AGENDA
Huron-Clinton Metropolitan Authority
Board of Commissioners Work Session
December 9, 2021 – 11:00 a.m.

Administrative Office and via Zoom (for the public)

https://us02web.zoom.us/j/82741226321?pwd=LzFHelFiQjc2MmpnbjZXQkEweGx0UT09

Meeting ID: 827 4122 6321 / **Passcode**: 284269
Dial by your location: +1 929 205 6099 (New York) / +1 301 715 8592 (Washington, D.C)

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1. Call to Order

2. 2022 Budget Overview

3. Interpretive Department Expansion Presentation
- Jennifer Jaworski, Chief of Interpretive Services
- Artina Carter, Chief of Diversity, Equity and Inclusion

4. Public Participation

5. Motion to Adjourn

PUBLIC HEARING – 2021 Budget

Huron-Clinton Metropolitan Authority
Board of Commissioners Meeting
December 9, 2021 – 1:00 p.m.

Administrative Office and via Zoom (for the public)

https://us02web.zoom.us/j/9800687134?pwd=ak1WMTlPNUlUcEUycHpTWW95MTErUT09

Meeting ID: 980 068 7134 / **Passcode**: HCMABOC
Dial by your location: +1 929 205 6099 (New York) / +1 301 715 8592 (Washington, D.C)

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1. Motion to Open Public Hearing

2. Chairman's Statement

3. 2022 Budget Review – Amy McMillan, Director

4. Public Participation

5. Motion to Close the Public Hearing

Note: *Action on the 2022 Budget will be taken during the regular meeting of the Board of Commissioners following the public hearing.*

Agenda
Huron-Clinton Metropolitan Authority
Board of Commissioners
December 9, 2021
Immediately Following Public Budget Hearing

Administrative Office and via Zoom (for the public)

https://us02web.zoom.us/j/9800687134?pwd=ak1WMTlPNUlUcEUycHpTWW95MTErUT09

Meeting ID: 980 068 7134 / **Passcode**: HCMABOC
Dial by your location: +1 929 205 6099 (New York) / +1 301 715 8592 (Washington, D.C)

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1. Call to Order

2. Chairperson's Statement

3. Employee Recognition

4. Public Participation

5. Approval – November 11, 2021 regular meeting minutes

6. Approval – December 9, 2021 Full Agenda

Consent Agenda

7. Approval – December 9, 2021 Consent Agenda
- **a.** Approval – November 2021 Financial Statements
- **b.** Approval – November 2021 Appropriation Adjustments pg. 1
- **c.** Report – Monthly 2021 Capital Project Fund Update pg. 3
- **d.** Report – Monthly 2021 Major Maintenance Update pg. 9
- **e.** Approval – 2022 Worker's Compensation Insurance Renewal pg. 13
- **f.** Approval – 2022 Fiduciary Liability Insurance Renewal pg. 14
- **g.** Approval – 2022 Property and Liability Insurance Renewal pg. 15
- **h.** Approval – 2020 Tax Levy Adjustments pg. 16
- **i.** Approval – Motor City Canoe Rental Services Agreement pg. 17
- **j.** Report – Planning and Development Update pg. 30
- **k.** Report – Marketing Update pg. 51
- **l.** Report – DEI Update pg. 59
- **m.** Report – Interpretive Services Update pg. 62
- **n.** Report – Natural Resources Update pg. 69
- **o.** Approval – T-Mobile Contract Renewal for Library Hot Spots pg. 76
- **p.** Approval – Library Partners Agreement Renewal pg. 78
- **q.** Approval – DTE Electrical Service Installation Agreement pg. 81
- **r.** Purchases
  1. Report – Purchases over $10,000 pg. 82
  2. Total Spend and Vendor Location pg. 83

Regular Agenda

8. **Approval – 2022 Budget and Resolution** pg. 85

9. **Reports**

A. Administrative Department
1. Report – Deer Herd and Ecosystem Management Plan pg. 92

B. Financial Department
1. Approval – Designation of Fund Balance pg. 161
2. Report – Monthly Financial Review pg. 162

9. Reports

C. Planning and Development Department

1. Approval/Resolution – Grant Agreement Submission for Accessible Launch, Lake St. Clair **pg. 174**

10. Leadership Update

11. Other Business

12. Public Participation

13. Commissioner Comments

14. Motion to Adjourn

A **Work Session** will take place prior to the Board Meeting
Thursday, Dec. 9, 2021 – ***11:00 a.m.***
Administration Office – Board Room

The next regular Metroparks Board meeting will take place
Thursday, January 13, 2021 **–** ***1:00 p.m.***
Administration Office – Board Room

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Approval – October Appropriation Adjustments
Date: December 1, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the November 2021 Appropriation Adjustments as recommended by Chief of Finance Shedreka Miller and staff.

Background: The Metroparks ERP system provides a work-flow process to facilitate departmental budget management. Requested transfers are initiated by department staff and routed to the appropriate department head/district superintendent for review and approval. Finance provides a final review of the approved requests to verify that they do not negatively impact Fund Balance.

For the month of November, $132,972.35 was transferred between general fund operation accounts and $72,587.64 was transferred within capital project accounts. Tax adjustments resulted in an additional increase in fund balance of $1,397.

The result of these changes can be seen by Accounting Function and Location in the attached chart.

Attachment: Appropriation Adjustments

Huron-Clinton Metropolitan Authority
November 2021 Appropriation Transfer Summary

Expense Accounts

Location	Expense Increase/ Revenue Decrease	Expense Decrease/ Revenue Increase	Difference
Capital Equipment			
Lower Huron	$ -	$ 11,160	$ (11,160)
Lake Erie	11,160		11,160
Total	**$ 11,160**	**$ 11,160**	**$ -**
Major Maintenance			
Administrative	$ 3,033	$ 14,505	$ (11,473)
Lake St. Clair	2,396	-	2,396
Kensington	2,876	-	2,876
Lower Huron/Willow/Oakwoods	548	-	548
Lake Erie	5,468	-	5,468
Indian Springs	148	-	148
Huron Meadows	37	-	37
Total	**$ 14,505**	**$ 14,505**	**$ (0)**
Operations			
Administrative	$ 5,500	$ 5,500	$ -
Lake St. Clair	21,250	29,250	(8,000)
Kensington	-	1,845	(1,845)
Lower Huron/Willow/Oakwoods	8,000	-	8,000
Hudson Mills	1,845	-	1,845
Lake Erie	70,712	70,712	-
Total	**$ 107,307**	**$ 107,307**	**$ -**
Total General Fund Transfers	**$ 121,813**	**$ 121,812**	**$ (0)**
Capital Project Fund			
Administrative	$ -	$ 72,588	$ (72,588)
Lake St. Clair	37,430	-	37,430
Kensington	2,010	-	2,010
Lower Huron/Willow/Oakwoods	15,167	-	15,167
Hudson Mills	5,606	-	5,606
Stony Creek	11,426	-	11,426
Lake Erie	948	-	948
Total	**$ 72,588**	**$ 72,588**	**$ (0)**

Tax Adjustment	Revenue Decrease	Revenue Increase	Net
Current	$ 9,808	$ -	$ 9,808
Prior	-	11,205	(11,205)
Total	**$ 9,808**	**$ 11,205**	**$ (1,397)**

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Report – Monthly Capital Project Fund
Date**:** December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners' receive and file the Capital Project Fund report as submitted by Shedreka Miller and staff.

Background: In 2018, the Board of Commissioners approved the creation of a capital project fund. To support the information provided on specific capital improvement projects Finance initially provided the following data:

The following columns of data are provided by project:

- Life-To-Date Total Project Budget
- Year-To-Date Total Project Expenditures
- Life-To-Date Total Project Expenditures
- Current Project Encumbrances (Funds committed through the purchase order process)
- Balance (Life-To-Date Budget less Life-To-Date Expenditures and Current Encumbrances)

This information has now been augmented to include the original project budget. In addition, a new page has been added which provides a more detailed description of the project as well as the current status of the project and the current estimate of what year the project will be completed. It is anticipated that this additional information will allow the Board as well as the general public to stay up-to-date on the capital project work underway throughout the Metroparks.

Expenditures during November 2021 were primarily related to staff time. The following projects had expenses during the month:

- Lake St. Clair – Black Creek Marsh Filtration Enhancement
- Lower Huron – Woods Creek Playground Development
- Lake Erie – Shoreline and Fish Habitat Restoration

Attachment: November 2021 Capital Project Fund Update

November Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
Lake St Clair	Pump Station No. 1 Replacement-SAW Grant	Sewer pump station replacement near Nature Center	$ 445,172	$ -	Completed	2021
Lake St Clair	Black Creek Marsh Wetland Filtration Enhancement	A natural shoreline project which will remove rip-rap, regrade slope and install native vegetation which will improved filtration of water entering the marsh and improve habitat as well as reducing erosion.	288,943	160,000	In Design	2022
Lake St Clair	Accessible Kayak Launch & Power Installation		50,000		Awaiting Grant Award	2022
Lake St Clair	Backup Internet Fiber Installation	Comcast installation of underground fiber network	40,000		Complete	2021
Lake St Clair	Electrical Grid Replacement - Design in 2020	Assessments, cost estimates, and project development for future projects to address electrical power infrastructure upgrades and repairs.	807,064		Currently finalizing alignment for phase I	2026
Lake St Clair	Beach Restoration	Multi-year EGLE grant project through 2023. Plantings and bird deterrents installation to improve water quality funding includes follow up water quality monitoring.	473,418	292,167	Completed	2023
Lake St Clair	Michigan Coastal Management Program-Acccessible Launch	Accessible Kayak Launch - grant application has been made to Michigan Coastal Management Program.	392,850	196,425	Awaiting grant award	2023
Kensington	Maple Beach Site Improvements	Construction of site and restroom facilities	1,096,852		Completed	2021
Kensington	Maple Beach - Universal Accessible Playground	Construction of a new playground at Maple Beach	553,872		Completed	2021
Kensington	West Boat Launch - Accessible Kayak Launch	Michigan Natural Resources Trust Fund grant funded project to develop an accessible kayak launch and associated site amenities at West Boat Launch.	323,355	154,000	In Design	2022
Kensington	Farm Center Sidewalk Replacement	Replacement of the looped walkway around the animal pens for the public	184,481		In construction	2021
Dexter-Delhi	Relocating Concessionaire Canoe Livery Building	Construction of a new building and use area for concessionaire operation within East Delhi. The expanded Border to Border trail development utilizes the former site. The project moves operations to Delhi to address current tolling and overflow parking issues.	98,306	5,000	Project has been cancelled	2021
Lower Huron	North Fishing Site Redevelopment	Land and Water Conservation Fund grant funded project to develop an accessible kayak launch and associated site amenities at the North Fishing Site.	297,399	144,400	Completed	2021
Lower Huron	Backup Internet Fiber Installation	Comcast installation of underground fiber network	185,362		In Construction	2021
Lower Huron	Woods Creek Playground Development	Space-themed regional playground near the Woods Creek picnic area on the former pool site.	1,332,992		In Construciton	2021
Lower Huron	Toll Booth Replacement and Paving	Toll Booth replacement on existing pedestal at Oakwoods and Lower Huron - Beemis Road entrance.	30,000		Awaiting Quote from Sole Source Provider	2021
Lower Huron	Turtle Cove Crosswalk Path	Construction of a path and crosswalk from the Foxwoods parking lot to Turtle Cove	97,773		In Design	2021
Lower Huron	Iron Bell Trail Project	Michigan Natural Resources Trust Fund grant funded project to extend the Iron Bell trail from its current terminus to the north park entrance (Huron River Drive)	842,633	488,742	Awaiting Grant Agreement	2022
Lower Huron	Walnut Grove Campground Improvements	Land and Water Conservation Fund grant funded project to improve accessibility and site amenities at the Walnut Grove Campground.	784,600	450,000	Awaiting Grant Agreement	2023

November Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
Lower Huron	Off Leash Dog Area Development	Land and Water Conservation Fund grant funded project to develop a new fenced in area for off leash dog activities	330,800	165,400	Awaiting Grant Agreement	2023
Hudson Mills	Backup Internet Fiber Installation	Comcast to install new fiber network lines. No construction costs at this location in contract with Comcast - funds may be needed at other locations	7,994		Completed	
Hudson Mills	Rapids View area Development	Michigan Natural Resources Trust Fund grant funded project to develop an accessible kayak launch and associated site amenities at Rapids View	487,507	226,900	In Design	2022
Hudson Mills	Toll Booth Removal and Replacement	Toll Booth replacement on existing pedestal, unit delivered awaiting installation spring 2021.	17,992		Completed	2021
Hudson Mills	Picnic Area Development at Canoe Launch	Michigan Natural Resources Trust Fund grant funded project to develop an accessible kayak launch and associated site amenities at Dexter-Huron	395,608	192,700	Awaiting Grant Agreement	2022
Hudson Mills	UST Removal	Removal of underground storage tank at Golf Course	0	-	In Construction	2021
Stony Creek	Baypoint Beach Site Improvements	Construction of restroom and site work for support of Baypoint Beach	1,361,859		Completed	2021
Stony Creek	Shelden Trails Redevelopment	Redevelopment of the multi-use natural surface Shelden Trails system	863,845	50,000	In Construction	2021
Stony Creek	Boat Launch Building Redevelopment	Construction of a new restroom and shade structure at the boat lauch facility	1,660,167	50,000	Construction Beginning	2021
Stony Creek	Development of Off Leash Dog Area	Michigan Natural Resources Trust Fund grant funded project to develop a new fenced in area for off leash dog activities	197,367		In Construction	2021
Stony Creek	Backup Internet Fiber Installation	Comcast installation of underground fiber network	80,000		Substantially Completed	2021
Stony Creek	Shore Fishing Vault Latrine Replacement	Replace Vault Latrine at Shore Fishing area	411		In Construction	
Stony Creek	26 Mile Rd. Connector - Bike Path	Transportation Alternatives Program grant (obtained by Macomb County) funded project to connect into the park from 26 Mile Road	21,796		Design Complete - State is reviewing	2021
Stony Creek	Baypoint Beach Grinder Pump Installation	Installation of five septic tank filter systems to resolve the issue.	132,915		Completed	2021
Stony Creek	Golf Course Pumphouse & Irrigation System Replacement	Replacement of intakes, pumps, controls, piping and heads. One year of design before construction.	1,000,000		Budgeted	2023
Willow	Park Office Replacement	Construction of a new park office building at the north end of Willow Metropark to replace the sub-standard legacy facility at Lower Huron Metroparks.	2,521,013		In Construction - Framing	2021
Willow	Main Park Road Culvert Replacements near Acorn Knoll	Replacement of failing culvert on main loop road.	40,000		Cancelled - Moved to Major Maintenance	2021
Willow	Backup Internet Fiber Installation	Comcast to install new fiber network lines. Initial proposal - zero construction cost - now deemed unservable - IT reviewing options with Comcast	0		In Review	
Willow	Big Bend Shoreline Protection	National Fish and Wildlife Foundation SE MI Resilience Fund grant project to mitigate Huron River streambank erosion and improve habitat	511,037	250,000	Design Starting	2023
Oakwoods	Nature Center Exhibit Design & lighting/electrical	Design, production and installation of interpretive exhibits. Includes updated flooring, lighting and electrical.	728,396		Completed	2021

November Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
Oakwoods	Backup Internet Fiber Installation	Comcast to install new fiber network lines. Initial proposal - zero construction cost - now deemed unservable - IT reviewing options with Comcast	0		In Review	2021
Oakwoods	Accessible Nature Trail Development	Land and Water Conservation Fund grant funded project to develop an accessible nature trail and make associated site improvements	250,020	124,000	Awaiting Grant Agreement	2022
Lake Erie	Shoreline and Fish Habitat Restoration	This shoreline project will regrade the existing shoreline, install native vegetation as well as creating near-shore shoals. Channels and pools will also be created in the nearby marsh. This work will improve fish spawning habitat.	1,624,933	1,404,353	In Design	2022
Lake Erie	Boat Launch Fish Cleaning Station	Installation of an onsite fish cleaning station at the boat launch facility	45,000		Budgeted	2023
Lake Erie	Accessible Kayak Launch with Area Development	Land and Water Conservation Fund grant funded project to develop an accessible kayak launch and associated site amenities at the Boat Launch	245,133	122,500	Awaiting grant agreement	2023
Wolcott	Phase Two - Animal Pen Fencing Replacement	Replacement of detriorated animal pen fencing	41,763		Complete	2021
Wolcott	Farm to Mill Trail Connector	Develpment of a connector trail from the Farm to the Mill. Multi year project design and construction	1,000,958		Budgeted	2024
Indian Springs	Backup Internet Fiber Installation	Comcast to install new fiber network lines. No construction costs at this location in contract with Comcast - funds may be needed at other locations	7,758		Completed	2021
Huron Meadows	Backup Internet Fiber Installation	Comcast to install new fiber network lines. Initial proposal - zero construction cost - now deemed unservable - IT reviewing options with Comcast	0		In Review	2021
			$ 21,899,342	$ 4,476,587		

Capital Project Status Report

As of 11/30/2021

Location	Project Title	Original Budget	Amended Budget	Year to Date Transactions	Life to Date Transactions	Life to Date Encumbrance	Remaining Budget	Available Grant Funding
Lake St Clair	Pump Station No. 1 Replacement-SAW Grant	350,990	445,172	27,404	421,277	0	23,895	
Lake St Clair	Black Creek Marsh Wetland Filtration Enhancement	253,000	288,943	53,700	53,700	0	235,243	160,000
Lake St Clair	Accessible Kayak Launch & Power Installation	50,000	50,000	0	0	0	50,000	
Lake St Clair	Backup Internet Fiber Installation	40,000	40,000	0	0	30,815	9,185	
Lake St Clair	Electrical Grid Replacement - Design in 2020	802,216	807,064	43,746	43,746	72,718	690,600	
Lake St Clair	Beach Restoration	400,000	473,418	254,599	265,256	194,855	13,307	292,167
Lake St Clair	Michiagn Coastal Management Program-Acccessible Launch	392,850	392,850	0	0	0	392,850	196,425
Kensington	Maple Beach Site Improvements	820,396	1,096,852	76,284	1,103,072	0	(6,220)	
Kensington	Maple Beach - Universal Accessible Playground	525,000	553,872	88,501	493,184	0	60,688	
Kensington	West Boat Launch - Accessible Kayak Launch	308,000	323,355	11,049	15,355	0	308,000	154,000
Kensington	Farm Center Sidewalk Replacement	150,000	184,481	183,656	183,656	0	825	
Dexter-Delhi	Relocating Concessionaire Canoe Livery Building	75,000	98,306	28,255	45,861	0	52,445	5,000
Lower Huron	North Fishing Site Redevelopment	288,800	297,399	254,956	282,333	0	15,066	144,400
Lower Huron	Backup Internet Fiber Installation	205,000	185,362	0	150,000	33,702	1,660	
Lower Huron	Woods Creek Playground Development	1,300,000	1,332,992	985,492	985,492	427,093	(79,593)	
Lower Huron	Toll Booth Replacement and Paving	30,000	30,000	0	0	21,840	8,160	
Lower Huron	Turtle Cove Crosswalk Path	90,000	97,773	7,773	7,773	81,353	8,648	
Lower Huron	Iron Bell Trail Project	716,700	842,633	48,005	48,005	24,897	769,731	488,742
Lower Huron	Walnut Grove Campground Improvements	784,600	784,600	0	0	0	784,600	450,000
Lower Huron	Off Leash Dog Area Development	330,800	330,800	0	0	0	330,800	165,400
Hudson Mills	Backup Internet Fiber Installation	40,000	7,994	0	0	0	7,994	
Hudson Mills	Rapids View area Development	453,800	487,507	29,407	33,707	0	453,800	226,900
Hudson Mills	Toll Booth Removal and Replacement	80,000	17,992	0	12,346	0	5,646	
Hudson Mills	Hike Bike Trail Reconstruction	-	0	0	0	0	0	
Hudson Mills	Picnic Area Development at Canoe Launch	385,500	395,608	10,108	10,108	0	385,500	192,700
Hudson Mills	UST Removal	-	0	4,588	4,588	0	(4,588)	
Stony Creek	Baypoint Beach Site Improvements	847,736	1,361,859	106,721	1,189,157	0	172,702	
Stony Creek	Shelden Trails Redevelopment	182,689	863,845	153,339	264,856	29,500	569,489	50,000
Stony Creek	Boat Launch Building Redevelopment	1,750,000	1,660,167	171,234	264,856	1,584,460	(189,149)	50,000
Stony Creek	Development of Off Leash Dog Area	138,500	197,367	168,844	169,869	27,497	0	
Stony Creek	Backup Internet Fiber Installation	80,000	80,000	0	0	70,407	9,593	
Stony Creek	Shore Fishing Vault Latrine Replacement	-	411	411	411	0	0	
Stony Creek	26 Mile Rd. Connector - Bike Path	-	21,796	11,231	21,796	0	0	
Stony Creek	Baypoint Beach Grinder Pump Installation	150,000	132,915	103,715	103,715	0	29,200	
Stony Creek	Golf Course Pumphouse & Irrigation System Replacement	1,000,000	1,000,000	0	0	0	1,000,000	
Willow	Park Office Replacement	2,121,300	2,521,013	1,286,406	1,467,873	1,034,721	18,419	
Willow	Main Park Road Culvert Replacements near Acorn Knoll	40,000	40,000	0	0	0	40,000	
Willow	Backup Internet Fiber Installation	40,000	0	0	0	0	0	
Willow	Big Bend Shoreline Protection	501,593	511,037	12,586	12,586	4,657	493,793	250,000
Oakwoods	Nature Center Exhibit Design & lighting/electrical	720,000	728,396	108,003	725,666	5,806	(3,077)	

Capital Project Status Report

As of 11/30/2021

Location	Project Title	Original Budget	Amended Budget	Year to Date Transactions	Life to Date Transactions	Life to Date Encumbrance	Remaining Budget	Available Grant Funding
Oakwoods	Backup Internet Fiber Installation	40,000	0	0	0	0	0	
Oakwoods	Accessible Nature Trail Development	248,000	250,020	2,020	2,020	0	248,000	124,000
Lake Erie	Shoreline and Fish Habitat Restoration	1,600,000	1,624,933	84,962	200,869	23,555	1,400,508	1,404,353
Lake Erie	Boat Launch Fish Cleaning Station	45,000	45,000	0	0	0	45,000	
Lake Erie	Accessible Kayak Launch with Area Development	245,000	245,133	0	133	0	245,000	122,500
Wolcott	Phase Two - Animal Pen Fencing Replacement	30,000	41,763	2,561	8,066	0	33,697	
Wolcott	Farm to Mill Trail Connector	1,000,000	1,000,958	0	958	0	1,000,000	
Indian Springs	Backup Internet Fiber Installation	40,000	7,758	0	0	0	7,758	
Huron Meadow	Backup Internet Fiber Installation	80,000	0	0	0	0	0	
			$ 21,899,342	$ 4,330,204	$ 8,592,289	$ 3,667,876	$ 9,639,177	$ 4,476,587

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Report – Monthly Major Maintenance Update
Date**:** December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file the Major Maintenance report as submitted by Shedreka Miller and staff.

