA GLRI funding, from 2011-2016 to fund regional invasive plant management, including
  - 14 signatories to memorandum of understanding
  - 11 seasonal crews across 4 counties, employing 37 staff
  - Purchase of a shared cache of tools and equipment
  - Treatment of 40 species over 7,500 acres in the Cuyahoga River Area of Concern
  - Production of outreach material across print, web (http://www.crcwma.org), and workshop media
- Continued partnership with GLRI funding in 2015-2018, administered by Cuyahoga River Restoration to survey 200 linear miles of riparian habitat for invasive plants

Hydrilla eradication and outreach (Attachment 2.5C):

- Partial funding from ODNR Division of Wildlife and US EPA for treatment, detection surveys, and community outreach in Cuyahoga AOC and beyond
- Working with 49 partner organizations surveyed of 176 water bodies on public (7,885 ac) and private land (142 ac), which led to successful treatment of 2 water bodies
- Outreach at 85 events, reaching 2,724 individuals

6. Community Support: Describe philanthropic efforts and other ways your organization supports the community, the region and charitable groups that promote environmental stewardship.

CM has an annual Charity Choice campaign, offering employees the opportunity to donate through payroll deduction or by direct payment to a wide variety of local organizations and charities; examples of conservation organizations include Earth Share, Chagrin River Watershed Partners, West Creek Conservancy and CM's Centennial Forest Fund. In 2018, CM employees gave $60,497 to Charity Choice and $4,990 back to CM, totaling $65,487 of charitable giving.

CM pays organizational membership and a percentage of individual memberships to several local and regional nonprofit organizations. In 2018, an example of these memberships includes:

Organization:

- Chagrin River Watershed Partners
- Cleveland Water Alliance
- Lake Erie Allegheny Partnership for Biodiversity (LEAP)
- Ohio Biological Survey
- Organics Recycling Association of Ohio

Individual:

- Ecological Society of America
- Society of Ecological Restoration
- The Wildlife Society
- Citizen Science Association
- Society of American Foresters
- Forum for Volunteer Administrators

CM contributes sponsorship support to local and regional events with a strong environmental stewardship messaging. For 2018, these events included:

- City of Cleveland Sustainability Summit
- Cleveland Museum of Natural History Conservation Symposium
- Cuyahoga River Area of Concern Symposium
- West Creek Conservancy Gala

CM is deeply involved in environmental planning and conservation efforts with local, state and federal agencies through the donation of in-kind expertise and/or participation by CM professional staff. Recent examples include:

- Lake Erie Nature & Science Center
- National Park Service
- Ohio State University
- Cuyahoga River Water Trail
- Northeast Ohio Regional Sewer District
- Clean Ohio Natural Resources Advisory Council
- Northeast Ohio Area-wide Coordinating Agency, Bicycle and Pedestrian Advisory Committee
- Ohio Department of Transportation State Bike Route Workshop
- Lake Erie Allegheny Partnership
- Cuyahoga Greenways Partners
- Mayor's Office of Sustainability, City of Cleveland
- Bike Cleveland

- River Network
- National Recreation & Parks Association
- Ohio Parks & Recreation Association
- Doan Brook Watershed Partnership
- Cuyahoga County Soil & Water Conservation District

CM staff provide expertise to myriad environmental efforts and organizations locally and internationally. Staff are encouraged to sit on mission-compatible boards and advisory committees.

- Portage Park District
- Greater Cleveland Beekeepers Association
- Rocky River Watershed Council
- Chagrin River Watershed Partners
- Cleveland Water Alliance
- Tinkers Creek Watershed Partners
- Medina County Soil & Water
- Ohio Biological Survey
- Organics Recycling Association of Ohio
- Washington Park Environmental Studies Academy
- Cleveland Lakefront Collaborative
- Cleveland State University – Interdisciplinary Center for the Urban Environment
- Rhodes School for Environmental Studies
- Cuyahoga River Area of Concern Advisory Committee
- City of Brecksville Master Plan Steering Committee
- Zero Waste NEO