Background: The Metroparks track the costs associated with periodic or infrequent repairs or maintenance that do not meet the criteria for capitalization in a function of our chart of accounts known as major maintenance. We utilize a project accounting system to budget, record and report these costs. To provide the Board and the broader public with improved information surrounding major maintenance projects we have developed a monthly Major Maintenance Status Report.

This report is modeled after the revised Capital Project Fund report and the format includes the location, project title from the budget document, a brief description of the work, the original budget funding, the current amended budget, year-to-date transactions, life-to-date transactions, life-to-date encumbrance balance, the remaining budget and the project status.

Most major maintenance repairs are completed within one year. Occasionally projects require additional time to complete.

As of the end of November, there has been a lot of work contracted or started and year-to-date expenses are 58.9 percent of the total budget.

Attachment: November 2021 Major Maintenance Status Report

Major Maintenance Status Report

As of 11/30/2021

Location	Project Title	Project Description	Original Budget Funding	Amended Budget	Year to Date Transactions	Life to Date Transactions	Life to Date Encumbrance	Remaining Budget	Project Status
Administrative Office	Window Replacement	Replace selected windows throughout the building to allow operable windows increasing external air flow into building.	115,000	124,248	103,784	103,784	20,465	0	Completed-Waiting on Final Pyament
Administrative Office	Interior/Exterior Door Replacement	Replace front doors to building entrance	-	15,908	0	0	15,908	0	Under contract
Lake St Clair	North/South Marina Dock Electrical	Replace electrical conductors that feed the power to the pedestals for boaters at the North Marina rental slips. Current electrical has been damaged due to high water levels	1,170	15,292	1,170	15,292	0	0	Project from 2020
Lake St Clair	Boardwalk Decking & Replacement	Replaces a section of boardwalk decking on the east section of boardwalk. More phases will be need in subsequent years	156,508	156,508	156,508	156,508	0	(0)	Completed
Lake St Clair	Park Office Boiler Replacement	Replaces the second of two boilers in the LSC office and food bar building. The first was replaced in a previous project.	65,000	25,803	24,128	24,128	1,675	0	In construction
Lake St Clair	ADA Accessibility Improvements	This will bring three additional shelters up to ADA standards including 12 ADA accessible tables and one large ADA grill per shelter	20,000	0	0	0	0	0	Work is planned for fall of 2021
Lake St Clair	Spray Zone Pump Replacement	Facility utilizes two pumps for full pressure. One has currently failed and is planned for replacement	18,500	12,285	12,285	12,285	0	0	Completed
Lake St Clair	Fishing Pier Repairs	Two fishing piers located on the point have experienced ice damage to support. One is still useable with damage. This project will lift and replace support allowing both to be functional again.	12,000	0	0	0	0	0	Cancelled
Lake St Clair	Adventure Golf Carpet Replacement	Approximately 1,000 yards of carpet to cover all 18 holes at course.	33,000	27,613	27,613	27,613	0	(0)	Completed
Lake St Clair	Pickle Ball Court Conversion	Converts an existing tennis court to pickle ball courts.	12,000	11,727	2,827	2,827	0	8,900	Completed
Lake St Clair	Hike Bike Trail Reconstruction at Park Entrance	The existing paved surface is failing and in poor condition, this project will resurface the existing bike trail from the entrance to the Nature Center	243,600	212,560	198,999	198,999	0	13,561	Completed
Lake St Clair	Pool Slide Pump Conduit & Conductor Replacement	Replace pump on pool slide	-	143,209	8,788	8,788	134,421	0	In Construction
Lake St Clair	Fishing Pier Replacements	Donation Funded project	-	4,998	5,253	5,253	0	(255)	Project Started
Lake St Clair	Beach Soil/Containment Removal	In excess of 50,000 cubic yards of seaweed and other debris have accumulated from beach cleaning	50,000	50,000	0	0	50,000	0	Under contract
Lake St Clair	Stormwater Drainage Repairs on Culverts	Replacement of deteriorated culverts throughout the park	45,000	0	0	0	0	0	Project not started
Lake St Clair	Pool Slide Repair	This project will install a gel coating to cover the pool slides improving safety for park patrons	11,800	4,400	0	0	0	4,400	Under $10k, money transferred to park
Lake St Clair	Sidewalk at North Marina Shore	This project has been incorporated with the bike trail entrance repairs, will will replace the failing sidewalk along the North Marina	20,000	20,000	0	0	0	20,000	Completed- done with other sidewalk work
Kensington	Splash Pad Programming & Hardware Updates	Replaces the existing controls and programming for the operation of the Splash-n-Blast at Kensington	22,100	25,907	25,907	25,907	0	0	Completed
Kensington	Dam Concrete Work	Fix concrete spalling	100,000	3,569	3,569	3,569	0	0	Need more funding-moved to 2022 budget
Kensington	Maple Beach Irrigation Replacement	The project will install new irrigation lines and heads at Maple beach around the the restroom building	100,000	44,074	44,074	44,074	0	0	Completed
Kensington	Playground Mulch Installation	Annual mulch replenishment to meet safety requirements	-	13,134	13,134	13,134	0	0	Completed
Kensington	Historic Barn Roof Replacement	Replacing the deteriorated cedar shake roof.	21,000	17,705	17,705	17,705	0	0	Completed
Kensington	Hike Bike Trail Reconstruction-Nature Center to West Boat Launch	Replaces the existing failing asphalt surface on the bike trail	-	230,084	210,791	210,791	0	19,293	Completed
Kensington	Farm Septic Tank Repair Phase 2		-	50,768	5,318	5,318	45,450	0	In Construction
Kensington	Boat Launch Building & Seawall Repairs	Repairs to the steel on the existing seawall	30,000	0	0	0	0	0	In design - anticipate fall construction
Kensington	Trail Improvements - Playfield top of hill (Maple towards Possum)	Replaces the existing failing asphalt surface on the bike trail. THis project is combined with the Nature Center to West Boat Launch work	165,000	0	0	0	0	0	Completed

Major Maintenance Status Report

As of 11/30/2021

Location	Project Title	Project Description	Original Budget Funding	Amended Budget	Year to Date Transactions	Life to Date Transactions	Life to Date Encumbrance	Remaining Budget	Project Status
Kensington	Trail Improvements - Martindale North to Shore Fishing	Replaces the existing failing asphalt surface on the bike trail	427,000	0	0	0	0	0	Rebudgeted for 2022
Lower Huron	Replacement of Starter Tub-Turtle Cove	Replacement of the starting tub for the Turtle Cove green tube slide. Located at the top of the slide tower, crane needed to assist in replacement.	17,392	17,614	222	222	17,392	0	Contractor looking to install in Fall
Lower Huron	Turtle Cove Slide Tower and Support Structure Painting	Body slide and tube slide tower structure at Turtle Cove. Necessary for integrity of structure to resist chemical damage and rust build up.	70,000	47,329	47,329	47,329	0	0	Completed
Lower Huron	Turtle Cove lazy river VFD panels Repairs	Awaiting DTE Power quality assessment to determine if repairs or replacements are needed. This is for the control boards for two lazy river turbine motors at Turtle Cove.	15,000	0	0	0	0	0	Project not started- rebudgeted for 2022
Lower Huron	Lower Huron Upgrade Pump at Tulip Tree Comfort Station	Grinder pump upgrade for the comfort station that services both Tulip Tree and Walnut Grove Campground comfort stations.	15,000	0	0	0	0	0	Completed by Park
Lower Huron	Lower Huron Replace Culvert on Bike Trail at LH South End	Replace culvert under the hike bike trail located near the south entrance of Lower Huron Metropark.	30,000	0	0	0	0	0	Combined with Trail work at Willow
Lower Huron	Washago Pond Dam Repairs	Diver assessment of dam reapair needed at Washago pond dam. Anticipating a short term repair and assessment for a more permanent long term repair.	15,000	0	0	0	0	0	Cancelled - turned into Capital Project for 2022
Lower Huron	ADA Cement Pad for Grills	Continuation of ADA upgrades at Lower Huron/Willow shelters. Cement pads extension of shelter cement pad for ADA grill.	20,000	0	0	0	0	0	Park starting work
Hudson Mills	Golf Starter Building Roof Replacement	Replacement of flat roof section	30,000	1,220	1,220	1,220	0	0	Bids came in high and project will be rebid next year.
Hudson Mills	Golf Course Pump Station Upgrades	Replacement pumps	67,700	66,000	0	0	66,000	0	Under contract
Hudson Mills	Hike Bike Trail Reconstruction	Reconstruction of a section of shared use trail	432,000	261,747	222,655	222,655	39,092	0	Completed
Stony Creek	ADA Accessibility Improvements	This will bring two additional shelters up to ADA standards including 12 ADA accessible tables and one large ADA grill per shelter	30,000	0	0	0	0	0	Scheduled for fall
Stony Creek	Playground Mulch Installation	Annual mulch replenishment to meet safety requirements	-	14,328	14,328	14,328	0	0	Completed
Stony Creek	Golf Course Culvert Installs for Water Drainage	Cut cart path and install culvert to eliminate wet areas	20,000	27,250	0	0	27,250	0	Park starting work
Stony Creek	Large Well Controls		-	14,875	14,875	14,875	0	0	Completed
Stony Creek	Eastwood Beach Entrance Road Spot Repairs	Spot repairs to entrance drive	20,000	19,440	20,548	20,548	0	(1,108)	Completed
Stony Creek	Repaint Roadway & Hike Bike Paths	Address worst portions of trail and roadway	20,000	18,950	0	0	18,950	0	Park starting work
Stony Creek	Stormwater Drainage Repairs on Culverts	Replace existing deteriorated culverts	50,000	0	0	0	0	0	Project not started
Willow	Hike Bike Trail Reconstruction-Oakwoods Connector to Chestnut Rd	Hike bike trail resurface and correct drainage issue between Oakwoods and Willow Metroparks.	151,000	156,616	122,671	122,671	18,485	15,460	Completed
Willow	Carpenter Shop Siding Replacement	Exterior siding replacement for the Carpenter shop building located at the Willow Maintenance Service yard.	20,000	21,450	21,450	21,450	0	0	Completed
Oakwoods	Oakwoods Drainage repair for Sky-Come-Down trail	Nature trail has been flooded due to unknown reasons. Assessment and work for drainage resolution to this area.	35,000	0	0	0	0	0	Cancelled
Willow	Willow Replace Culvert at Southside of Park Washago to Pool Connector	Culvert repair/replacement located under the hike bike trail between the Willow pool and Washago Pond.	15,000	0	0	0	0	0	Completed - Part of Trail Project
Lake Erie	Replacement of Failing Culvert	Culvert repair/replacment located under the main park road between maintenance service drive and Cove Point area.	43,440	102,268	87,468	102,268	0	0	Completed
Lake Erie	Roof Replacements at 4 Various Buildings	Roof shingle replacement (and other roof repairs as required) for the Lake Erie Foodbar, Wet Shop/Bathhouse, Pool Mechanical and Tot Lot bathroom buildings.	139,960	278,364	199,006	267,081	0	11,283	Completed
Lake Erie	Marina Building Use Evaluation	Marina Building Use Evaluation	30,000	30,000	17,500	17,500	10,500	2,000	In Design

Major Maintenance Status Report

As of 11/30/2021

Location	Project Title	Project Description	Original Budget Funding	Amended Budget	Year to Date Transactions	Life to Date Transactions	Life to Date Encumbrance	Remaining Budget	Project Status
Lake Ere	Marina Dredging	Dredging in the Marina	-	2,054	2,054	2,054	0	0	Project Started
Lake Erie	Marcite Repair at Shallow End of Wave Pool	Total replacement of the Wave pool shallow end marcite; roughly 12,500 sq ft.	188,000	388,512	8,648	8,648	379,864	0	In Construciton
Lake Erie	Wave Pool Plaza Cement Work	Various sections of cement around wave pool plaza; to include a section of the hike bike path behind pool mechanical building.	60,000	67,765	6,726	6,726	57,169	3,870	In Construciton
Lake Erie	Boat Launch Road Repairs	Main culverts under the road to boat launch replaced. Road surfacing to be completed at a later date.	60,000	26,896	3,936	3,936	22,960	0	Completed
Lake Erie	Golf Maintenance Buliding Repairs	Repair/replace a wall, window and exterior siding of the Lake Erie golf course maintenance building.	15,000	15,000	0	0	14,650	350	Construction will start soon
Lake Erie	Marina Boiler Vent Stack Repair		-	0	0	0	23,906	(23,906)	In Construction
Wolcott	Replacement of Existing Pasture Fence	Replacement of animal pen fencing	23,792	88,696	29,657	88,696	0	0	Completed
Wolcott	Historic Mill Sprinkler System	Evaluation and possible repair of existing fire suppression system.	12,486	12,486	12,486	12,486	0	0	Completed
Wolcott	Horse Barn Electrical Upgrades	Evaluation and repair of electrical system in horse barn	-	15,725	15,725	15,725	0	0	Completed
Wolcott	Fill in Raceway at Mill	Project to look at fillling in the raceway beneath the Mill	80,000	0	0	0	0	0	Started-will carry over to next year
Indian Springs	Dome Polishing & Seal Replacement	Polishing and resealing of the interior and exterior surface of the underwater dome	89,235	261,269	134,968	255,171	6,098	(0)	Completed
Indian Springs	Splash Pad Programming & Hardware Updates	Replacement and upgrades to the control software and hardware for the splash pad	21,900	23,269	23,269	23,269	0	0	Completed
Indian Springs	EDC Flooring/Painting of Dome Area	Replacement carpeting and painting of concrete in the underwater dome	20,000	0	0	0	0	0	In Progress
Huron Meadows	Golf Starter Building Roof Replacement	Replacement of the existing shingle roof on the starter building	75,000	23,728	24,720	24,720	0	(992)	Moved to 2022
			$ 3,600,582	$ 3,212,642	$ 1,893,313	$ 2,169,553	$ 970,234	$ 72,856	

To: Board of Commissioners
From: Randy Rossman, Chief of Human Resources & Labor Relations
Subject: Approval – 2022 Worker's Compensation Insurance Renewal
Date: December 3, 2021

Action Requested: Motion Approve

That the Board of Commissioners approve renewal of the Worker's Compensation insurance policy provided by the Michigan Counties Workers' Compensation Fund (MCWCF) for 2022 for the estimated annual premium in the amount of $466,164.23 as recommended by the Chief of Human Resources and Labor Relations Randy Rossman and staff.

Fiscal Impact: The 2022 renewal premium has been included in the 2022 budgeted fringe benefit calculation used in development of the 2022 General Fund Budget. The experience modification factor and rates are the same as 2021 premium.

Background: Since Jan. 1, 2013 the Metroparks have participated in the Michigan Counties Workers' Compensation Self-Insured Fund (MCWCF). Full statutory coverage for workers' disability compensation and employers' liability is guaranteed by the Fund through authority granted by the state of Michigan under Chapter 6, Section 418.611, and Paragraph (2) of the Workers' Disability Compensation Act of 1969, as amended.

The premium for 2022 is based on budgeted hours. It will be audited for actual hours worked and a final payment or return of premium will occur at that time.

Although this policy renews unless either party provides 60 days notification of termination, it is consistent with past practice that the Board formally approve renewal at this time.

It should be noted, as members of the MCWCF that the Metroparks are eligible to receive dividend refunds in the year following the completed audit of results. For the plan year 2020, $45,889 is expected to be received in December 2021.

To: Board of Commissioners
From: Randy Rossman, Chief of Human Resources and Labor Relations
Subject: Approval – 2022 Fiduciary Liability Insurance Renewal
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve renewing the fiduciary liability insurance for the premium amount of $13,124 with the Chubb Insurance Company for 2022 as recommended by the Chief of Human Resources and Labor Relations Randy Rossman and staff.

Fiscal Impact: The 2022 renewal premium has been included in the development of the 2022 budget.

Background: Since Jan. 1, 2013 the Metroparks have participated in a self-insured risk pool for property and liability insurance with the Michigan Municipal Risk Management Authority (MMRMA). However, the program does not provide fiduciary liability coverage. To obtain the needed coverage, the Metroparks MMRMA agent sought proposals from the marketplace in 2017 through Johnston Lewis Associates of Troy, Michigan.

The basic purpose of fiduciary liability insurance is to protect plan sponsors, fiduciaries, trustees and other employees for the defense costs and penalties if they are sued as a result of fiduciary decisions they have made in the context of their responsibilities with the Metroparks. Generally, this includes any violation of responsibilities, obligations, or duties imposed on the fiduciaries as well as acts, errors, or omissions involved in plan administration. This includes the Board of Commissioners, staff and members of the Pension Committee and Retiree Health Care Trust Board.

To: Board of Commissioners
From: Randy Rossman, Chief of Human Resources and Labor Relations
Subject: Approval – 2022 Property and Liability Insurance Renewal
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the suggested renewal for the 2022 property and liability insurance with the Michigan Municipal Risk Management Authority (MMRMA) as recommended by Chief of Human Resources and Labor Relations Randy Rossman and staff.

Fiscal Impact: The renewal premium is included in the 2022 recommended budget.

Background: Since Jan. 2, 2013, The Metroparks have participated in a self-insured risk pool for property and liability insurance with the Michigan Municipal Risk Management Authority (MMRMA). The program provides for a $15,000,000 liability coverage limit with a $75,000 per claim self-insured retention level, a $15,000 per vehicle/$30,000 per occurrence on vehicle physical damage, property and crime deductible of $1,000 and an annual cap on deductible expenses of $255,000.

Based on the results of MMRMA's assessment of Metroparks operations and claims exposure, renewal rates for 2022 came in with an annual premium of $669,626 including $255,000 stop loss coverage. This is a $17,828 increase from the $651,798 premium in 2021 or 2.7 percent increase.

The Metroparks are also required to deposit an additional $50,000 into the Member Self Insured Retention (SIR) Fund. These funds, which earn interest, are used to pay deductibles and losses that fall within the self-insured retention layer.

As MMRMA members, the Metroparks participates in the MMRMA's member net asset distribution program. The Metroparks received a payment from the distribution program in the amount of $244,766 in December 2020 and staff expects a payment in the amount of $124,749 in December 2021.

In addition, the Metroparks participates in the MMRMA Risk Avoidance Program (RAP). RAP provides grants for reimbursement of 50 percent of expenses up to $50,000 for employee training, projects, equipment and services that reduce liability exposure.

MMRMA staff also provides safety inspections and direction to staff on loss prevention initiatives and policies.

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Approval – 2020 Tax Levy Adjustments
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners (1) approve the 2020 Tax Levy Adjustments to decrease the current year receivable balance; and (2) write-off 2015 Delinquent Personal Property tax receivable balances as requested by Chief of Finance Shedreka Miller and staff.

Fiscal Impact: As a result of this review the tax levy receivable and associated budgeted revenue will be decreased. The net fiscal impact is an expected decrease in fund balance of $204,872.58.

Background: At the start of each budget year, the Metroparks establishes a receivable account for the current year's tax levy. Since 2008, Metroparks has been estimating the amount of taxes that will be captured locally under various tax abatement programs or adjusted downward by Board of Reviews. For the 2021 Budget, Metroparks initial levy was $34,639,553 with estimated captured taxes of $750,000 producing a "net" tax receivable balance of $33,889,553. As tax payments are received during the year, they are applied to reduce the tax receivable balance.

Prior to year end, it is necessary to reconcile the differences between Metroparks and County accounting records. During the past several months, staff has been working with various representatives of the five County Treasurer's offices to obtain information on the many 2020 tax levy adjustments from local tax abatement programs, Board of Reviews, Tax Tribunals, etc. In total, the actual tax levy adjustments reported by County Treasurer's offices are $954,872.58 compared to the Metroparks estimated adjustments of $750,000. This results in a net tax levy receivable decrease or write-down of $204,872.58 as summarized below.

County	Estimated Tax Adjustments	Actual Tax Adjustments	Net Tax Write Up/(Down)
Livingston	$ 25,000.00	$ 27,921.22	$ (2,921.22)
Macomb	25,000.00	52,279.71	(27,279.71)
Oakland	300,000.00	339,183.76	(39,183.76)
Washtenaw	25,000.00	25,000.00	-
Wayne	375,000.00	510,487.89	(135,487.89)
Totals	**$ 750,000.00**	**$ 954,872.58**	**$ (204,872.58)**

At this time, it is appropriate to reduce the Metroparks tax receivable balances for uncollected delinquent 2015 personal property taxes as collection of these taxes are very unlikely. Macomb and Oakland Counties have sent Circuit Court Judgements striking these taxes from the tax rolls. Although staff does not receive copies of circuit court judgements from Livingston, Washtenaw, or Wayne Counties, it is consistent to also write off their 2015 receivable balances as well. The total tax receivable balances to write-off for all five counties is $21,653.31.

Between the 2020 tax levy adjustment due to the current year reconciliations and the write off of the 2015 and the prior year's personal delinquent balances, the net decrease to the Metroparks tax receivable balance totals $226,525.89. The net impact of these tax levy adjustments is a decrease to the Metroparks Fund Balance.

To: Board of Commissioners
From: Michael Lyons, Interim Deputy Director
Project Title: Approval – Motor City Canoe Rental Services Agreement
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners renew a one-year Services Agreement with Motor City Canoe Rentals for 2022 as recommended by Deputy Director Michael Lyons and staff.

Fiscal Impact: The Metroparks will receive a 20 percent commission of gross revenue, with no expense to the Metroparks. 2021 concession revenue received was $9,184.05.

Background: Motor City Canoe Rentals began operating a canoe livery at Oakwoods Metropark from the Cedar Knoll Picnic area in 2018. Staff would like to renew the agreement for the 2022 season. Staff plans to issue an RFP for such services in 2022 for the 2023-2026 season(s).

Attachments: Motor City Canoe Rental Service Agreement

HURON-CLINTON METROPOLITAN AUTHORITY

Concessionaire Contract

CONTRACT EXPIRATION DATE: December 31, 2022

This "Contract" made this 9th day of December, 2021 between the Huron-Clinton Metropolitan, a Michigan public body corporate, whose address is 13000 High Ridge Drive, Brighton, Michigan 48114, and the "Contractor" as further described in the following Table. In this Contract, either Contractor or HCMA (as defined herein) may also be referred to individually as "Party" or collectively, as "Parties".

HURON-CLINTON METROPOLITAN AUTHORITY 13000 High Ridge Drive Brighton, MI 48114 Tel: (810) 227-2757 Fax: (810) 227-7512 (herein, "HCMA")	MOTOR CITY CANOE RENTALS, L.L.C 24500 Goddard Road Taylor, MI 48180 Tel: (313) 473-9847 Identification No. E5787W (herein the "Contractor")

INTRODUCTION

A. The HCMA owns and operates the following facilities:

- Lower Huron Metropark, 17845 Savage Rd.; Belleville, MI (mailing address)
- Willow Metropark, 17845 Savage Rd.; Belleville, MI 48111 (mailing address)
- Oakwoods Metropark, 17845 Savage Rd.; Belleville, MI (mailing address)

B. Subject to the terms and conditions set forth herein, HCMA desires to grant a license to utilize space (as designated by HCMA) at Lower Huron, Willow and Oakwoods Metroparks to the Contractor and to grant to the Contractor the right to provide certain services at said locations under the terms and conditions set forth in this Contract.

This Contract is organized and divided into the following "Section" or "Sections" for the convenience of the Parties.

SECTION 1. CONTRACT DOCUMENTS AND DEFINITIONS

SECTION 2. CONTRACT EFFECTIVE DATE AND TERMINATION

SECTION 3. SCOPE OF CONTRACTOR'S SERVICES

SECTION 4. USE OF HCMA FACILITIES AND PROPERTY

SECTION 5. PAYMENT OBLIGATIONS

SECTION 6. CONTRACTOR'S ASSURANCES AND WARRANTIES

SECTION 7. CONTRACTOR PROVIDED INSURANCE AND INDEMNIFICATION

SECTION 8. GENERAL TERMS AND CONDITIONS

In consideration of the mutual promises, obligations, representations, and assurances in this Contract, the Parties agree to the following:

1. CONTRACT DOCUMENTS AND DEFINITIONS

The following words and expressions when printed with the first letter capitalized as shown herein, whether used in the singular or plural, possessive or non-possessive, and/or either within or without quotation marks, shall be defined and interpreted as follows:

1.1. "Services" shall mean the following items:

1.1.1. Rental items which will include but not be limited to:

- Canoes
- Kayaks
- Tubes

1.1.2. Porter service between Lower Huron, Willow and Oakwoods for individuals with their own equipment which may include the use of bicycles.

1.2. "Contractor Employee" means without limitation, any employees, officers, directors, members, managers, trustees, volunteers, attorneys, and representatives of Contractor, and also includes any Contractor licensees, concessionaires, contractors, subcontractors, independent contractors, contractor's suppliers, subsidiaries, joint ventures or partners, and/or any such persons, successors or predecessors, employees, (whether such persons act or acted in their personal, representative or official capacities), and/or any and all persons acting by, through, under, or in concert with any of the above. "Contractor Employee" shall also include any person who was a Contractor Employee at any time during the term of this Contract but, for any reason, is no longer employed, appointed, or elected in that capacity.

1.3. "Claims" means any alleged losses, claims, complaints, demands for relief or damages, suits, causes of action, proceedings, judgments, deficiencies, liability, penalties, litigation, costs, and expenses, including, but not limited to, reimbursement for reasonable attorney fees, witness fees, court costs, investigation expenses, litigation expenses, amounts paid in settlement, and/or other amounts or liabilities of any kind which arise or related to the Services provided by Contractor and are imposed on, incurred by, or asserted against the HCMA, or for which the HCMA may become legally and/or contractually obligated to pay or defend.

1.4. "Contract Documents" This Contract includes and fully incorporates herein all of the following documents:

1.4.1. Exhibit I: Contractor Insurance Requirements.

1.5. "HCMA" means the Huron-Clinton Metropolitan Authority, a Michigan public body corporate, its departments, divisions, authorities, boards, committees, and "HCMA Agent" as defined below.

1.6. "HCMA Agent" means all appointed officials, directors, board members, commissioners, employees, volunteers, representatives, and/or any such persons' successors (whether such person act or acted in their personal representative or official capacities), and/or any persons acting by, through, under, or in concert with any of them. "HCMA Agent" shall also include any person who was a "HCMA Agent" anytime during the term of this Contract but, for any reason, is no longer employed, appointed, or elected and serving as an Agent.

1.7. "Day" means any calendar day, which shall begin at 12:00:01 a.m. and end at 11:59:59 p.m.

1.8. "Facility" means a building, or property, as designated by HCMA located at Lower Huron, Willow and/or Oakwoods Metropark.

1.9. "HCMA Board of Commissioners" means the HCMA commission established in accordance with Michigan Public Act 147 of the Michigan Public Acts of 1939, as amended, Michigan Compiled Laws 119.51 et seq.

2. CONTRACT EFFECTIVE DATE AND TERMINATION

2.1. The effective date of this Contract shall be January 1st 2022, and unless otherwise terminated or canceled as provided herein, it shall end at 11:59:59 p.m. on the "Contract Expiration Date" shown on the first page of this Contract, at which time this Contract expires without any further act or notice of either Party being required. The Parties are under no obligation to renew or extend this Contract after Contract Expiration Date. At the expiration of the Contract unless otherwise extended, the Contract shall be bid through HCMA, according to its policies and procedures. Notwithstanding the above, under no circumstances shall this Contract be effective until and unless:

2.1.1. This Contract is signed by a Contractor Employee, legally authorized to bind the Contractor.

2.1.2. Any and all Contractor Certificates of Insurance and any other conditions precedent to the Contract have been submitted and accepted by the HCMA.

2.1.3. This Contract is signed by an authorized agent of the HCMA, as provided for on the signature page of this Contract, who shall be the final signatory to this Contract.

2.2. Termination. HCMA may terminate and/or cancel this Contract (or any part thereof) at any time during the term, any renewal, or any extension of this Contract, upon thirty (30) days written notice to the Contractor, for any reason, including convenience without incurring obligation or penalty of any kind. The effective date for termination or cancellation shall be clearly stated in the written notice.

2.3. Contractor may terminate and/or cancel this Contract (or any part thereof) at anytime upon sixty (60) days written notice to HCMA, if HCMA defaults in any obligation contained herein, and within the sixty (60) notice period the HCMA has failed or has not attempted to cure any such default. The effective date of termination and/or cancellation and the specific alleged default shall be clearly stated in the written notice

2.4. In the event of termination and/or cancellation by HCMA for any reason, Contractor shall pay the HCMA all fees as set forth herein until the effective date of termination. Upon termination, cancellation and/or expiration of this Contract, Contractor's use of HCMA Property shall cease as of the effective date of termination cancellation and/or expiration.

2.5. Under no circumstances shall the HCMA be liable for any future loss of income, profits, any consequential damages or any loss of business opportunities, revenues, or any other economic benefit Contractor may have realized but for the termination and/or cancellation of this Contract. The HCMA shall not be obligated to pay Contractor any cancellation or termination fee if this Contract is cancelled or terminated as provided herein.

3. SCOPE OF CONTRACTOR'S SERVICES

3.1. Contractor shall perform the Services as defined herein at the Facility, not less than described in section 3.4.

3.2. Equipment and Supplies. Contractor is responsible for providing all equipment and supplies to deliver the Services required by this Contract, which are not expressly required to be provided by the HCMA herein.

3.3. Personal Floatation Devices and Waiver. Approved PFD's are required for all rentals. Contractor shall require every customer/renter to execute an HCMA-provided waiver of liability and indemnification agreement for inherently dangerous activities (a "Waiver"). Contractor shall maintain all original Waivers for the term of this Contract, shall make all or any of the Waivers available to HCMA upon request, and shall transfer all Waivers to HCMA's custody on or before the Contract Expiration Date or the effective date of any earlier termination.

3.4. Days/Hours of Operation. Minimum days/hours of on-site operation will be:

3.4.1. May: Fridays, noon to 5pm, Weekends and Holidays, 10am – 5pm or by appointment

3.4.2. June, July, August: Monday through Thursday, 12pm – 5pm, Friday through Sunday , 9am – 5pm

3.4.3. September and October: Weekends and Holidays, 10am – 5pm or by appointment

4. USE OF HCMA FACILITIES AND PROPERTY

4.1. Contractor may use and have access to the Facility described and depicted in this contract to provide the Services.

4.2. The HCMA may access the Facility at any time for the purpose of examining and inspecting the Facility and evaluating the Services provided pursuant to this Contract. If the HCMA determines that the Facility is not maintained pursuant to this Contract or Services are not provided pursuant to this Contract, it shall immediately notify Contractor in writing to correct the unsatisfactory conditions or Services. Contractor shall take immediate steps to correct such conditions or Services.

4.3. Contractor agrees not to advertise its Services with HCMA in any manner or form, on or at the Facility, HCMA premises, or other location; or in any newspapers, website or through the use of electronic media, without the prior written consent of the HCMA Director or his or her designee. Contractor shall not employ or use any persons known as "hawkers," spielers," "crier" or other noise makers or means of attracting attention to Contractor's business, unless approved in writing by HCMA Director or his or her designee.

4.4. Contractor shall keep the Facility and anything stored thereon in good order and repair and in a clean, safe and healthful condition as required by this Contract and as required by federal, state or local, law, rule, regulation or ordinance.

4.5. Except as otherwise provided in this Contract and unless prior written approval is given by the HCMA Director or his or her designee, Contractor shall not make any alterations, additions, or changes to the Facility.

4.6. At the expiration or termination of this Contract, Contractor shall leave the Facility in the same condition that Contractor found them and clean of all rubbish. Contractor shall remove all of its personal property within thirty (30) days of expiration or termination of this Contract. If Contractor does not remove its personal property within the thirty (30) day period, the HCMA shall dispose of it as it sees fit and Contractor shall reimburse the HCMA for all reasonable costs associated with the disposal of the personal property upon receipt of an invoice from HCMA.

4.7. Damage to HCMA Facilities. Contractor shall be responsible for any damage to the Facilities or other HCMA property that is caused by the negligence of Contractor or Contractor Employees. If damage occurs, Contractor shall notify the HCMA immediately and the HCMA shall make the necessary repairs and/or replacements or cause a third party to make the necessary repairs or replacements, provided, however, that upon receipt of an invoice from the HCMA, Contractor shall reimburse the HCMA for all reasonable costs associated with repairing and/or replacing the Facilities or other HCMA owned property.

4.8. Damage to Contractor Property. Contractor shall be solely liable and responsible for any property loss or damage resulting from fire, theft or other means to Contractor's personal property located, kept, or stored on or around the Facilities during this Contract.

4.9. Contractor shall be solely liable and responsible for any Claims, occurring at or around the Facilities, which arise out of Contractor's or Contractor's Employees use of the Facilities or performance of Services under this Contract.

4.10. Contractor acknowledges that it has no title in or to the Facility or any portion thereof and will not claim any such title to the Facility.

5. PAYMENT OBLIGATIONS

5.1. Contractor shall pay HCMA 20% of gross revenue, payable in monthly installments in exchange for the license to provide Services as set forth in this Contract. Days/Months of operation will not be less than defined in section 3.4.

5.2. The Monthly Fee shall be due and payable on the 15th of each calendar month while in operation.

5.3. Late Charge. If the HCMA does not receive the Monthly Fee or any other sum owed by Contractor under this Contract within five (5) days after its due date, Contractor shall pay the HCMA a late charge equal to five percent (5%) of any such overdue amount. Such late charge represents a fair and reasonable estimate of the costs the HCMA will incur by reason of late payment by the HCMA. Acceptance of such late charge by the HCMA shall in no event constitute a waiver of Contractor's default with respect to such overdue amount, nor prevent the HCMA from exercising any of its other rights and remedies.

5.4. Under no circumstances shall the HCMA be responsible for any cost, fee, fine, penalty, or direct, indirect, special, incidental or consequential damages incurred or suffered by Contractor in connection with or resulting from Contractor's provision of Services under this Contract.

5.5. The HCMA has the right to offset any amounts due and owing to the Contractor should the HCMA incur any cost associated with this Contract that is the obligation of Contractor under this Contract.

6. CONTRACTOR'S ASSURANCES AND WARRANTIES

6.1. Service Warranty. Contractor warrants that all Services performed hereunder will be performed in a manner that complies with all applicable laws, statutes, regulations, ordinances, and professional standards.

6.2. Taxes. The Contractor shall pay, its own local, state and federal taxes, including without limitation, taxes by reason of this Contract, social security taxes, and unemployment compensation taxes. The HCMA shall not be liable to or required to reimburse the Contractor for any federal, state and local taxes or fees of any kind.

6.3. Contractor's Incidental Expenses. Except as otherwise expressly provided in this Contract, the Contractor shall be solely responsible and liable for all of Contractor's costs and expenses incident to the performance of all Services for the HCMA including, but not limited to, any professional dues, association fees, license fees, fines, taxes, and penalties.

6.4. Contractor Employees.

6.4.1. Contractor shall employ and assign qualified Contractor Employees as necessary and appropriate to provide the Services under this Contract. Contractor shall ensure all Contractor Employees have all the necessary knowledge, skill, and qualifications

necessary to perform the required Services and possess any necessary licenses, permits, certificates, and governmental authorizations as may be required by law.

6.4.2. Contractor shall solely control, direct, and supervise all Contractor Employees with respect to all Contractor obligations under this Contract. Contractor will be solely responsible for and fully liable for the conduct and supervision of any Contractor Employee.

6.4.3. All Contractor Employees assigned to work under this Contract may, at the HCMA's discretion, be subject to a security check and clearance by the HCMA.

6.5. Contractor Employee-Related Expenses. All Contractor Employees shall be employed at the Contractor's sole expense (including employment-related taxes and insurance) and the Contractor warrants that all Contractor Employees shall fully comply with and adhere to all of the terms of this Contract. Contractor shall be solely and completely liable for any and all applicable Contractor Employee's federal, state, or local payment withholdings or contributions and/or any and all Contractor Employee related pension or welfare benefits plan contribution under federal or state law. Contractor shall indemnify and hold the HCMA harmless for all Claims against the HCMA by any Contractor Employee, arising out of any contract for hire or employer-employee relationship between the Contractor and any Contractor Employee, including, but not limited to, Worker's Compensation, disability pay or other insurance of any kind.

6.6. Full Knowledge of Service Expectations and Attendant Circumstances. The Contractor is responsible for being adequately and properly prepared to execute this Contract. Contractor has satisfied itself in all material respects that it will be able to perform all obligations under the Contract as specified herein.

6.7. The Contractor's Relationship To The HCMA Is That Of An Independent Contractor. Nothing in this Contract is intended to establish an employer-employee relationship between the HCMA and either the Contractor or any Contractor Employee. All Contractor Employees assigned to provide Services under this Contract by the Contractor shall, in all cases, be deemed employees of the Contractor and not employees, agents or sub-contractors of the HCMA.

7. CONTRACTOR PROVIDED INSURANCE AND INDEMNIFICATION

7.1. Indemnification.

7.1.1. Contractor shall indemnify, defend and hold HCMA harmless from any and all Claims which are incurred by or asserted against HCMA by any person or entity alleged to have been caused or found to arise, from the acts, performances, errors, or omissions of Contractor or Contractor's Employees, including, without limitation, all Claims relating to injury or death of any person or damage to any property.

7.1.2. The indemnification rights contained in this Contract are in excess and over and above any valid and collectible insurance rights/policies. Contractor and HCMA shall have no rights against each other for any indemnification (e.g., contractual, equitable, or by implication), contribution, subrogation, and/or any other right to be reimbursed except as expressly provided herein.

7.1.3. Contractor waives and releases all actions, liabilities, loss and damage including any subrogated rights it may have against the HCMA based upon any Claim brought against the HCMA suffered by a Contractor Employee.

7.2. Contractor Provided Insurance. At all times during this Contract, Contractor shall obtain and maintain insurance according to the specifications indicated in Exhibit I.

8. GENERAL TERMS AND CONDITIONS

8.1. Cumulative Remedies. A Party's exercise of any remedy shall not preclude the exercise of any other remedies, all of which shall be cumulative. A Party shall have the right, in its sole discretion, to determine which remedies are to be exercised and in which order.

8.2. Survival of Terms and Conditions. The following terms and conditions shall survive and continue in full force beyond the termination and/or cancellation of this Contract (or any part thereof) until the terms and conditions are fully satisfied or expire by their very nature:

"CONTRACTOR'S ASSURANCES AND WARRANTIES";

"CONTRACTOR PROVIDED INSURANCE AND INDEMNIFICATION";

"Damage Clean Up To HCMA Property and/or Premises";

"Severability";

"Governing Law/Consent To Jurisdiction And Venue"; and

"Survival of Terms And Conditions".

8.3. HCMA Right to Suspend Services. Upon written notice, the HCMA may suspend performance of this Contract if Contractor has materially failed to comply with Federal, State, or Local laws, or any requirements contained in this Contract. The right to suspend services is in addition to the HCMA's right to terminate and/or cancel this Contract. The HCMA shall incur no penalty, expense, or liability to Contractor if the HCMA suspends services under this Section.

8.4. No Third Party Beneficiaries. Except as provided for the benefit of the Parties, this Contract does not and is not intended to create any obligation, duty, promise, contractual right or benefit, right to be indemnified, right to be subrogated to the Parties' rights in this Contract, and/or any other right, in favor of any other person or entity.

8.5. Compliance with Laws. Contractor shall comply with all federal, state, and local laws, statutes, ordinances, regulations, rules, insurance policy requirements, and requirements applicable to its activities under this Contract, including but not limited to the Michigan Liquor Control Code, as amended, and all regulations and rules promulgated thereunder.

8.6. Permits and Licenses. Contractor shall be responsible for obtaining, maintaining, and paying for all licenses, permits, certificates, and governmental authorizations necessary to perform its obligations under this Contract and to conduct business under this Contract.

8.7. Discrimination. Contractor shall not discriminate against any employee or applicant for employment because of sex, race, religion, color, national origin, or handicap in violation of State and Federal law.

8.7.1. Contractor shall promptly notify the HCMA of any complaint or charge filed and/or determination by any Court or administrative agency of illegal discrimination by Contractor.

8.7.2. The HCMA, in its discretion, may consider any illegal discrimination described above as a breach of this Contract and may terminate or cancel this Contract immediately with notice.

8.8. Reservation of Rights. This Contract does not, and is not intended to impair, divest, delegate, or contravene any constitutional, statutory, and/or other legal right, privilege, power, obligation, duty, or immunity of the HCMA.

8.9. Force Majeure. Notwithstanding any other term or provision of this Contract, neither Party shall be liable to the other for any failure of performance hereunder if such failure is due to any cause beyond the reasonable control of that Party and that Party cannot reasonably accommodate or mitigate the effects of any such cause. Such cause shall include, without limitation, acts of God, fire, explosion, vandalism, any law, order, regulation, direction, action, or request of the United States government or of any other government, national emergencies, insurrections, riots, wars,

strikes, lockouts, work stoppages, or other labor difficulties. Reasonable notice shall be given to the affected Party of any such event. The Contractor is expected, through insurance or alternative temporary or emergency service arrangements, to continue its obligations under this Contract in the event of a reasonably anticipated, insurable business risk such as business interruption and/or any insurable casualty or loss.

8.10. Conflict of Interest. Pursuant to Public Acts 317 and 318 of 1968, as amended (MCL 15.321, et seq.), no contracts shall be entered into between the HCMA, including all agencies and departments thereof, and any HCMA Agent. To avoid any real or perceived conflict of interest, Contractor shall identify any Contractor Employee or relative of Contractor's Employees who are presently employed by the HCMA. Contractor shall give the HCMA notice if there are any HCMA Agents or relatives of HCMA Agents who are presently employed by Contractor.

8.11. Contract Administrator. Each Party shall designate an employee or agent to act as Contract Administrator. The HCMA's Contract Administrator shall be responsible for such activities as monitoring deliverables and funding addressing the quality of services provided by the Contractor, reviewing invoices and submitting requests to the HCMA's procurement authority for any contract modification. The Contract Administrators for both Parties shall serve as a contact point for all matters related to the services to be performed under this Contract.

8.12. Dispute Resolution. All disputes arising under or relating to the execution, interpretation, performance, or nonperformance of this Contract involving or affecting the Parties may first be submitted to the respective Contract Administrators for possible resolution. The Contract Administrators may promptly meet and confer in an effort to resolve such dispute. If the Contract Administrators cannot resolve the dispute in five (5) business days, the dispute may be submitted to the signatories of this Contract or their successors in office. The signatories of this Contract may meet promptly and confer in an effort to resolve such dispute. Before litigation is commenced by either Party regarding Claims arising under this Contract, the Parties shall use their best efforts to mediate such Claims. All costs for mediation shall be borne equally by the Parties. The Parties shall mutually agree to the mediator.

8.13. Access and Records. The Contractor shall establish and maintain a reasonable accounting system that enables HCMA to readily identify Contractor's assets and Gross Receipts of the Services provided under this Contract, including but not limited to: a full and accurate books of accounts, cash receipts, and other pertinent data customarily used in Contractor's type of operation, showing Contractor's activities under this Contract. The Contractor shall only utilize those recording keeping devices, including without limitation, cash registers, tapes, books, ledgers, journals, sale slips, guest checks, invoices, and cash register maintenance logs which are reasonably acceptable to the HCMA and by which every sale or other transaction related to sundry sales and services are recorded. Contractor will maintain accurate books and records in connection with the Services provided under this Contract for thirty-six (36) months after end of this Contract, and provide the HCMA with reasonable access to such book and records.

8.14. Delegation /Subcontract/Assignment/Sublease. Contractor shall not delegate, assign, sublease or subcontract any obligations or rights under this Contract without the prior written consent of the HCMA.

8.14.1. The rights and obligations under this Contract shall not be diminished in any manner by assignment, delegation, sublease or subcontract.

8.14.2. Any assignment, delegation, sublease or subcontract by Contractor and approved by the HCMA, must include a requirement that the assignee, delegee, or subcontractor will comply with the rights and obligations contained in this Contract.

8.14.3. The Contractor shall remain primarily liable for all work performed by any subcontractors. The Contractor shall remain liable to the HCMA for any obligations under the Contract not completely performed or improperly performed by any Contractor delegee or subcontractor.

8.14.4. Should a Subcontractor fail to provide the established level of service and response, the Contractor shall contract with another agency for these services in a timely manner. Any additional costs associated with securing a competent subcontractor shall be the sole responsibility of the Contractor.

8.15. No provision in this Contract limits, or is intended to limit, in any way the Contractor's right to offer and provide its services to the general public, other business entities, municipalities, or governmental agencies during or after the term of this Contract. This Contract is not an exclusive contract and HCMA may contract with other vendors or contractors to provide the same or similar services at the Facility or other facilities under the jurisdiction of HCMA.

8.16. No Implied Waiver. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any right or remedy under this Contract shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Contract. No waiver of any term, condition, or provision of this Contract, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Contract. No waiver by either Party shall subsequently affect its right to require strict performance of this Contract.

8.17. Severability. If a court of competent jurisdiction finds a term, condition, or provision of this Contract to be illegal or invalid, then the term, condition, or provision shall be deemed severed from this Contract. All other terms, conditions, and provisions of this Contract shall remain in full force and effect. Notwithstanding the above, if Contractor's promise to indemnify or hold the HCMA harmless is found illegal or invalid, Contractor shall contribute the maximum it is permitted to pay by law toward the payment and satisfaction of any Claims against the HCMA.

8.18. Captions. The section and subsection numbers, captions, and any index to such sections and subsections contained in this Contract are intended for the convenience of the reader and are not intended to have any substantive meaning and shall not be interpreted to limit or modify any substantive provisions of this Contract. Any use of the singular or plural number, any reference to the male, female, or neuter genders, and any possessive or nonpossessive use in this Contract shall be deemed the appropriate plurality, gender or possession as the context requires.

8.19. Notices. Notices given under this Contract shall be in writing and shall either be personally delivered, sent by express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given when one of the following occur: (1) the date of actual receipt; (2) the next business day when notice is sent express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

8.19.1. If notice is sent to the Concessionaire, it shall be addressed to:

John Blevins
Motor City Canoe Rentals, L.L.C
24500 Goddard Road
Taylor, MI 48180
(313) 473-9847

8.19.2. If notice is sent the HCMA, it shall be addressed to:

Amy McMillan, Director
Huron-Clinton Metropolitan Authority
13000 High Ridge Drive
Brighton, MI 48114-9058
Tel: (810) 227-2757
Fax: (810) 225-6212
Email address: amy.mcmillan@metroparks.com

8.19.3. Either Party may change the address or individual to which notice is sent by notifying the other party in writing of the change.

8.20. Contract Modifications or Amendments. Any modifications, amendments, rescissions, waivers, or releases to this Contract must be in writing, agreed to by both Parties, and added as a change order or amendment to this Contract.

8.21. Precedence of Documents. In the event of a conflict between the terms and conditions in any of the documents comprising this Contract, the conflict shall be resolved as follows:

8.21.1. The terms and conditions contained in this Contract shall prevail and take precedence over any allegedly conflicting provisions in all other Exhibits or documents.

8.22. Governing Laws/Consent to Jurisdiction and Venue. This Contract shall be governed, interpreted and enforced by the laws of the State of Michigan. Except as otherwise required by law or court rule, any action brought to enforce, interpret, or decide any Claim arising under or related to this Contract shall be brought in the 44th Judicial Circuit Court of the State of Michigan (Livingston County), the 53rd District Court of the State of Michigan, or the United States District Court for the Eastern District of Michigan, Southern Division, as dictated by the applicable jurisdiction of the court. Except as otherwise required by law or court rule, venue is proper in the courts set forth above. The choice of forum set forth above shall not be deemed to preclude the enforcement of any judgment obtained in such forum or taking action under this Contract to enforce such judgment in any appropriate jurisdiction.

8.23. Entire Contract. This Contract represents the entire Contract and understanding between the Parties. This Contract supersedes all other prior oral or written understandings, communications, agreements or Contracts between the Parties. The language of this Contract shall be construed as a whole according to its fair meaning, and not construed strictly for or against any Party.

8.24. HCMA Intellectual Property. Contractor shall have no copyright, patent, trademark or trade secret rights in HCMA Intellectual Property.

8.25. Contractor Use of HCMA Servicemark.

8.25.1. The HCMA grants Contractor the non-exclusive right to use its servicemark on publications (in any format) related to or associated with performance of this Contract. Permission to use the servicemark extends to use on the Contractor's website.

8.25.2. Contractor shall only use the servicemark as provided by HCMA for the purposes described in this Contract and not for any other purpose.

8.25.3. Contractor acknowledges that the HCMA has certain rights in the servicemark and that Contractor has no right, title or interest in the servicemark.

8.25.4. The servicemark covered under this Section shall be provided at no cost to Contractor.

8.25.5. Contractor's permission to use the servicemark shall cease when the entire Contract is terminated and/or cancelled. Immediately upon termination and/or cancellation of this Contract, Contractor shall not display or depict the servicemark on its website or display, distribute or create any publication (in any format) or display, distribute or create other items that contain the servicemark.

The undersigned executes this Contract on behalf of Contractor and the HCMA, and by doing so legally obligates and binds Contractor and the HCMA to the terms and conditions of this Contract.

[Signatures on next page]

MOTOR CITY CANOE RENTALS L.L.C

BY: _____ DATE:_____
John Blevins

John Blevins, Motor City Canoe Rentals, L.L.C appeared in person before me this day and executed this Contract on behalf of Contractor and acknowledged to me under oath that he has taken all actions and secured any and all necessary approvals and authorizations and has the requisite authority from Contractor to fully and completely obligate and bind Contractor to the terms and conditions of this.

Subscribed and sworn to before me on this _____day of _____, 2019.

_____

Notary Public, State of _____,

_____ County

My Commission Expires:_____

Acting in the County of _____

FOR THE HCMA:

BY: _____ DATE: _____
Amy McMillan, Director

EXHIBIT I
CONTRACTOR INSURANCE REQUIREMENTS

The Contractor shall provide and maintain, at their expense, all insurance as set forth below, protecting the HCMA against any Claims, as defined in this Contract. The insurance shall be written for not less than any minimum coverage herein specified.

1. **Commercial General Liability** Occurrence Form including: a) Premises and Operations; b) Products and Completed Operations (including On and Off Premises Coverage); c) Personal and Advertising Injury d) Broad Form Property Damage e) Independent Contractors; f) Broad Form Contractual including coverage for obligations assumed in this contract;

   $1,000,000 – Each Occurrence Limit
   $1,000,000 – Personal & Advertising Injury
   $1,000,000 – Products & Completed Operations Aggregate Limit
   $2,000,000 – General Aggregate Limit
   $ 500,000 – Fire Damage Limit (Any One Fire)

2. **Workers' Compensation** insurance with limits statutorily required by any applicable Federal or State Law and Employers Liability insurance with limits of no less than $500,000 each accident, $500,000 disease each employee, and $500,000 disease policy limit.

3. **Commercial Umbrella/Excess Liability** insurance with a minimum limits of $3,000,000 each occurrence. Umbrella or Excess Liability coverage shall be no less than following form of primary coverages or broader. The Umbrella/Excess Liability policy must also include and must be in excess of Liquor Liability coverage.

4. **Liquor Liability** insurance with a limit of $1,000,000 each occurrence; $1,000,000 annual aggregate.

5. **Commercial Property** insurance. The Contractor shall be responsible for obtaining and maintaining insurance covering their equipment and personal property against all physical damage.

6. **General Insurance Conditions:** The aforementioned insurance shall be endorsed, as applicable, and shall contain the following terms, conditions, and/or endorsements. All certificates of insurance shall provide evidence of compliance with all required terms, conditions and/or endorsements.

   a. All policies of insurance shall be on a primary, non-contributory basis with any other insurance or self-insurance carried by the HCMA;
   b. The insurance company(s) issuing the policy(s) shall have no recourse against the HCMA for subrogation, premiums, deductibles, or assessments under any form;
   c. Any and all deductibles or self-insured retentions shall be assumed by and be at the sole risk of the Contractor;
   d. All policies, with the exception of Workers' Compensation, shall be endorsed to name the HCMA as additional insured;
   e. All policies shall be endorsed to provide a written waiver of subrogation in favor of HCMA;
   f. The Contractor shall require their contractors, or sub-contractors not protected under the Contractors insurance policies, to procure and maintain insurance with coverages, limits, provisions, and/or clauses equal to those required in this Contract;
   g. Certificates of insurance must be provided no less than ten (10) working days prior to commencement of contract and must bear evidence of all required terms, conditions and endorsements; and
   h. All insurance carriers must be licensed and approved to do business in the State of Michigan and shall have and maintain a minimum A.M. Best's rating of A.

To: Board of Commissioners
From: Jay Bibby, Interim Chief of Planning and Development
Project Title: Report – Planning and Development Department Update
Date: December 3, 2021

Action Requested: Receive and file

That the Board of Commissioners receive and file the Planning and Development Department Monthly Update as recommended by Interim Chief of Planning and Development Jay Bibby and staff.

Background: The following are highlights of the activities of the Planning and Development Department for December 2021:

Project/Initiative Implementation
- Construction completed with the Woods Creek Playground at Lower Huron Metropark and open for the public.
- Feasibility study connection between Huron Meadows and Island Lake Rec Area continuing stakeholder outreach to review the preferred route prior to preliminary engineering design phase.
- Shelden Trails mapping and signage of ski trails and intersection numbering underway.
- ETC Institute draft survey for the Five-Year Community Recreation Plan underway. BOC subcommittee will have an opportunity to review draft of survey questions.

Planning & Community Engagement
- FAIR Play Coalition input meeting on accessible wheelchairs awarded through NEEF Toyota grant.
- Kensington Master Plan Five-Year Update steering committee meeting no. two and public review on website.

Programming
- Disc golf signature event meeting for 2022 signature event at Hudson Mills.

Land Issues
- Stony Creek Metropark easement request underway. Mound Road north of fire station sidewalk easement being proposed by Washington Township for gap in township non-motorized plan. Survey and engineering plans being developed by township consultants.

Grants
- 2021 MNRTF grant submittals decided on Dec. 1.
- EDA Travel, Tourism, and Outdoor Recreation Grant application being pursued with a Jan. 31, 2022 deadline.
- NOAA dam removal (Flat Rock dam and HUROC dam) feasibility study grant being pursued with a Jan. 12, 2022 deadline.

Attachment: Planning and Development Department Monthly Update

7-j-1

PLANNING AND DEVELOPMENT MONTHLY REPORT

December 2021

Administrative Office
13000 High Ridge Drive
Brighton, MI 48114

HURON-CLINTON METROPARKS

METROPARKS.COM

TABLE OF CONTENTS

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OTHER DEPARTMENT INPUT KEY	
	Natural Resources and Regulatory Compliance
	Planning and Development
	Diversity, Equity and Inclusion
	Interpretive Services and Community Outreach
	Engineering

SYSTEM-WIDE

Restoration – Linear feet or acreage of project impact for shoreline protected or restored, wetlands protected or restored, floodplain protected or mitigated
Invasive Species Management – Linear feet or acreage of project impact treating invasive species
Habitat and Wildlife Protected – Linear feet or acreage of project impact for fish habitat, fish barriers removed or bypassed, species moved or avoided
Partnerships – Outside agency funding sources (total cost/sharing percentage)
Volunteers – Total number of volunteers/workdays
Grant/Foundation Funding – Total funding/match
Visitor Counts – Total number of visitors weekend/weekday
Best practices education – Project emphasizes educational and interpretational opportunities
Estimated cost – Total estimated or actual cost of project
Accessibility – Determine if facility or programs designed for accessibility (A) or if barriers (B) exist based on ADA checklist
Staff time – Total number of staff hours estimated

Administrative

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
SYSTEMWIDE	Planning and Development monthly reports	Report		Monthly	Staff time	Report assembly,
	Tollbooth scanning reports	Report		Monthly	Staff time	Ongoing
	Foundation administrative tasks	Various		Ongoing	Staff time	Administrative tasks, scheduling annual board meeting.
	Sign request processing/signage transition plans	Infrastructure/ Small Facilities		Ongoing	Actual cost	Administrative tasks
	CAPRA accreditation preparation	Report	Various	Ongoing	Staff time	P&D support provided for all Chapter Chairs
	FAIR Play Coalition maintenance and development	Various		Ongoing	Volunteers	Consultations on projects, committee meeting scheduled for Oct. 6
	Agency/org partnership maintenance and development	Various	Various	Ongoing	Staff time	Regional survey coordination with partners for 5-Year Community Rec Plans
	CAPRA Programming Ch. 6	Various		Ongoing	Staff time	Documentation assembly
	CAPRA Planning Ch. 2	Report		Ongoing	Staff time	Documentation assembly
	Commemorative trees and benches	Various		Ongoing	Staff time	Administrative tasks

SYSTEM-WIDE

HCMA Studies/Initiatives

Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Volunteer Management	Plan		Spring 2021	Staff time	Scheduled FAIR Play Coalition input meeting to discuss accessible features for beach wheelchairs purchased through NEEF grant
Community Recreation Plan 5-County SE Michigan survey	Plan		Ongoing	Staff time/Consultant	ETC drafting survey questions for Community Recreation Plan and subset of questions for HCMA employment targeting teenagers/young adults. BOC sub-committee scheduled for review in December.
Sustainability Plan projects coordination	Various		Ongoing	Various	CAPRA Sub-Committee working on sustainability policy standards
Trail Ambassador program	Report		August	Staff time	Working with marketing to launch officially in spring 2022
ADA Transition Plan	Plan		Ongoing	Staff time	Action items updated in plan related to accessible walkway and picnic shelter improvements.
Visitor count program	Various		Ongoing	Staff time	3 temporary pedestrian/bicycle counters installed at Willow, Kensington, Dexter-Huron decommissioned for 2021 season. Permanent counter installed at LSC continue.
Visitation data documentation and analysis	Report		Ongoing	Staff time	Cross-department Summary submitted to December BOC packet. .
Interpretive Master Plan demographic and other data analysis	Report		Ongoing	Staff time	Support for Interpretive Services staff for interpretive plan development

Grants/Fundraising

Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
REI Grant Rouge Park	Plan		Ongoing	Staff time	Discussions underway to have materials be provided by HCMA for City of Detroit to design/install a gravel parking lot.
NEEF Beach Wheelchairs	Plan		Ongoing	Staff time	Funding received; grant agreement executed; waiting on check
GOAL- Various grant opportunities	Plan		Ongoing	Staff time	Requesting funds for GOAL school programs for 2021-22 school year

SYSTEM-WIDE

Recreation Programming

Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
2021 Recreation Programming	Various		On going	Staff time	Budget completed for 2022.
Programming Evaluation	Various		On going	Staff time	Ongoing
Swim program development plan (SE Michigan region)	Plan & Program		Fall 2021	Consultant Report	Consultants compiling goals and objectives following stakeholder meeting in November.

Project Implementation/Oversight

Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
PNC Grant	Documentation		Ongoing	Check received	Applications coming in at steady pace; about 40% of programs awarded
EGLE Recycling Bin Grant	Plan	Various	May 2021	Staff time	Audits of recycling bins for contamination ongoing
Healthy Catalyst Paddling Accessibility	Implementation	Various	Ongoing	Staff time	Grant reporting
Nature tail wayfinding sign development	Implementation	Various	Ongoing	Staff time	Met with new Int. Supervisor to update on project progress, data downloaded from pedestrian counter and remains in place. Draft plan in progress
ESRI ArcGIS Administration	Documentation	Various	Ongoing	Staff time	GIS desktop applications to be prioritized for project work plan in 2022.
Park maps in ArcGIS	Documentation	Various	Ongoing	Staff time	Indian Springs Metropark map addressing final review comments by staff

SOUTHERN DISTRICT

Ribbon cutting at North Fishing Site at Lower Huron Metropark

SOUTHERN DISTRICT

Grants/Fundraising

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
LEr	2021 TF- Cherry Island Trail Improvements	Large Facilities		April 2021	Staff	Final score high; anticipate funding decision by MNRTF on 12/1/21.
LHu	2021 GLRI-EPA Nonpoint Source Grant	Large Facilities		Ongoing	Staff time	Partnering with Wyandot to perform ecological restoration at Six Points and SWMP green infrastructure improvements at LEr.; Notification expected in early December
LHu	2020 TF - LHu Iron Belle Trail Connector	Documentation	Various	2021.	Staff time	Project agreement complete. Design engineering in progress with 2019 DNR IBT grant funds
LHu	2020 LWCF - Walnut Grove Campground	Documentation	Various	2021	Staff time	Waiting on NPS Project Agreement, to be executed
LHu	2020 LWCF - Off-Leash Dog Area	Documentation	Various	2021	Staff time	LWCF grant recommended for funding. Entering Project Agreement, additional documentation provided

Project Implementation/Oversight

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
LHu	2018 LWCF - LH North Fishing Site	Large Facilities		Ongoing	Staff time	Preparing final report documentation for reimbursement check
LHu	2019 IBT funding	Design		Sept 2021	Completed design engineering	Nearly complete- balance of grant funding to be used towards field engineering of IBT
LHu	Woods Creek Playground	Large Facilities	Various	2021 Completion	Construction	Construction completed and open to the public..
Wil	SE Michigan Resilience Fund-Big Bend Area Restoration	Large Facilities	Eng/NR	Ongoing	Staff	RFP for design & construction of in-stream improvements being prepared. Out of stream SESC Plan completed, permit pending.

SOUTHERN DISTRICT

Project Implementation/Oversight, cont.

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
LEr	2019 LWCF - Oakwoods Accessible Nature Trail	Large Facilities		Ongoing	Staff time	Project Agreement executed by DNR/NPS
LEr	2019 LWCF - Lake Erie Accessible Boat/Kayak Launch	Large Facilities		1 month	Staff time	SHPO response requested a phase 1 archaeological study before providing a project agreement. Commonwealth Associates contracted for archaeological survey..

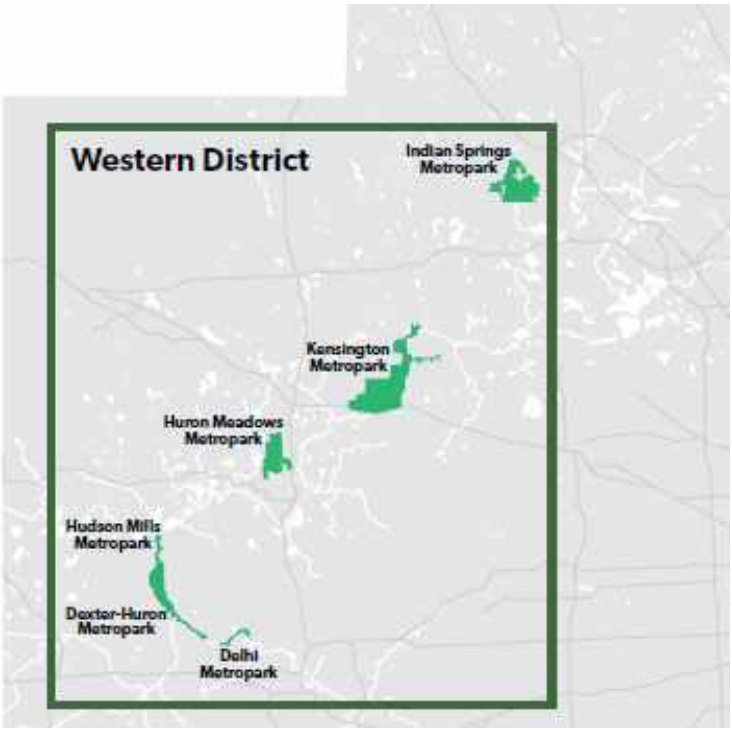
Facility Concept Planning

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Wil	Willow Acorn Knoll Disc Golf Course	Small Facilities	Ops / Maint.	August	Staff time	Concept design completed to convert the course from a short 24-hole course to a longer 18-hole course with 6 additional practice baskets.
LEr	Laker Erie Shoreline Restoration Project	Spoil Pile Location	Ops . NR	October	Staff time	Assisting the NR Department on the location of 9,000 CY of spoils resulting from their grant project. A location south of the Cattail Picnic Shelter and a location at the Bean Field approved by staff.

HCMA Studies/Initiatives

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
LEr	Marina building study	Large Facilities		2021	Consultant	Draft report underway with staff and user engagement to assist in recommendations

WESTERN DISTRICT



WESTERN DISTRICT

Administrative

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Del	Border-to-Border trail design and construction	Large Facilities		Ongoing	Estimated Cost	Washtenaw County leading design efforts; attendance at meetings as necessary
	Skip's Livery relocation	Large Facilities		Ongoing	Consultant fee	Decision has been made to leave Livery operations where they are currently located. Patrons will continue to park at East Delhi.
MISC	Livingston County Parks and Open Space Advisory Committee	Partnership		Ongoing	Staff time	Attendance at regular POSAC meetings. Trail counter in place at Fillmore County Park. Data downloaded monthly
	Friends of the Lakelands Trail Steering Committee	Partnership		Ongoing	Staff time	Represent HCMA as a participating steering committee member that meet monthly

Grants/Fundraising

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Del	2021 TF – Accessible Takeout Development	Large Facilities		2021	Staff time	Decision made to withdraw the grant proposal this year. Project will be resubmitted next year with modifications made to the existing Skip's building area and with connections made to the East Delhi accessible parking areas.

WESTERN DISTRICT

Project Implementation/Oversight

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Ken	2019 TF West Boat Launch Accessible Launch Project	Large Facilities		Ongoing	Staff time	Permits received, design comments addressed for re-submittal to DNR for approval.
HMills	2019 TF Rapids View Accessible Launch Project	Large Facilities		Ongoing	Staff time	Plans, specs, and bid documents submitted to DNR MiGrants
DHu	2020 TF – Dex-Huron Accessible Launch	Large Facilities		Ongoing	Staff time	Project agreement executed; survey completed and design underway
HMe	Feasibility study for connection between Huron Meadows & Island Lake Rec Area	Plan		June 2021	Staff time	Preferred route based on scoring methodology reviewed by staff, public/stakeholder engagement ongoing.

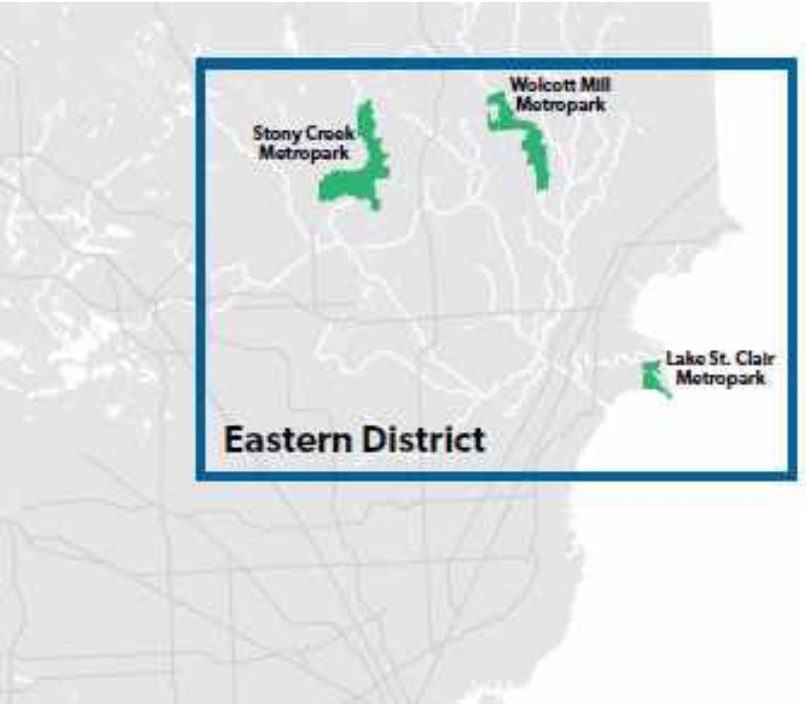
Facility Concept Planning

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Ken	Kensington Nature Center Parking Lot and Accessibility Improvement Study	Large Facilities		August	Staff time	Concept plan completed

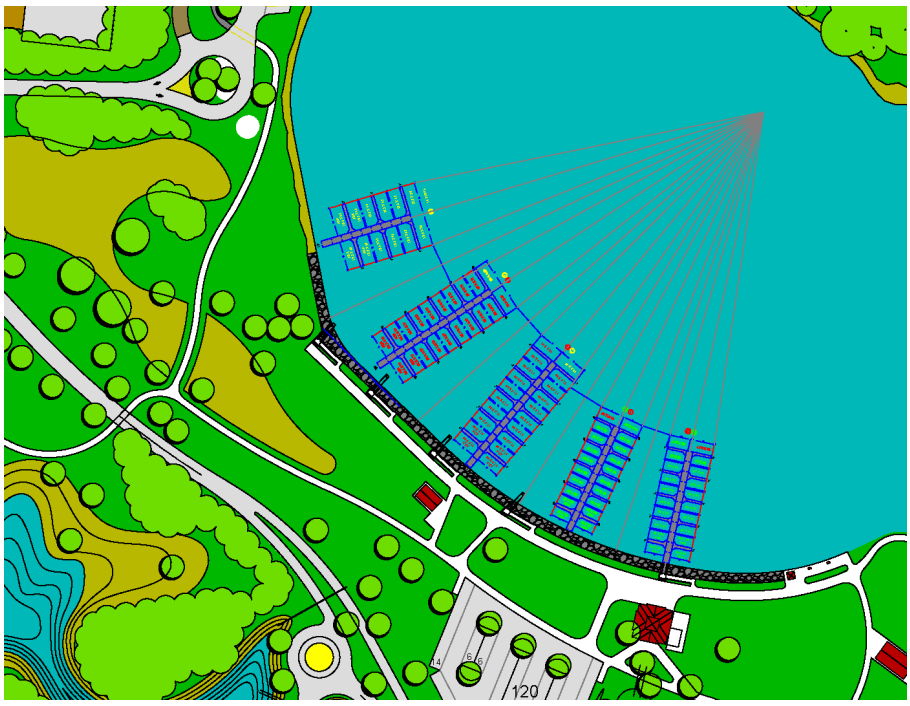
HCMA Studies/Initiatives

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
Ken	Kensington Master Plan 5-Year Update	Plan	Various	2021	Staff time	Draft master plan 5-year update posted on website and submitted for Board approval at BOC December meeting.

EASTERN DISTRICT



Lake St. Clair North Marina improvements to be pursued with EDA grant submittal due in January, 2022



EASTERN DISTRICT

Administrative

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
WMill	Schmidt Property Acquisition	Land Acquisition		Fall 2020	Acquisition	Working on demolition of deteriorated barns and other structures on site.

Grants/Fundraising

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
SCr	2021 LWCF- Stony Creek Reflection Trail Accessible Trail Development	Small Facilities		April 2021	Staff time	Approved purchase order with Commonwealth Associates for a phase 1 archaeological study required for SHPO clearance
LSC	Michigan Coastal Management Program Grant – Accessible Kayak Launch	Large Facilities	Various	Ongoing	Staff time	Waiting on final grant agreement – resolution will go to board for approval at December BOC meeting.

Project Implementation/Oversight

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
LSC	Transit Planning for Access to LSC	Large Facilities		2021 Completion	Consultant/Staff	Metropark Express launched to continue through 2022. Strategy in progress with SMART for continued marketing efforts and data reporting/analysis
	LSC Beach Restoration Project- Nonpoint Source Pollution Project	Large Facilities		2023 Completion	Staff time	Bird count surveys completed for 2021 near the end of November, 2021.
	Nature Trail wayfinding signage plan development	Small Facilities		July	Staff time	Development of a wayfinding plan for the nature trail system as a guide to update trail signage
SCr	Shelden Trails Redevelopment	Large Facilities		Ongoing	Staff time	Trail work complete on all loops. Bridge to be installed shortly on the north connector trail
	2019 TF – Off-leash Dog Area Development	Large Facilities		Ongoing	Staff time	Contractor work completed.Mesh fencing and signs to be delivered for spring 2022.

EASTERN DISTRICT

Project Implementation/Oversight, Cont.

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
SCr	Shelden Trails Signage Plan	Small Facilities	Mkting	3 months	Staff time	Mapping and signing of ski trails and intersection numbers underway
	26 Mile Connector Trail TAP Grant	Large Facilities		2022 Completion	Staff time	Bids received by Macomb County Dept of Roads and are within budget.
	Mound Rd. north of fire station sidewalk easement	Small Facilities		2022 Completion	Staff time	Survey and design underway by Washington Township

Recreation Programming

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
	Planning for LSC swim lessons in 2022	Programming		2022	Staff time	Budget and job descriptions completed

HCMA Studies/Initiatives

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
SCr	Stony Creek Master Plan 5-Year Update	Plan	Various	2021	Staff time	Plan approved by BOC at Oct. 14th meeting, combined update and plan being added to HCMA website

Facility Concept Planning

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	December 2021 Actions
SCr	Banquet tent area at Boat Launch	Conceptual Plan		December	Staff time	Alternative site locations and features being considered. The current banquet tent location, Baypoint Beach, and the boat launch area site are all being considered. Concept plans to be developed by Dec..

WHAT'S NEXT?

	Description	Action Type
SYSTEM WIDE	CAPRA documentation assembly	Staff time
	5-Year Community Recreation Plan survey draft	Staff time/consultant
	Eco Counter 2022 Summary Report	Staff time
	Park Maps in ArcGIS Online	Staff time
	GIS files updated for Factory Detroit for regional map update	Staff time
	NOAA Grant Dam Removal Feasibility Study Grant	Staff time
	MNRTF Grant Selections for 2022	Staff time
EASTERN DISTRICT	EDA Travel, Tourism, and Outdoor Recreation Grant Underway: North Marina	Staff time
	Programming Evaluations	Staff time
WESTERN DISTRICT	Programming Evaluations	Staff time
SOUTHERN DISTRICT	Programming Evaluations	Staff time
	LHU Iron Belle Trail design engineering	Consultant/Staff time
	Lower Huron Master Plan 5-Year Update	Staff time

HURON-CLINTON METROPARKS

Grant Updates - December 2021

In Progress

Grant program	JV/MN	Project/Park	Amount	Match	Due Date	Applicant	Notes
NOAA GLs Fish Habitat Restor.	JV/MN	Flat Rock Dam Feasibility	TBD	TBD	1/12/2022	GLFC	Preparing project details and partnership expectations
DNR TF '22	MN	Delhi Take-out Renovation	TBD	TBD	4/1/2022	HCMA	Reworking of plan proposed for '21
EDA - SEMCOG	JV	LSC North Marina	TBD		1/31/2022	HCMA	Forming work plan and scope of work
RCWJ Foundation	JV	Trail Connectors/SEMTAT	TBD	TBD	TBD	MF	Need further direction

Grant Applications Awaiting Response

Grant program	JV/MN	Project/Park	Award Amt	Match	Submitted	Applicant	Notes
DNR TF '21	MN	LE Cherry Island Trail	$300,000	$192,500	3/31/2021	HCMA	Final score high; anticipate funding; decision 12/1/21
GLRI-EPA Nonpoint Source	MN	OHM Stormwater Report GI	$483,500	$174,300	8/20/2021	HCMA	Wyandot is partnering; match is all in-kind; awards made in Nov.
NEEF-Toyota	MN	Beach Wheelchairs	$20,000	~$5,000	8/31/2021	HCMA	Awarded; project agreement accepted; waiting on check
LWCF '21	JV	Stony Creek Reflection Trail	$465,600	$465,600	4/1/2021	HCMA	Final scores released, decision pending 12/1/21

Grant Administration

Grant program	Mgmt	Park/Project	Award Amt	Match	Deadline	Applicant	Updates
LWCF '18	MN/JK	LH North Fishing Site	$144,400	$144,400	4/30/2022	HCMA	Preparing final report and reimbursement documentation
GLRI-FS '18	MN/TM	LSC Black Cr Shoreline	$160,211	-	12/31/2022	HCMA	Construction underway; to be completed this winter
I-100 '18	MN/PB	KFC Seeding Green Future	$90,000	-	11/7/2021	MF	Requesting 1-yr extension; funds reallocated to garden STEM classroom
MNRTF '19	MN/JK	HMI Rapids View Launch	$226,400	$226,900	8/31/2022	HCMA	Design complete; design/RFP approved by DNR; preparing to go to bid
LWCF '19	MN/AS	Oak Access. Nature Trails	$124,000	$124,000	2/29/2024	HCMA	Project Agreement executed; design work added to eng. schedule
LWCF '20	MN/?	LH WGr Campground	$300,000	$150,000	TBD	HCMA	Waiting on NPS agreement
MNRTF '20	MN/KE	DxH Accessible Launch	$192,700	$192,800	5/31/2023	HMCA	Survey complete; design in progress
Ford Volunteer Corps '20	MN/KK	Oak Prairie Plantings	$4,000	-	11/30/2021	MF	Half of native plugs planted; remaining will be planted spring '22
4CCF '19	MN/JJ	SC & Wol	$24,000	-	Covid extensior	HCMA	SC invoices complete; WFC Wagon on order
NFWF-SEMRF '21	MN/TM	Wil Big Bend Area Restoration	$250,000	$177,859	6/30/2023	HCMA	RFPs in progress
CFSEM Design and Access '20	MN/JB	Feasibility study US-23 bridge	$47,000	-	4/22/2022	MF	PEA Group connecting w/MDOT; preparing documents
Ford Volunteer Corps '21	MN/KK	Wolcott Raised Garden Beds	$7,500	-	11/30/2021	MF	Ford vols. built 20 beds; unspent $ to be used for new fences & ADA bed
PNC '21	MN/JJ	W. MLC Early Childhood Educ.	$5,000	-	6/25/2022	MF	Lower tech costs allowing for expansion; ~ 70% of programs awarded
Towsley Foundation '21	MN/JJ	GOAL	$5,000	-	12/31/2022	MF	Classes continue to be scheduled; 8 held-to-date
Anonymous Foundation '21	MN/JJ	GOAL	$10,000	-	7/31/2022	MF	Classes continue to be scheduled; 8 held-to-date
NEEF-Toyota '21	MN/KK	Beach Wheelchairs	$20,000	~$5,000	10/31/2022	HCMA	Working with FAIR-Play Coalition on chair recommendations
DNR Iron Belle Trail	V/NK/MI	LH IBT Design Engineering	$82,075	$23,400	9/1/2021	HCMA	Plans nearly completed, being reviewed by engineering
MNRTF '19	JV/AS	Ken West Boat Launch Dev	$154,000	$154,000	8/31/2022	HCMA	Making slight revisions to plans for DNR approval
LWCF '19	JV	LE Kayak Launch	$122,500	$122,500	rs from proj agı	HCMA	Phase I archaeological study underway; waiting for report
MNRTF '19	JV/JK	SC Off Leash Dog Area	$50,000	$88,500	8/31/2022	HCMA	Construction begun; ongoing dialog on signs, rules, & other amenities
TAP Grant	JV/JK	SC 26-Mile Connector Trail	$214,455	$43,000	12/31/2021	Macomb Co	MDOT selected contractor, waiting for update from Macomb County

Ralph C. Wilson Jr. Foundation	JV	Southern District	$2,682,755	-	??	MF	First payments received
REI	JV/KK	Rouge Park Prairie	$10,500	-	12/31/2021	HCMA	Signs delivered, footbridge construction complete
EGLE Non point source	JV/NK	LSC Beach	$300,000	$100,000	12/31/2023	HCMA	Awarded; project agreement accepted; check received
SEMCOG Transportation Equity	JV/NK	LSC Planning	$32,740	$7,260	10/31/2021	Harrison Tw	Grant is completed, pilot project ongoing through Sept 2022.
EGLE - Recycling	JV/JB	Western & Southern Districts	$48,816	$12,204	9/29/2023	HCMA	2nd report sent; remaining funds to be used towards extra recycling bins
MNRTF '20	JV	LH IBT	$300,000	$416,766	6/1/2023	HCMA	Engineering reviewing PEA's design plans
LWCF '20	JV	LH Off-Leash Dog Area	$165,400	$165,400	~ Summer 2023	HCMA	Depends on timing for project agreement
Healthy Catalyst	JV	Adaptive Kayak equipment	$2,950	$0	10/30/2020	HCMA	$166 left to spend. Trained Kensington staff on 8/6
REI	JV	Rouge Park Prairie	$8,000	TBD	5/4/2021	MF	Waiting on the city for further direction
NOAA/Great Lakes Commission	JV/TM	Lake Erie Shoreline Restoration	$1,449,609	$135,194	extended by	HCMA	More arch. work to be done before construction
Renew MI - DRFC	JV	DRFC	$1,000,000	N/A	4/30/2021	HCMA	HCMA acting as fiduciary for DRFC
MCMP	JV	LSC Accessible Launch	$194,863	$194,863	12/18/2020	HCMA	Grant agreements going to board in Dec; site mtg. on fencing

To: Board of Commissioners
From: Danielle Mauter, Chief of Marketing and Communications
Subject: Report – November Marketing Update
Date: December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file November 2021 Marketing Report as recommended by Chief of Marketing and Communications Danielle Mauter and staff.

Attachment: Marketing Report

HURON-CLINTON METROPARKS MARKETING REPORT

November 2021

Administrative Office
13000 High Ridge Drive
Brighton, MI 48814

HURON-CLINTON METROPARKS

METROPARKS.COM

NOVEMBER 2021

November Recap

2022 Annual Pass Campaign

annual passes went on sale Nov. 1. A variety of communication pieces were created and sent to promote sales including:

- Signage for toll booths
- radio ads and pass giveaways. Running on a total of 10 stations.
- Digital/social ads
- Organic social media posts through the end of the year
- Print ads in 13 various publications including a multi-page insert in the Michigan Chronicle
- Press release on Nov. 1
- Mentioned on DABO radio and TV interviews
- Website graphic on new homepage
- Series of email blasts and “ads” in event email blasts as well

North Fishing Site Ribbon Cutting

In November we cut the ribbon on the North Fishing Site redevelopment at Lower Huron Metropark. A small crowd joined us to mark the occasion and the story was picked up by a few local newspapers.

Swim in the D Media Event

Working with our partners at the Detroit Riverfront Conservancy and the city of Detroit, we scheduled a media event to showcase the Swim in the D program. On Nov. 29, media has been invited to join us to see the program taking place and witness the excitement on kids’ faces while they learn to swim. After the event, articles will also be published on our website and e-newsletter.

Preparing for Winter and 2022

November is also the time for starting preparations of winter communication campaigns and details as we await snowfall and winter conditions. It’s also the time we look ahead to 2022 and start formulating goals and objectives for the 2022 marketing plan. A big chunk of time is also spent proofing and coordinating with multiple departments as we put together and publish programs and events for January – June 2022.

Update on Each of the 2021 Marketing Goals

1. ***Continue increasing awareness and understanding of the Metroparks brand and identity***
    - Ongoing goal. Small signs of improvement can be seen by increases in attendance and engagement on social and mainstream media.

2. ***Maintain at least 20 percent of the attendance increase that was seen in 2020 as measured by overall car counts. This will result in a total of 3,028,358 vehicles through the gates in 2021.***
    - Car counts continue to be higher than average. Actual numbers are provided in the board stats at the end of the packet. At the end of October, total car count YTD was 3,209,932. **We have met and surpassed this goal**, which means we were able to retain more than 20 percent of the pandemic growth we saw in 2020.

3. ***Increase 2021 annual pass sales by 5 percent to a total of 199,511 2021 annual passes sold.***
    - 2021 Annual Pass sales were 16,502 higher than 2020 sales or about an 8.68 percent increase. **We have met and surpassed this goal.**

Annual Pass Year	Total Sales (all annual pass types)
2021	206,513
2020	190,011

4. ***Collaborate with Planning and Development and Information Technology departments to establish regular reporting and evaluation of marketing performance data***
    - Marketing is monitoring the scan reports provided by Planning and Development each month. Marketing will work with Planning and Development and IT to put together a joint report to share at the December board meeting that overlays marketing placements with attendance data. Marketing will continue working with IT and planning to improve reporting and to use interim numbers to guide decision making.

5. ***Develop a more comprehensive understanding of the visitor experience of the Metroparks.***
    - Evaluation tools for public programming were finalized in March. All Eastern District programming participants began receiving automated emails through RecTrac starting April 1. These emails included links to the surveys to provide feedback on every public program. Other districts programming participants began receiving automated emails through RecTrac on May 1. This coincided with RecTrac implementation.

    - Teacher programming evaluations were implemented in October to coincide with the beginning of the new school year.

    - Evaluations from children and incentives to encourage survey completion are being discussed to continue moving the conversation forward.

6. *Increasing attendance from City of Detroit Zip codes, increase community engagement within the city of Detroit and Other Marketing and Communication Goals Established with the Detroit Riverfront Conservancy Partnership*

- Total summer park visits from city of Detroit zip codes showed a big increase in 2021. HOWEVER, a big piece of that is due to our increased scan rate of daily passes. In 2020 we were not consistently collecting zip codes from daily pass entries and therefor for comparison needed to compare annual pass scans only for the best year-over-year results comparison.

- If we look at total visits of both annual and daily passes combined in city of Detroit zip codes, we saw 21,753 summer visits (May 16 – Oct 15) in 2021 and 1,139 in 2020. If we look at Annual Pass scans for the best comparison, we did still see an increase of 458 percent. We had 5,054 annual pass visits from city of Detroit zip codes in 2021 compared to 905 in 2020.

6B. *Increase annual pass visits from city of Detroit zip codes by 20% as measured by annual pass scans.*

- The 2021 scan data will be the first year where the Metroparks have a solid base of both daily and annual pass scans. Comparison year-over-year will have to look specifically at annual pass scan comparisons as the daily pass scan data won't have a good base to compare to. If we look at Annual Pass scans for the best comparison, we did still see an increase of 458 percent. We had 5,054 annual pass visits from city of Detroit zip codes in 2021 compared to 905 in 2020. **We have met and exceeded this goal.**

7. *Increase summer attendance from underserved, equity population zip codes (as measured by daily and annual pass scans) by at least 5% as compared to 2020.*

- The 2021 scan data will be the first year where the Metroparks have a solid base of both daily and annual pass scans. Comparison year-over-year will have to look specifically at annual pass scan comparisons as the daily pass scan data won't have a good base to compare to.

- Equity population zones are classified in multiple levels, but for the purposes of this analysis we have been looking only at areas of "High" and "Very High" concentrations. What we saw in summer 2021 (May 16 – Oct 15) is as follows:

For Very High Equity Population Zones

Year	Annual Pass Scans	Percentage Change
2021	6,847	25%
2020	5,462	Initial year

For High Equity Population Zones

Year	Annual Pass Scans	Percentage Change
2021	63,245	75%
2020	36,180	Initial year

We have met and exceed this goal.

8. ***Use RecTrac and scanning data to establish a set of attendance baselines to measure against in future years.***
    - Marketing will be working with IT to set up reports to look at attendance numbers and demographics at Interpretive programs as well as annual passes, daily passes, event rentals and golf. Setting baselines is something that will be done for each season and annually. These baselines are still being evaluated and will be included as part of the 2022 Marketing Plan.

9. ***Increase Family reunions/picnics/events booked in the parks by at least 3 percent from $373,500 to at least $384,705 by end of 2021 (when it is safe to do so).***
    - Shelter Rental revenues are up over the three-year average in most parks. YTD revenues on shelters is at $513,682 as of the end of October, and that number would be higher if rental revenue from the TWAC and EDC event room are added into that number. **We have met and surpassed this goal.**

10. ***Maintain at least 20 percent of the increase in golf rounds played in 2020. This would be a total of 201,371 rounds played in 2021.***
    - Radio, social media and digital campaigns around golf started April 1. Current golf rounds are included in the board packet stats at the end of the packet. At the end of October, golf rounds were up about 25 percent over the three-year average with a total of 247,344 rounds played. **We met and surpassed this goal at the end of October and still have some November rounds to add to this number.**

11. ***Increase attendance at aquatic facilities through use of consistent messaging, special promotions, pop-up pricing and dynamic pricing (feasibility dependent on pandemic restrictions)***
    - Limited capacities have not allowed us to leverage pop-up and special pricing, but even with limited capacities and staffing struggles, aquatic facilities for the year served 187,482 visitors. The total for 2021 was 59,822 and the previous three-year average was 187,875. In total we were just under the previous three-year average attendance for these facilities and as we are able to open them up in a larger fashion, we could hope for and expect higher attendance numbers.

12. ***Increase Instagram followers by 50% over 2020 to 4,120 total***
    - Currently at 3,751 followers and growing. Working on Instagram takeovers with our partners and contest giveaways as an attempt to increase our organic audience.

13. ***Increase Facebook followers by 20% over 2020 followers from 17,573 to 21,088 followers by end of 2021***
    - Currently at 21,419 followers and growing. **We have met this goal.**

14. ***Increase average Facebook engagement by 100% to 494,592 engagements by end of 2021***
    - Year-to-date we have had 175,006 daily engaged users. This has led to approximately 299,767 engagements through Nov. 16. We will not meet this goal as written because of how Facebook changed to now calculate engagement.

15. ***Increase Instagram engagement by 20 percent to 19,033 engagements by end of 2021***
    - 16,543 engagements so far this year.

16. ***Improve marketing email metrics by cleaning up email lists, continually building utilizing RecTrac and sending more targeted and relevant messages.***

- Year-to-date we have an open rate of 21 percent and a click through rate of 8 percent. Both of which are higher than industry averages.

17. ***Maintain positive media relationships that were fostered during 2020 and continue building stronger and new relationships with media outlets.***

- In November we hosted the Ribbon Cutting at the Lower Huron Metropark North Fishing site to take place on Nov. 1 and sent the release for 2022 annual passes going on sale Nov. 1.

- The Metroparks have been nominated in the Livingston County Best of for Best Park. Kensington and Huron Meadows Metroparks are both in the top three and will be featured in the Livingston Daily special issue on Dec. 26. That is when they will announce the number 1 spot.
- Attended/hosted a media event for the Swim in the D event on Nov. 29.

18. ***Continue building library of high-quality owned images and videos utilizing a combination of local photographers and internal staff.***

- Marketing staff working with park staff to schedule future photography dates to fill gaps in current photo library. We now have a decently sized library of general summer images from the majority of parks. Work still needs to be done on programming and event photos and on a library of video clips as video grows in popularity and importance.

19. ***Outreach and relationship building – The Metroparks marketing department and/or Director will meet with at least one new group or organization per month (12 over the year). Additionally, marketing staff will bolster efforts of increasing attendance from the city of Detroit and underserved areas by creating or attending at least one additional community outreach opportunity in each of the five counties (5 in total) over the year (in addition to the previously mentioned efforts specifically with the Detroit Riverfront Conservancy).***

- Interpretive Department Outreach Interpreters have been visiting the Detroit Riverfront as part of events with the partnership agreement with DRFC. Chief of Marketing, Chief of DEI and Director have started the Crain's Leadership Academy to grow their leadership skills and style as well as to network with other in our region and across the country.

20. ***Make coordination with Human Resources department and Chief of Diversity, Equity and Inclusion to create open position campaigns part of our normal ongoing operations. Continue increasing number of qualified applicants for both seasonal and full-time job applications.***

- Continuing to work with HR to push out information about hiring as parks continue to fill open positions as well as full time positions as they are posted.

21. ***Continue working across departments to continue or complete multiple projects that were started in 2020.***

- This work is ongoing and covered in more detail in the October summary at the front end of report.

HURON-CLINTON METROPARKS

To: Board of Commissioners
From: Artina Carter, Chief of Diversity, Equity and Inclusion
Subject: Report – DEI Monthly Update
Date: December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file DEI update as recommended by Chief of Diversity, Equity and Inclusion Artina Carter and staff.

Attachment: DEI Update

DEI BOARD REPORT

December 2021

HURON-CLINTON METROPARKS

METROPARKS.COM

DEI DEPARTMENT

MISCELLANEOUS

- Participated in interviews for
  - Police Department
  - Park Operation
  - Park Maintenance
  - District Superintendent
- Hosted Advisory Team Meeting
- Continued working on the Building and Sustaining Collaborative Relationships work group
- Career Pathways strategic planning
- Closed the 2021 Climate Survey
- Launched the DEI Cultural Awareness Series (led by Devin Bathish of the Arab American Heritage Council)
- Completed the Crain's Leadership Academy
- Preparation for Speaker Series
- Participated in discussion with the University of Michigan OLLI Lecture Committee
- Submitted the DEI departmental budget
- Worked with Chief of Interpretative Services on a School Partnership Agreement
- Continued to support the website review process
- Participated in a Systems and DNR DEI discussion
- Attended Operations meetings
- Continued working on CAPRA

CROSS-DEPARTMENT SUPPORT

- Career Pathways work with Jennifer (working with John R. King Academy re: science classes and developing new positions at the Metroparks)
- Assisted Marketing with resources for Native American Heritage Month

To: Board of Commissioners
From: Jennifer Jaworski, Chief of Interpretive Services
Subject: Report – Interpretive Services Department Monthly Update
Date: December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file Interpretive Services Department Monthly update as recommended by Chief of Interpretive Services Jennifer Jaworski and staff.

Attachment: Monthly Interpretive Services Department Report

HURON-CLINTON METROPARKS

INTERPRETIVE SERVICES MONTHLY REPORT

November 2021

Administrative Office
13000 High Ridge Drive
Brighton, MI 48114

HURON-CLINTON METROPARKS

METROPARKS.COM

PROGRAM/INITIATIVE IMPLEMENTATION

Project/Initiative Implementation

New:

- 2022 programming and partnership development with DEI

Ongoing:

- Development of Teacher surveys conjunction with Marketing and DEI
- Michigan Activity Pass
- Sensory Friendly backpacks available at Interpretive centers
- Alliance of Downriver Watersheds and Huron River Watershed partnership for stormwater education to Wayne County Greenschools
- ADA benchmarking to evaluate program accessibility
- Internal Evaluation on public interpretive programs and Public Event and Programming survey initiative.
- Interpretive Master Plans for 2021
    - Wolcott Mill Metropark Farm and Historic Centers
    - Oakwoods Metropark Nature Center
    - Kensington Metropark Farm Center

COMMUNITY ENGAGEMENT

Community Engagement

Ongoing:

- Detroit Parks Coalition discussion on growing partnership with programming
- Belle Isle Conservancy discussion on growing partnership with 2022 programming
- Detroit Riverfront Conservancy

PROGRAMMING

Programming

Ongoing:

- Get Out and Learn 2021-2022
- In-person, Synchronous and Asynchronous school programming continues
- In-person programming continues, including “pop-up” programs
- Virtual programming continues

GRANTS

Grants

Ongoing:

- Lake Superior State partnership and NOAA Great Lakes Bay Watershed Education and Training (B-WET) program to engage students in water quality monitoring and stewardship at Lake Erie Marshlands Museum.
- PNC Early Childhood grant for the Western District Mobile Learning Center.
- CMU and EPA grant partnership engaging students in water quality monitoring at Lake Erie Marshlands Museum.
- Lake St. Clair Birding Trail, the Metroparks are supporting partner on this grant that is promoting the birding trail in St. Clair and Macomb Counties.
- Green Ribbon Initiative with the Nature Conservancy, this grant covers conducting programming that highlights Oak Openings and develop interpretive signage at Oakwoods Nature Center.

HURON-CLINTON METROPARKS

To: Board of Commissioners
From: Tyler Mitchell, Chief of Natural Resources and Regulatory Compliance
Subject: Report – Monthly Natural Resources Update
Date: December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file the monthly Natural Resources Report as recommended by Chief of Natural Resources and Regulatory Compliance and staff.

Attachment: Monthly Natural Resources Report

NATURAL RESOURCES MONTHLY REPORT

DECEMBER 2021

Administrative Office
13000 High Ridge Drive
Brighton, MI 48814

HURON-CLINTON METROPARKS

METROPARKS.COM

SYSTEM-WIDE

ADMINISTRATIVE

- Finalizing year end reporting on several grant project and annual permits
- 2022 Natural Areas work planning and staff evaluations
- NPDES Permit administration continues
- Annual wildlife program planning and permitting for 2022
- Lake St. Clair NPS Grant planning for 2022 work

Figure 1: Native Seed Ball area, where seed previously collected at a quality site is dispersed.

SOUTHERN DISTRICT

LAKE ERIE METROPARK

- Shoreline excavation work planning continues, work to be completed by February.
- Marsh enhancement dredging project beginning in December.
- Natural Resource and Natural Areas crew to assist in excavation and seeding project.

WILLOW METROPARK

- Washago area planning and permitting work continues.

OAKWOODS METROPARK

- Prescribed fire planning for 2022 season. Preparation of restored tallgrass prairie area for future burns via targeted mowing and shrub control.

Figure 2: Tallgrass prairie habitat at Oakwoods Metropark

WESTERN DISTRICT

KENSINGTON MEADOWS METROPARK

- Invasive shrub control in priority sensitive areas.

INDIAN SPRINGS METROPARK

- Invasive shrub control in priority fen and prairie habitats.

HUDSON MILLS METROPARK

- Invasive shrub and vine control in fen and wetland habitats.

Figure 3: Example of invasive shrub controlled in winter with a "cut and dab" application of herbicide.

EASTERN DISTRICT

STONY CREEK METROPARK

- Invasive shrub control continues in priority areas, including Eastern Massasauga Rattlesnake priority habitat.

LAKE ST. CLAIR METROPARK

- Shoreline restoration on Black Creek Marsh continues. Grading, seeding, and barrier installation to finish in December. Plugs of native plants will be added in spring of 2022.

WOLCOTT MILL METROPARK

- Storm damage cleanup continues
- Invasive shrub control work continues for staff in priority areas.

Figure 4: NRC prepares to relocate a young maple tree as part of the shoreline restoration project at Lake St. Clair Metropark.

WHAT'S NEXT?

SYSTEM-WIDE

- Mechanical control of Phragmites after treatment at several parks this winter
- Deer management program at various parks
- Deer population surveys utilizing helicopter survey
- Annual mowing of sensitive areas

SOUTHERN DISTRICT

- Shoreline excavation and grading, and marsh dredging at Lake Erie Metropark
- Big Bend restoration planning, beginning grading work for prairie plantings

WESTERN DISTRICT

- Oak Wilt mitigation and trenching at various parks

EASTERN DISTRICT

- Shoreline restoration grading and seeding at Lake St. Clair
- Winter Phragmites control via cutting

To: Board of Commissioners
From: Jennifer Jaworski
Subject: Approval – T-Mobile Contract Renewal for Library Hot Spots
Date: December 3, 2021

Action Requested: Motion to approve

That the Board of Commissioners approve (1) the T-Mobile contract renewal to provide equitable access to hotspot service for students in need residing in the Metroparks five-county service region and; (2) approve a fund transfer from the Interpretive Services Outside Services account to the Inter-Governmental Outside Services account as recommended by Chief of Interpretive Services Jennifer Jaworski and staff.

Fiscal Impact: Subject to the approval of the Library Partners Renewal Agreement. There is a $28.70 monthly service fee plus service fees for unlimited LTE data per hotspot. The annual fiscal impact is $36,000.

Background: The Metroparks will provide one-year service plans for 100 hot spots with filters that will be checked out through The Library Network and Suburban Library Cooperative for use in underserved areas in our five-county service region. T-Mobile will provide the hotspot devices at no cost with a 12-month service commitment.

Working with The Library Network, and the Suburban Library Cooperative, the Metroparks can increase the number of hot spots available in underserved communities in our service region, which in turn will help to provide more equitable access to data.

Attachment: T-Mobile Invoice

T-Mobile Invoice for Service

Invoice Number: 202101061127

Billing Address: Accounts Payable
13000 High Ridge Drive
Brighton, MI 48114

Account name: The Huron-Clinton Metropolitan Authority
Account number: 971925703

Billing Period: January 2021 – December 2021

Item	Item Code Description	Order Qty.	Unit	Price per Unit	Months		Item Total
1	MOBILE HOTSPOTS Franklin T9	100	Lines	$0.00		$	-
2	Government unlimited LTE mobile Internet	100	Lines	$28.70	12	$	34,440.00
				Grand Total		$	34,440.00

REMIT ADDRESS:
T-Mobile, PO Box 742596, Cincinnati, OH 45274-2596

Customer Service Number 1-800-937-8997

Surcharges and Fee's
(actual taxes and fees may vary)

To: Board of Commissioners
From: Jennifer Jaworski, Chief of Interpretive Services
Subject: Approval – Library Partners Agreement Renewal
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners (1) approve the Library Partners Agreement renewal to provide equitable access to hotspot service for students in need residing in the Metroparks five-county service region upon review; and (2) authorize the director to sign the agreement as recommended by Chief of Interpretive Services Jennifer Jaworski and staff.

Fiscal Impact: Subject to the approval of the T-Mobile contract for unlimited data per hotspot in January 2022.

Background: In the best of times, inequitable access to the internet is a major problem. During the COVID-19 pandemic, this problem has escalated to crisis proportions. As schools continue with remote learning more residents will require data to download lessons, stream videos and join virtual meetings with their teachers. In this given situation, families, in our five-county service region, struggle to provide data service in the bandwidth needed for virtual learning. Providing hotspots will provide students across our service region the ability to participant in remote learning by providing internet access. These hotspots will provide highspeed internet by using broadband connectivity with T-Mobile data services. This will provide students the ability to participate remotely in learning and the ability to conduct online research for assignments and projects.

Working with The Library Network, and the Suburban Library Cooperative, the Metroparks can increase the number of hot spots available in underserved communities in our service region, which in turn will help to provide more equitable access to data.

The Metroparks will provide one-year service plans for 100 hot spots with filters that will be checked out through the Library Partners for use in underserved areas in our five-county service region. In addition to supporting the data needs of our service region, providing Hotspots will increase equitable access to virtual programming by the Interpretative Services Department. Cross promoting with the Library Partners will increase viability of Metroparks programming among library patrons and provide additional information about Library Partners' programs to our patrons.

The timeline of this partnership agreement is December 2021 – December 2022. The program will be assessed in September 2022 to determine if it will continue. This will allow the Metroparks to decide early in the 2023 budgeting process and provide notice to the Library Partners whether or not Metroparks will continue to fund the program.

Attachment: Library Network/Suburban Library Cooperative Partnership Agreement

Partnership Agreement

The following is a one-year partnership agreement between the Huron-Clinton Metroparks Authority (Metroparks), The Library Network, and the Suburban Library Cooperative (Library Partners) to provide equitable access to hotspot service for students in need residing in the Metroparks five-county service region.

NEEDS ASSESSMENT

In the best of times, inequitable access to the internet is a major problem. During the Covid-19 pandemic, this problem has escalated to crisis proportions. As schools continue remote learning this requires more residents to acquire data to download lessons, stream videos and join virtual meetings with their teachers.

In this given situation, families, in our five-county service region, struggle to provide data service in the bandwidth needed for virtual learning. Providing hotspots will provide students across our service region the ability to participate in remote learning by providing internet access. These hotspots will provide highspeed internet by using broadband connectivity with T-Mobile data services. This will provide students the ability to participate remotely in learning and the ability to conduct online research for assignments and projects.

Working with the Library Partners, the Metroparks can increase the number of hotspots available in underserved communities in our service region, which in turn will help to provide more equitable access to data.

OBJECTIVES

The Metroparks will provide **one-year service plans for 100 hotspots** with filters that will be checked out through the Library Partners for use in underserved areas in our five-county service region.

In addition to supporting the data needs of our service region, providing hotspots will increase equitable access to virtual programming by the Interpretative Services Department. Cross promoting with the Library Partners will increase visibility of Metroparks programming among library patrons and provide additional information about Library Partners' programs to our patrons.

SCOPE OF WORK

In accordance with this partnership the Metroparks Departments of Interpretative Services, IT and DEI will:

- Cover service plans for one year at a rate of $30 X 12 = $360/device through T-Mobile
- Secure 100 hotspots with filters from T-Mobile; to be delivered to the Library Partners for distribution to libraries in our 5-county service region
- Provide a Metroparks logo to be added to the new hotspots
- Promote the Library Partners' programs on the HCMA website and/or social media (per link)
- Work with Library Partners to select communities in our service region with the greatest need for participation in the program

The Library Partners will:

- Purchase cases for each hotspot
- Package and label hotspots, with appropriate labeling (to include Metroparks' logo), for public usage
- Check out hotspots through their library catalogs and provide user support
- Work with Metroparks to select communities in our service region with the greatest need for participation in the partnership program

- Provide the Metroparks with zip code data and usage counts for the hotspots
- Add the Metroparks logo of choice to the hotspots and/or cases
- Add their own logos to the hotspots and/or cases
- Promote Metroparks programs on their websites (via links to the partners' websites) and/or physically delivered items (i.e. mailing, flyers, etc.)

TIMELINE

The timeline of this partnership agreement is December 2021-December 2022. The program will be assessed in September 2022 to determine if it will continue. This will allow the Metroparks to decide early in the 2023 budgeting process and provide notice to the Library Partners whether or not Metroparks will continue to fund the program.

FEES

The cost of service for one year for 100 devices is **$36,000** (incl. taxes and fees) and will be paid by Metroparks

Amy McMillian
Director of the Huron Clinton Metroparks

Steven K. Bowers

Digitally signed by Steven K. Bowers
DN: cn=Steven K. Bowers, o=The Library Network, ou=Executive Director, email=sbowers@tln.lib.mi.us, c=US
Date: 2021.11.29 09:38:38 -05'00'

Steve Bowers
Director of The Library Network

Tammy Turgeon
Director of the Suburban Library Cooperative

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To: Board of Commissioners
From: Mike Henkel, Chief of Engineering Services
Project No: 509-20-554
Project Title: DTE Electrical Service Installation Agreement
Project Type: Capital Improvement
Location: Stony Creek Metropark
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners (1) approve the DTE Accounts Receivable Agreement for installation of electrical service in the amount of $35,692.75; and (2) approve the funding transfer from the Engineering Professional Services account to the Stony Creek Boat Launch Building Project to cover the cost of the work as recommended by Chief of Engineering Services Mike Henkel and staff.

Fiscal Impact: Funding is available in the engineering outside services account to cover the cost of the installation.

Scope of Work: The project involves installing a drop pole, conduit, conductors, and installation of a transformer for the new boat launch building.

Background: Staff had a meeting with DTE representatives on Oct. 2 to discuss the route and installation of the new electrical service for the new boat launch building at Stony Creek Metropark. The new service will be located on the east side of the main park road then bored underneath the park roadway and parking lot to the transformer location.

Contractor	**City**	**Amount**
DTE	Shelby	$35,692.75
Budget Amount for Contract Services		
- Engineering Outside Services		$35,692.75
Work Order Amount		
- Contract Amount DTE		$35,692.75
- Contract Administration		$ 1,000.00
o Total Proposed Work Order Amount		$36,692.75

To: Board of Commissioners
From: Amy McMillan, Director
Project Title: Update – Purchases over $10,000
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners receive and file the update for purchases over $10,000, up to, and including $25,000 as submitted by Director Amy McMillan and staff.

Background: On May 9, 2013, the Board approved the updated financial policy requiring the Director to notify the Board of purchases exceeding $10,000, up to, and including $25,000.

The following list contains purchases exceeding the $10,000 threshold:

	Vendor	Description	Price
1.	Best Asphalt	Roadway Repairs Boat Launch Lake Erie	$22,960.00
2.	PK Contracting Inc.	Pavement Marking Stony Creek	$18,950.00
3.	Conventional Carpet	Flooring Replacement Nature Center Stony Creek	$12,118.00

To: Board of Commissioners
From: Amy McMillan, Director
Project Title: Purchases – Total Spent and Vendor Locations
Date: December 3, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file the update for the monthly Total Spent and Vendor Locations as submitted by Director Amy McMillan and staff.

Background: Each month the Purchasing Department summarizes the total amount spent on Capital Equipment purchases, major maintenance and park projects and includes the location of vendors, either within or outside the Metroparks five-county region as well as the effect of DEI, living wage and the Metroparks local preference policy.

Attachment: Award Requests

Award Request for December 2021

Vendor	Vendor Location	Description	Park Location	Total Request	5-County Area	Greater Michigan	Outside Michigan	Effect of DEI, Living Wage & Local Preference Policy
DTE Energy	Detroit, MI	Installation of electrical service at the Boat Launch Building per DTE Electrical Service Installation Agreement	Stony Creek	$35,692.75	$35,692.75			
T-Mobile	Offices Nationwide	Library hotspot internet service per T-Mobile Agreement	Five-County Area	$34,440.00	$34,440.00			
			Totals	**$70,132.75**	**$70,132.75**	**$0.00**	**$0.00**	
			Percent of Total Award Request		100.00%	0.00%	0.00%	

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Approval – 2022 General Fund Budget and Resolution
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the 2022 General Fund Budget and Resolution as recommended by Chief of Finance Shedreka Miller and staff.

Fiscal Impact: The 2022 general fund budget as submitted makes planned use of $3.6 million of fund balance.

Background: The proposed 2022 general fund budget for which approval is requested has been revised from the preliminary proposed numbers reviewed at the November Board meeting. On the revenue side, park operations budgeted revenue has increased by $135,000. On the expense side, general fund expenditures decrease overall by $268,000. This reflects a decrease in the administrative office of $431,000, capital equipment of $290,000 and an increase in park operations of $482,000. Overall revenue has been scheduled to reach $59.1 million and expenditures total $62.7 million. The net result is the planned use of $3.6 million of fund balance.

The numbers presented have been reviewed and are recommended by staff. Additional adjustments to these numbers may be discussed based on input from Board members. Detail and full impact on these potential changes will be presented at the December budget hearing based on direction from Board members.

Overall Trends: Total revenue for the Metroparks is planned to remain fairly level when compared to the 2021 projected revenue of $59.3 million. It is estimated that revenue will decrease by $200,000 (.3 percent) in 2022. This is primarily the net result of a $575,000 increase in property tax revenue, which is offset by a $795,000 decrease in park operating revenue.

Operating revenue is relatively flat when compared to 2021. The budget was developed while anticipating a decrease in some aquatic related revenue due to the closure of the Lake Erie Great Wave Pool in 2022.

Budgeted expenditures are scheduled to increase by $6.8 million from the 2021 estimated expenditure total of $55.9 million to $62.7 million.

The increase is related to the following sources:

- Park operations up $3.2 million (9.2 percent)
- Administrative Office up $2.1 million (20.2 percent)
- Major Maintenance up $1.1 million (37.5 percent)

While these are significant increases it is important to note that comparisons to 2021 estimated figures are in some cases distorted by the pandemic. Capital Equipment funding, at $2.2 million, is 10 percent below the 2021 projected amount.

The budget to provide funding to the Capital Project Fund ($5.6 million) is slightly higher when compared to the 2021 amount of $4.9 million. This amount is the net result of $6.8 million of newly funded capital projects netted against $1.2 million anticipated grant funding.

The chart below summarizes major budget categories and the impact on fund balance from the proposed 2022 general fund budget:

BUDGETED REVENUES	2020 Actual	2021 Amended Budget	2021 Projected Actual	2022 Proposed Budget
ADMINISTRATIVE				
PROPERTY TAX LEVY	$ 32,457,957	$ 34,043,346	$ 34,067,795	$ 34,642,523
GRANT REVENUE	935,632	83,201	52,895	52,500
DEVELOPMENT SUPPORT	12,520	10,889	1,127	-
INTEREST INCOME	549,839	116,690	125,000	100,000
SALE OF CAPITAL ASSETS	170,085	100,000	149,650	100,000
STATE SOURCES REVENUE	597,755	550,000	550,000	645,000
OTHER	1,316,447	180,764	180,725	179,500
PARK OPERATIONS				
OPERATING REVENUE	21,272,732	20,360,307	24,044,084	23,303,338
PARK DEVELOPMENT SUPPORT	65,451	78,382	103,871	50,220
TOTAL BUDGETED REVENUES - 2022	$ 57,378,417	$ 55,523,580	$ 59,275,147	$ 59,073,081
BUDGETED EXPENDITURES				
PARK OPERATIONS	$ 33,688,714	$ 36,713,273	$ 35,409,382	$ 38,657,850
ADMINISTRATIVE OFFICE	9,175,295	11,130,824	10,255,749	12,324,194
MAJOR MAINTENANCE	1,587,804	3,592,767	2,894,258	3,978,705
CAPITAL				
EQUIPMENT	2,175,922	2,140,358	1,638,092	2,173,990
LAND ACQUISITION	57,527	789,638	789,638	-
CAPITAL PROJECT FUND				
IMPROVEMENT PROJECT FUNDING	5,040,253	4,903,649	4,903,649	5,566,473
TOTAL BUDGETED EXPENDITURES - 2022	$ 51,725,515	$ 59,270,509	$ 55,890,768	$ 62,701,212
NET INCREASE (USE) OF FUND BALANCE	$ 5,652,902	$ (3,746,929)	$ 3,384,379	$ (3,628,131)

OVERALL REVENUE: As noted above, total 2022 general fund budgeted revenue is planned at $59.1 million. Tax revenue continues to provide the overwhelming majority of Metroparks funding at $34.6 million with park operating revenue expected to generate most of the remainder at $23.3 million.

Tax Revenue: Property tax revenue is the source of just over 59 percent of all Metroparks funding, resulting in $34.6 million in expected revenue.

Operating Revenue: Total park operating revenue planned for 2022 is $23.4 million. This is a decrease of $794,000 compared to the 2021 estimated park operating revenue of $24.1 million. There aren't any Board approved fee changes in the 2022 revenue budget.

The most significant variances are in the areas of aquatics, golf and tolling. Aquatic revenue is estimated to generate an additional $560,000. Tolling and golf revenue is budgeted at $377,000 and $964,000 less than 2021.

PARK OPERATING REVENUE BY COST CENTER

	2021 Projected Actual	2022 Proposed Budget	Change	%
Aquatic Facilities	$ 1,156,820	$ 1,717,050	$ 560,230	48%
Boat Rental/Dockage Storage	1,052,709	993,228	(59,481)	-6%
Tolling	11,781,106	11,404,242	(376,864)	-3%
Golf	7,636,888	6,673,062	(963,826)	-13%
Interpretive	348,240	432,524	84,284	24%
Facility/Stage/Shelter Rental	578,979	595,325	16,346	3%
Other	1,593,213	1,538,127	(55,086)	-3%
	$ 24,147,955	$ 23,353,558	$ (794,397)	-3%

Grant Revenue: Most of the 2022 budgeted grants are related to Capital Improvement Projects and are reflected in the Capital Project Fund. As additional operating grants develop during the year the budget will be amended to recognize them.

Other Revenue Sources: Interest rates continue to remain at significantly low levels. As a result, a lower amount of interest income is generated. It is estimated that the 2022 interest revenue will decrease by $25,000. The estimated MMRMA distribution remains at $25,000, which is the same as 2021.

It is unknown whether the Metroparks will receive a rate surplus payment from Blue Cross Blue Shield. As a result, it was not included in the 2022 budget. Sale of capital and non-capital surplus equipment is expected based on history.

OVERALL EXPENDITURES: As previously indicated, total 2022 general fund budgeted revenue is planned at $62.7 million. This is a 12.2 percent increase over 2021 estimated expenditures. It is worth noting that it represents only a 5.8 percent increase over the 2021 budget amount of $59.3 million.

Major maintenance, park operations and administrative office are the main sources of the $6.8 million variance compared to the 2021 estimated figures. Major maintenance is primarily increased reflecting a thoughtful, strategic plan to address trail and road maintenance. The administrative office department increases are related to new initiatives for the year.

Capital equipment expenditures is 10.5 percent lower and capital project funding is 13.5 percent higher than the 2021 estimated amount. There are no funds scheduled for land acquisition. Should the Board determine that acquisition of land is beneficial or needed there are funds committed in fund balance that could be used for this purpose.

Capital Project Funding: All capital improvement projects are budgeted and tracked in the Capital Project Fund (CPF). Funds remain in the CPF unless the Board approves a transfer back to the general fund. For 2022, 23 new projects have been identified. These projects total $6.8 million. An additional $1.2 million is expected to be available from various granting agencies leaving the net funding needed from the General Fund at $5.6 million.

Significant projects include:

• Hudson Mills/Dexter-Huron/Delhi – Delhi launch and take out renovation	$ 306,000
• Hudson Mills/Dexter-Huron/Delhi – convert gas storage tanks to above ground	150,000
• Lake Erie – Cherry Island nature trail improvements	871,800
• Lake Erie – sewer line replacement at boat launch building	150,000
• Lake St. Clair – road reconstruction entrance/office	1,100,000
• Lower Huron/Willow/Oakwoods – Washago Pond redevelopment	900,000
• Stony Creek – reflection nature trail improvements	931,200
• Stony Creek – seawall repair and Washington Twp. Fire Dept. boat pier	570,000
• Stony Creek – develop shelter	500,000

Capital Expenditures: Capital equipment and land acquisition continue to be planned for and tracked within the general fund. The budget for capital equipment decreased moderately from the 2021 estimated expenditures by $254,000 (10.5 percent).

Some of the more significant items planned to be purchased include:

• Mower (11)	$708,590
• Pick Up Truck (5)	253,000
• Loader (2)	229,000
• Utillity Vehicle (9)	186,900
• Police Vehicle (3)	150,000
• Chipper (1)	90,000
• Tractor (2)	62,000
• Beach Shifter (1)	50,000

Major Maintenance: 2022 Major Maintenance budget includes 38 projects totaling $3.8 million. This represents a modest increase compared to the work accomplished in 2021. There were a few projects that could not be completed due to unforeseen circumstances. Those projects will be completed in 2022 and have been added to the budget.

Significant projects included on the list are:

- Indian Springs – pumphouse upgrades at golf course $431,000
- Kensington – island road repairs 438,000
- Kensington – re-budget - dam concrete work 247,000
- Kensington – re-budget - trail improvement - Martindale north 427,000
- Kensington – repainting of Sprayzone towers and fence (Martindale) 100,000
- Lake Erie – dredge marina channel and relocate spoils pile 150,000
- Lake Erie – museum wall repair 100,000
- Lake St. Clair – boardwalk re-surface of remaining 1,100 feet 100,000
- Lake St. Clair – re-budget - north/south marina dock electrical & water 150,000
- Lower Huron/Willow – Lower Huron north end parkway resurfacing 650,000

Park Operations: Our goal is to continue to work toward a budget that is based on realistic expectations while maintaining a conservative approach to avoid overstating expenditures. The chart below summarized park operating expenditure trends. Outside services are significantly higher due to the addition of the Interpretive services community outreach expansion (500,000) and the part-time employee living wage bonus (350,000).

PARK OPERATING EXPENDITURES				
	2021 Projected Actual	2022 Proposed Budget	Change	%
Personnel Services				
Full-Time Wages	10,500,575.00	11,135,104	634,529	6.0%
Full-Time Fringes	7,410,599.00	7,942,112	531,513	7.2%
Part-Time Wages	7,786,149.00	8,557,881	771,732	9.9%
Part-Time Fringes	690,109.00	757,659	67,550	9.8%
Total Personnel Services	26,387,432	28,392,756	2,005,324	7.6%
Materials and Services				
Operating Supplies	1,645,344	1,751,057	105,713	6.4%
Minor Equipment	606,224	708,626	102,402	16.9%
Other	1,429,155	1,483,313	54,158	3.8%
Fuel	527,048	460,454	(66,594)	-12.6%
Outside Services	2,533,129	3,496,816	963,687	38.0%
Insurance	554,568	581,241	26,673	4.8%
Utilities	1,726,482	1,783,587	57,105	3.3%
Total Materials and Services	9,021,950	10,265,094	980,871	10.9%
Total Park Operating Expenditure	$ 35,409,382	$ 38,657,850	$ 2,986,195	8.4%

Administrative Office: The total administrative office is budgeted to increase by more than $2.0 million or 20.2 (percent) compared to the 2021 projected amount. The 2022 budget of $12.3 million is $1.2 million higher than the 2021 budget. As noted earlier the administrative office increase reflects new initiatives along with the addition of new positions for 2022.

Notable new initiatives and positions are:

- Climate Consultant $200,000
- Storm Water Consultant 100,000
- GZA Dam Study 165,200
- Surveying Services 130,000
- DEI Assistant and Accountant positions 268,000

The following chart summarized expenditures trends at the administrative office by account.

ADMINISTRATION OFFICE OPERATING EXPENDITURES				
	2021 Projected Actual	2022 Proposed Budget	Change	%
Personnel Services				
Full-Time Wages	4,141,186.00	4,645,433	504,247	12.2%
Full-Time Fringes	2,318,588.00	2,726,890	408,302	17.6%
Part-Time Wages	372,001.00	613,549	241,548	64.9%
Part-Time Fringes	24,467.00	47,686	23,219	94.9%
Total Personnel Services	6,856,242	8,033,558	1,177,316	17.2%
Materials and Services				
Operating Supplies	173,077	185,440	12,363	7.1%
Minor Equipment	133,304	206,947	73,643	55.2%
Other	332,817	520,452	187,635	56.4%
Fuel	29,000	41,250	12,250	42.2%
Outside Services	2,485,467	3,088,209	602,742	24.3%
Insurance	129,384	135,298	5,914	4.6%
Utilities	116,458	113,040	(3,418)	-2.9%
Total Materials and Services	3,399,507	4,290,636	891,129	10.9%
Total Park Operating Expenditure	$ 10,255,749	$ 12,324,194	$ 2,068,445	20.2%

2022 BUDGET RESOLUTION

MOTION BY: Commissioner
SUPPORTED BY: Commissioner
DATE: December 9, 2021

In accordance with the provisions of Public Act 621 of 1978, the Uniform Local Budgeting Act, Public Act 147 of 1939, the incorporation of the Huron-Clinton Metropolitan Authority and the By-Laws of the Huron-Clinton Metropolitan Authority, the Board of Commissioners, after due deliberation with the Director and her staff, does hereby adopt the 2022 General Fund Budget.

BE IT RESOLVED: That the 2022 revenues for the Huron-Clinton Metropolitan Authority are detailed in the Revenue section of the Budget and are summarized as follows:

Property Tax Levy	$34,642,523
Park Operating Revenues	23,303,338
State Sources	645,000
Interest Income	100,000
Sale of Capital Assets	100,000
Grants	52,500
Donation & Development Support	50,220
Miscellaneous	179,500
	$59,073,081

AND BE IT RESOLVED: That the 2022 expenditures for the Huron-Clinton Metropolitan Authority are hereby appropriated on an overall category basis.

BE IT FURTHER RESOLVED: That all sections of the 2022 Huron-Clinton Metropolitan Authority Budget document be approved as submitted.

BE IT FURTHER RESOLVED: That the Director of the Huron-Clinton Metropolitan Authority is hereby authorized to make budgetary transfers within the appropriation centers established throughout this Budget, and that all such transfers will be subsequently presented to the Board of Commissioners for further action, in conformance with the provisions of the Michigan Uniform Budgeting Act.

AYES: Commissioners

NAYS:

ABSENT:

I, Amy McMillan, the duly appointed and qualified Director of the Huron-Clinton Metropolitan Authority, do hereby certify that the foregoing resolution was adopted by the Board of Commissioners at the regular scheduled meeting held in Brighton, Michigan on December 9, 2021.

Amy McMillan,Director

To: Board of Commissioners
From: Amy McMillan, Director
Subject: Approval – Deer Herd and Ecosystem Management Plan
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the Deer Herd and Ecosystem Management Plan as presented by Director Amy McMillan and staff.

Background: The Metroparks Deer Management program was last updated approximately five years ago. To ensure the Metroparks is using the best resources, methodology and practices available to manage the deer herd and preserve the ecosystems within the parks, staff examined the current deer management program and conducted extensive research to update and amend the plan, which is attached for your review.

Attachment: 2022-2026 Deer Herd and Ecosystem Management Plan

HURON-CLINTON METROPOLITAN AUTHORITY

DEER HERD AND ECOSYSTEM MANAGEMENT PLAN

2022–2026

May 2001
Revised July 2015
Revised December 2021

HURON-CLINTON METROPARKS

METROPARKS.COM

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EXECUTIVE SUMMARY

The Huron-Clinton Metropolitan Authority (HCMA; Metroparks) has a long legacy of active stewardship managing the extensive wildlife and ecosystems cherished throughout the Metropark system.

As part of this ongoing commitment, the Metroparks remains focused on preserving the native ecosystems and recreational open spaces within the park system which consists of 13 parks throughout Livingston, Macomb, Oakland, Washtenaw and Wayne counties.

Through wide-ranging efforts, the goal has always been and continues to be creating a balanced and functional environment for the native plants and animals who call the parks home. Climate change, invasive species, and the pressures of surrounding land use present an ongoing threat to the integrity of these ecosystems. The ecosystems stand a greater chance of long-term survival and have an opportunity to thrive when concerted monitoring is combined with analysis of available scientific data and a review of best practices from around the state and country.

The Metroparks oversees and manages more than 25,000 acres throughout the park system encompassing developed and undeveloped land. Its goal is to protect and restore natural diversity while balancing ecological stewardship with compatible recreational uses. This is a responsibility the Metroparks takes very seriously. It is imperative to act judiciously to preserve the robust diversity of plants and wildlife found in the parks for future generations.

White-tailed deer are important to the people of the state of Michigan. The expectations, concerns, and values associated with deer by Michigan residents are diverse and complex making successful management of this natural resource challenging. Responsibly managing populations of both animal and plant species, including ensuring healthy, thriving deer herds within the Metropark system, is most effective when best practices are understood, practiced, and evaluated to determine what is most effective for the overall welfare of the deer herds and the entire ecosystem.

In early 2021, the Metroparks committed to conducting a comprehensive review of evolving best practices and alternative methods used to effectively control deer populations. This Deer Herd and Ecosystem Management Plan is a compilation of that research, and a historical overview of how wildlife and ecosystem management has evolved. The HCMA has further committed to similar reviews every five years. These efforts are also further evidence of the HCMA's ongoing commitment to transparency.

Research and Analysis

This comprehensive review is to ensure the latest, best, and most humane practices are used to manage the robust yet vulnerable ecosystems within each Metropark. The data considers scientific deer and vegetation research, results from a Metroparks deer herd health study conducted by third-party wildlife biology experts, Michigan Department of Natural Resources deer population density thresholds, as well as aerial surveys used to identify herd sizes within the 13 parks. This work serves to ensure continued evaluation of the program and assurance that everything possible continues to be done to humanely address deer overpopulation while creating a stable home to a healthy, thriving herd and while also protecting the diverse flora and fauna.

Plants are a significant component of the foundation of all ecosystems' function. When this foundation begins to crumble, there is a cascading effect that alters other levels of the food chain and other species of wildlife including insects, birds, and mammals. In response to an observed decline in the overall health of the deer herds and loss of many species of native plants, a deer management program at the Metroparks was initiated in 1999.

To better understand why a Deer Herd and Ecosystem Management Plan for the Metroparks is crucial, it is important to understand how white-tailed deer reproduce and forage. Because deer can consume up to 12 pounds of vegetation per day, they can influence the composition of the fauna and flora communities in ecological systems, putting some species and ecological systems at risk. Scientific journals, studies, and position papers from a number of organizations and institutions have documented the effects of overabundance of white-tailed deer across North America. Impacts cited include increased instances of car-deer collisions, public health issues, property damage, and ecosystem degradation.

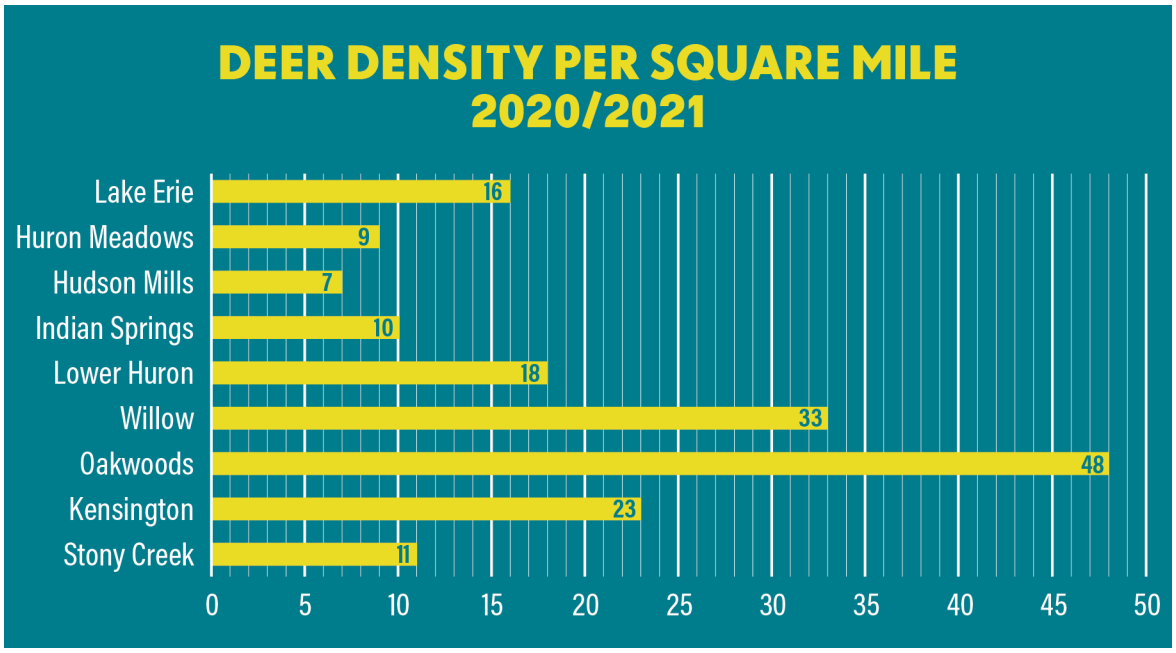
Vegetation surveys in 1998-1999 at Kensington Metropark revealed a loss of 69 species of plants, with an additional 25 species listed as uncommon. During the same year, surveys at Stony Creek Metropark revealed a loss of seven species of plants and an additional 21 species listed as uncommon. In addition, data gathered by the Michigan Department of Natural Resources (MDNR) from the Metroparks management program in 1999 indicated the Metroparks deer herd was under stress from the high population density and lack of proper nourishment.

Excessive deer populations and invasive plants are two related issues that often play on each other causing further stress to native ecosystems. In the absence of natives, invasive plants create habitat that wildlife has trouble adapting to. Metroparks hosts several volunteer days during certain parts of the year to both harvest seeds from native plants as well as limit the spread of invasive plant species. The harvested seeds are replanted in degraded areas to restore and expand healthy ecosystems in the Metroparks.

Deer Herd Management

To address the concerns of deer overabundance within the park system, the Metroparks Wildlife Management Advisory Committee was formed in 1997 to assist in the development of a deer management plan. Following their recommendations, a white-tailed deer cull was conducted at Kensington, Stony Creek and Hudson Mills Metroparks in the fall of 1999. Since then, the HCMA has initiated a long-term deer management plan that allows deer populations in the Metroparks to be managed using several forms of integrated management techniques.

Aerial survey data, collected at least every five years or in compliance with MDNR permit requirements, are incorporated into a population model to predict herd sizes and to help determine necessary population management actions. In general, a population density of between 15-20 deer per square mile is the preferred carrying capacity for habitats within the Metroparks. This aligns with a population density threshold of between 15-20 deer as recommended by the Michigan Department of Natural Resources. In the year 2021, population densities averaged 19.5 deer per square mile with the highest density at Oakwoods Metropark with 48 deer per square mile (last surveyed in 2017).



Over the past year, the Metroparks has fulfilled its commitment to review available data and research and evaluate best practices for maintaining a thriving deer herd. Research continues to support culling as the most effective, humane way to protect the health and welfare of the Metroparks deer population, as well as the ecosystem which sustains them.

HCMA understands and appreciates the wide range of passionate viewpoints this issue evokes. HCMA is committed to sharing as much information as possible to raise awareness of what HCMA is doing and why, as well as to the transparent disclosure of the process used to preserve and manage wildlife and ecosystems within the Metroparks.

Deer populations are managed at park locations in accordance with special permitting through the Michigan Department of Natural Resources using trained Metroparks Police sharpshooters and approved volunteers through controlled hunts. Safety is always of utmost importance. Unique deer, recognized as bringing added value to the Metroparks system, continue to be protected for the public interest and enjoyment, or environmental / genetic diversity, unless determined by the Metroparks and/or MDNR to be detrimental to public or environmental (including deer or other plant or animal species) health, safety, and welfare. All white-tail deer harvested are processed and meat is distributed to food banks to help feed hungry families across southeast Michigan.

To assist biologists and park managers in assessing deer herd health, program success, and future management needs, biological data is collected from all deer taken in the program and provided to the MDNR. Underscoring the importance of sound population management practices is the confirmed outbreak of Chronic Wasting Disease reported in neighboring Ingham County in 2015. All county ordinances related to the sharing of biological data from harvested deer are adhered to and the MDNR plans to conduct CWD testing on all deer taken in Oakland County in 2022.

Deer Herd and Ecosystem Successes

Overall, the Metropark deer population has shown a significant improvement in physical condition since the beginning of the management effort in winter of 1999. Changes have been most noticeable in fawns and yearlings through increases in body weights. Fawn dressed weights are suggestive of a shift from poor diet to healthy diet. Presence of fawn breeding also indicates an improvement in physical condition and perhaps physiological maturity. Total herd productivity either has remained good or increased in many instances.

Flora and fauna continue to be monitored throughout the park system by Metroparks Natural Resources Department and Interpretive Department staff trained in photo monitoring and observing changes in the ecosystems. Since the inception of the deer management program, several uncommon plant species are once again being observed in the parks, and in many instances, overall ecosystem health is improving. Moderate to good increases have been noticed in indicator species like trillium and geranium along with white cedar, cherry and oak regeneration. Unfortunately, the increase in non-native, invasive plant infestation is impeding the recovery process.

"2010 was the first time since 1993 that Michigan Lily were observed in blossom. Deer seem to have a special affinity for members of the lily family, and this plant is no exception. We have been anticipating the return of this species ever since the deer culls began in 1999." (Stony Creek Deer Photo Monitoring Report 2010)

RESEARCH

Introduction

The Huron-Clinton Metropolitan Authority (HCMA; Metroparks) Deer Herd and Ecosystem Management Plan program encompasses wide-ranging efforts to manage native ecosystems and recreational open spaces within the Metropark system. By working toward a balanced and functional environment, all native plants, and animals (including white-tailed deer) contained within these ecosystems stand a greater chance of long-term survival and have an opportunity to thrive.

Impacts on an Ecosystem

An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscapes, work together to form a bubble of life. An ecosystem can seem healthy at first glance but may be experiencing an invisible ecological disturbance.

DEER

There are many impacts that can stem in an ecosystem from just one disturbance. For example, white-tailed deer are opportunistic and selective browsers; consuming what is available to them in the area as well as choosing based on nutritional value. Deer impact the food chain (trophic levels) directly and indirectly, in addition to other environmental factors such as soil nutrients and resource availability for vegetation (Patton et al., 2018). When deer select an entire plant species in one area this will harm not only the individual plant species but also other organisms within the area, creating a ripple effect (Shelton et al. 2018).

If deer eat most of the acorns found in one area of the forest floor, fewer oak trees will grow. This would result in a lower density of oaks, changing the composition of plant density in that area (McShea, 2012). When there are less plants, this impacts other animals and organisms that also rely on this plant; whether they leave in search of food and homes in another area or die from competition. This will now affect that animal's prey and predators. With less food available that species is going to have to compete for food. This cycle can lead to over

population or large die-offs. Other organisms are not just impacted by a high deer population, it can also be from selective browsing.

Deer are selective feeders. The effects of preferential browsing by deer can be seen in trees and herbaceous flowering plants alike. Overabundant deer populations can have devastating effects on many native tree populations including maple, oak, and dogwoods. Impacts may not be immediately apparent on large, established trees, but saplings are at the perfect height and tenderness for deer browsing. Forests are built to withstand some browsing, but as older trees mature and die forests struggle to regenerate (Aronson & Handel, 2011).

Deer also enjoy trillium; a spring wildflower which is one of the preferred foods of deer. If one or two deer eat all the trillium in one area, other organisms like ants will be impacted because they rely on this wildflower as a food source. With trillium depleted, ants need to find a new source of food. Trillium seeds are primarily dispersed when ants eat the seed. With no trillium in an area, it creates a lower density of vegetation. This can lead to other plants, possibly invasive species moving into the area. If these plants are not good options for organisms that relied on trillium there will be higher competition for other food and resources, or they will move away from the area.

NATIVE LANDSCAPES AND PLANT SPECIES

In recent decades, concern has grown for the impact of invasive species on our native landscapes. An invasive species is a non-native species that presents a risk of harm to economic, environmental, or human health (Invasive.org, Invasive species 101 - an introduction to invasive species, 2018). This harm may be because of actual toxins or illness associated with the invasive species, or it may be because they take over an area leaving little room for anything else.

In Michigan, some common invasive plant species include garlic mustard (Alliaria petiolata), Japanese barberry (Barberis thunbergii), glossy buckthorn (Frangula alnus), tree of heaven (Ailanthus altissima), Asian bittersweet (Celastrus orbiculatus), and autumn olive (Elaeagnus umbellate). This list, however, is not exhaustive and natural resource professionals are always on the lookout for new emerging species to mitigate what could become a bigger problem.

(Pictured above: Garlic mustard, Japanese barberry, Tree of heaven)

Repeated disturbances within a small area always brings with it the chance that new species, carried within the feet, fur, or scat will be introduced into that region. Additionally, once a new plant species is introduced, deer in the region will either enjoy it or avoid it. Either scenario can put new stresses on already stressed native plant populations. Furthermore, invasive plants may even change the soil chemistry in a way that is unsuitable to the native plants making a comeback difficult.

A subtler, yet immediate impact can be seen when comparing numbers and diversity of spring wildflowers over consecutive years. Often, invasive plants are avoided by the deer and other herbivores leaving them with little in the way of competition. Plants such as Japanese Barberry, garlic mustard, and Japanese stiltgrass are consistently avoided by deer, while Asian bittersweet, common privet and certain honeysuckles are sought after (Averill et al., 2016). The unfortunate consequence is that there is increased pressure on native plants as deer seek out other, tastier options. Both avoidance and attraction by deer can contribute to the proliferation of an invasive plant. In cases where the plant is avoided, growth goes unchecked and native plants are crowded out. In cases where animals are attracted to the plant, it is often the fruits of that plant that are consumed, allowing seeds to spread elsewhere such as with autumn olive and multiflora rose. Autumn olive and Asian bittersweet, for example, have berries that deer are attracted to, and tree of heaven is browsed when alternatives are sparse.

Plants have adapted many ways in which to spread their seeds to further distances than their immediate area. Rather than conscious decisions, these are adaptations that make it more likely the seeds may catch on the wind, be eaten by an animal, or hitch a ride in fur, for example. Deer are certainly a part of this phenomena and frequently carry seeds in their fur. They also can be responsible for the spread of seeds through the eating of berries, and many of the invasive species deer enjoy are for the sake of their fruits. Asian bittersweet, honeysuckle, and wild raspberries are all favorites (Averill et al., 2016). Asian bittersweet, in particular, benefits from passing through an animal's digestive tract, where digestion of the fleshy aril results in higher germination rates and enhances seedling emergence. (Greenberg et al., 2001) This process is an example of scarification, wherein a seed's protective coating is disturbed resulting in enhance germination.

SOIL

Soil plays an important role in an ecosystem as well. Soil is made up of a combination of broken-down bedrock and decomposed organic material and serves as a major determinate of habitat (Dickman and Leefers, 2003). Soil, however, is also home to bacteria and fungus that help break down the wastes of the rest of the forest. They convert what would otherwise be waste into usable nutrients, like nitrogen, that plants depend on to grow. Soil is a full living system, and as such it is also vulnerable to change when the conditions around it change.

NITROGEN CYCLE & INVASIVE PLANTS

The nitrogen cycle is a natural process that recycles essential nutrients for growing plants. When it is thrown out of balance by invasive plants or population booms, it can cause deep consequences in our environment. On this chart, normal processes are shown with green arrows and trouble spots are shown in orange. Pictures with a red border are of elements not normally found in healthy Michigan forests.

Biodiversity: Having a wide variety of plants and animals is essential to a healthy functioning forest. Natural processes keep populations in check to allow room for variety, but human activities have altered the processes and sometimes imbalances occur.

Excessive deer populations and invasive plants are two separate problems that often play on each other causing further stress to native ecosystems. Since deer are only a problem under high numbers, they are shown here in orange. See the Food Web diagram for more information.

Michigan Lily
(Lilium michiganense)

Great White Trillium
(Trillium grandiflorum)

White-tailed Deer
(Odocoileus virginianus)

An Ecosystem in Peril: With populations imbalanced and soil chemistry altered, nutrients like nitrogen are no longer in a form optimal for plant growth. This puts both native plants and the animals that eat them in peril.

Mycorrhizae and Bacteria, cont.: Soil organisms continue to breakdown nitrite to become nitrate (NO_3). Plants are able to use nitrate to get the nitrogen essential to growth.

Earthworms
(Lumbricus sp, Eisenia, sp., Amynthas sp.)

Unwelcome Guests: Believe it or not, earthworms are not a native part of MI's ecosystem. Their presence opens our ecosystem to invasion by other invasive organisms. While deer did not originally bring worms here, studies have shown a link between deer overabundance and earthworm invasions.

Mycorrhizae and Bacteria: Fungus in the soil called mycorrhizae and bacteria break down ammonia created during decomposition to create nitrite (NO_2), a from of nitrogen not easily used by plants.

Part of the Cycle: Death is a part of nature. Decaying plants, animals and animal waste are broken down to return nutrients to the soil. In the first steps of decomposition, nitrogen is released into the soil as ammonia (NH_3).

Bare Soil: A little bare soil is okay, but a healthy forest floor is full of decaying organic matter. If the canopy changes or worms eat fallen plants, the forest floor can become bare in areas where it is crucial to have leaf litter.

Japanese Barberry
(Berberis thunbergii)

Secondary Invasions: Sometimes soil changes caused by an invasive plant open the door to invasions by other plants. Barberry is a plant that is able to get nitrogen from the soil without the help of mycorrhizae, and thus flourishes after garlic mustard invasions have killed off these important soil microbes.

Garlic Mustard
(Alliaria petiolata)

Invasive Plants: Bare soil makes the environment more suitable for invasive plants such as garlic mustard. Garlic mustard crowds out native plants and releases chemicals that inhibit the growth of other plants and kill beneficial soil organisms. Deer favor other plants and avoid garlic mustard, giving it a competitive edge in forests.

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Studies have shown a correlation between deer overabundance and earthworm invasions. Garlic mustard is a particularly poignant reminder of this, as in addition to being allelopathic (meaning it releases chemicals to inhibit growth of other plants) it is also able to thrive in areas of much higher nitrogen in different forms than what our native northern forest ecosystems have adapted to. Interestingly, one predictor of garlic mustard seems to be the presence of invasive earth worms (Blossey, 2020). It should be noted that Michigan has not had a native earthworm since before the last glaciers retreated, so any earthworm you see here is a non-native species. The role of earthworms seems to be to clear away leaf litter to make way for garlic mustard to establish itself.

As can be seen in this nitrogen cycle and invasive plants diagram, the presence of earthworms opens the ecosystem up to invasion by other invasive organisms which exacerbates ecosystem damage. The more deer, the more deer feces, and earthworms thrive resulting in ideal growing conditions for garlic mustard. This type of monoculture and lower plant diversity equates to more damage to the ecosystem as deer eat whatever plants that are left, effectively worsening the overall cycle. Additionally, deer exclusion studies also show deer seem to be a factor in the success of earthworm populations. In study plots where deer had been excluded, earthworm populations seem to drop-off as well (Averill et al., 2018).

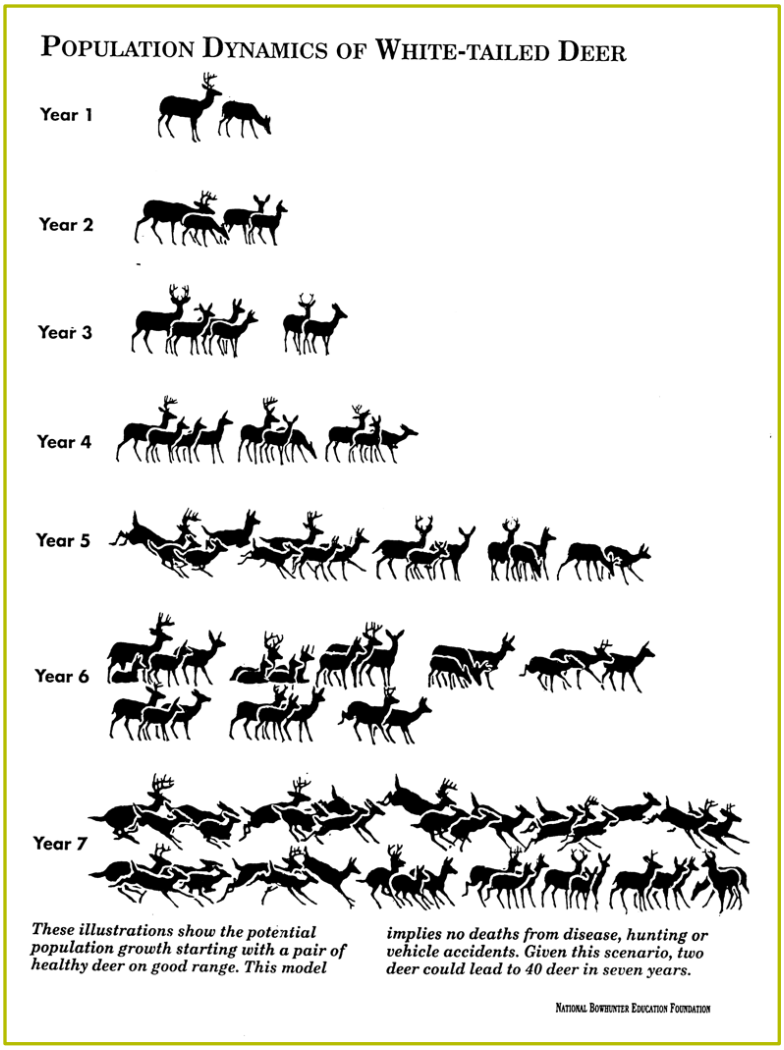
The soil changes brought on by garlic mustard and earthworms seem to also favor invasive plants, such as barberry and bittersweet (U.S. National Park Service; 2018). More studies are being done to determine the full links between deer and earthworms, but evidence seems to show that deer pellets create a better environment for earthworms to survive and deer presence tends to correlate with earthworm invasions.

Another concern with deer overpopulation, is one that is not immediately apparent – the alterations to a forest canopy. Canopy changes are undoubtedly something that will be of an even higher concern as climate change alters our landscapes. While deer prefer fresh green plants, during colder months they must shift their eating habits to woody plants. During this time, they will eat twigs and saplings. Forests can withstand some browsing since trees will put off many more seedlings and suckers than what are needed, but when too many trees have been browsed, there may not be enough to reforest an area that has been logged, experienced a storm, or that simply has a high number of aging trees (Aronson & Handel, 2011). Particularly susceptible tree species include red oak and sugar maple. In fact, up to 60 percent of red oak seedlings are browsed by deer (Blossey, Curtis, Boulanger, and Davalos, 2019). Gaps left in the forest floor coupled with sunlight let in from reduced canopy cover then leave room for invasive species to establish themselves putting further strain on already impacted native species.

There is a ripple effect from one impact or disturbance within an ecosystem. The focus remains on the overall quality of an ecosystem. This includes all the plants and animals within as well as the soil composition, as everything that lives within the ecosystem affects everything else.

BIOLOGY OF WHITE-TAILED DEER

White-tailed deer (Odocoileus virginianus) are native to Michigan and an important part of the natural Metropark wildlife community. They are one species interacting with thousands of other plants and animal species in a complex ecosystem. The complexity of this system makes it difficult to determine one species' importance over another, so it is imperative that these natural ecosystems are maintained to promote full native species diversity. Deer, however, are an opportunistic species that can, without checks and balances, become abundant enough to disrupt the equilibrium within a native community.



The population of white-tailed deer has increased dramatically throughout southeast Michigan in the past thirty years, including within the Metropark system. Population increases can be attributed to many factors including the deer's own high reproductive rate, the absence of natural predators and the restriction of open hunting on park property. In addition, the continued urbanization of the areas around the park system, reduces habitat quality and quantity, constrains their movement patterns, and may force animals into any remaining

natural areas including parks. At higher densities, deer can place a heavy burden on the natural communities by reducing species diversity of plants and wildlife as well as impairing forest regeneration. If over browse continues, plant populations can decline with some species disappearing altogether, which in turn, further disrupts nature's balance.

By the mid-1990s it became evident that damage to both the parks' natural habitats and landscaped areas by deer was reaching a critical stage and that a Deer Herd and Ecosystem Management Plan was needed to maintain the biodiversity within the Metropark system, while maintaining a healthy deer herd.

Ecosystems Within the Metroparks and Interpretive Staff Observations and Research

The quality of the natural resources has been a focus since the inception of the Metroparks in 1940. Metroparks interpretive staff have been observing, monitoring, recording, and researching natural areas within the parks since 1954 with numerous documented records available for review spanning from the 1970s to present day.

For example, in the late 1990s, park staff built exclosures in select ecosystems. An exclosure allows for the monitoring of plant life growing within for the purpose of comparing it to the flora growing in an adjacent area. An exclosure prohibits white-tailed deer from entering and eating the plants. This type of study allows interpretive staff to collect data every year on the plants growing inside and outside of exclosures. Interpretive staff look for plant indicator species such as trillium, a plant white-tailed deer selectively eat. Additional information about exclosure studies and successes can be found on page 40 – 42 of this plan.

In addition to ongoing data collection, interpretive staff recently conducted a tremendous amount of research on current science in 2021 for updating the Deer Herd and Ecosystem Management Plan. Research was approached without bias and staff were tasked with finding current up-to-date scientific research on the impacts of invasive species on ecosystems and the general biology and behavior of white-tailed deer. The research timeline was spread out over the course of several months to methodically research this specific topic. Staff approached the research applying decades of combined knowledge and background experience in wildlife management and invasive species, relying on those skills to effectively expand the range of research.

One of the many fascinating articles interpretive staff researched is on soil. Soil is part of an ecosystem and until a recent scientific study was conducted and published it was not realized how much of an impact soil has on the relationship between invasive species and white-tailed deer. All the references that interpretive staff researched are listed within this plan, and more information about the connections between flowers and plants are the subject of personal accounts as documented in Appendix 2.

HEALTHY FOOD WEB

This Healthy Food Web is a small part of the entire ecosystem. It demonstrates the many connections between plants and animals. Yellow arrows point to the plant or animal that benefits from a relationship. White arrows points back to an organism receiving a mutual benefit as well. However, too many of any of these organisms can create an imbalance in the relationships, causing other parts of the web to break down. Some organisms will be negatively affected, while others might receive a temporary positive benefit. In the same way, too few of any of these organisms also lead to imbalances. Each ecosystem depends upon a "give and a take" between all members.

Coyote
(Canis latrans)

As deer populations increase, they eat more trillium, but they also serve as a growing food source for coyotes.

Gray Fox
(Urocyon cinereoargenteus)

Red-tailed Hawk
(Buteo jamaicensis)

White-tailed Deer
(Odocoileus virginianus)

Mutualism: White-tailed deer disperse the trillium seeds and eat plants that other animals depend on. More deer create more competition in the food web.

Eastern Cottontail
(Sylvilagus floridanus)

If there are fewer trillium, rabbits may leave the area to find other food. Predators that depend on rabbits will also need to look for food elsewhere.

Northern Flicker
(Colaptes auratus)

Fewer trillium lead to fewer ants that depend upon them. Fewer ants mean Northern Flickers must look elsewhere for the ants they love to eat.

Great White Trillium
(Trillium grandiflorum)

Trillium is a favorite treat to White-tailed Deer.

Spine-waisted Ant
(Aphaenogaster Sp.)

Mutualism: Some ants depend on the fatty elaisomes (fat and protein packet) attached to trillium seeds. They carry the seeds to their colony, eat the elaisomes, then drop the seeds, dispersing trillium seeds across the land. This spreads Trillium to new areas.

Great White Trillium Seed
(Trillium grandiflorum)

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GENERAL DEER HERD MANAGEMENT BACKGROUND

(The following information has been excerpted from the publications A Review of Deer Management in Michigan – Michigan Department of Natural Resources, September 2009 and Managing White-Tailed Deer in Suburban Environments – A Technical Guide, DeNicola, VanCauteren, Curtis & Hygnstrom, 2000).

Introduction

White-tailed deer (Odocoileus virginianus) are important to the people of the state of Michigan. The expectations, concerns, and values associated with deer by Michigan residents are diverse and complex making successful management of this natural resource challenging. The Michigan Department of Natural Resources (MDNR) is responsible for the management of deer in this state and uses a scientific approach when considering the biological, social, economic, and political aspects of deer management.

The MDNR has been managing Michigan's deer herd since the late 1800s with 1895 marking the beginning of dedicated deer management in the state in response to legislation limiting market hunting. Deer populations had plummeted as records showed over 90 percent of deer taken were by commercial hunters, and less than 10 percent by sportsmen. By the 1930s populations had boomed again, and citizens were recognizing overabundance in the form of car collisions and crop damage. Today, there are about 1.7 million deer across Michigan with many regions, including suburban neighborhoods reporting overabundance. There is no question that the Michigan deer herd will generate considerable discussion and debate in the future. Such debate is essential to develop management procedures to keep our deer herd and deer range in good condition. (Michigan Department of Natural Resources).

Although wildlife management recommendations and decisions are based on the best available biological science, they are nearly always determined within a social context where stakeholder values and priorities must be addressed. The integration of social considerations into scientific examination is necessary to move wildlife management recommendations and actions forward, especially in an environment where public knowledge and inquiry regarding management of public resources is significant.

This Deer Herd and Ecosystem Management Plan is a distillation of much of the scientific information pertaining to deer, deer-related issues, and deer-management best practices, and presents the best available biological and social science relevant to these topics. The information presented in this document was obtained from published scientific literature,

agency and university reports, unpublished agency data, and personal communication with deer experts. The purpose of this review is to present general information on deer and specific information relevant to deer management in Michigan.

DISTRIBUTION, TAXONOMY AND PHYSICAL DESCRIPTION

Deer are probably the best recognized and most widely distributed large mammal in North America. The white-tailed deer is found in nearly every state in the United States. Deer can be found throughout the southern provinces of Canada, in tropical forests of South America and even in the midst of urban locations in Michigan.

White-tailed deer are the largest herbivore in many forested ecosystems in the eastern United States (McShea 2012). White-tailed deer successfully live across a wide range of habitats and can be found in every Michigan county (Baker 1983). Deer are creatures of the forest edge and thrive in agricultural areas interspersed with woodlots and riparian habitat. They favor forest stands in early succession in which brush and sapling browse are within reach. Dense forest cover is used for winter shelter and protection.

White-tailed deer are ungulates, or hoofed mammals, belonging to the family Cervidae. The white-tailed deer's coat and color change semi-annually. Deer are more reddish brown with a thin coat during summer months. Deer shed their summer coat in late summer or early fall and replace it with a thick, brownish-grey winter coat. The underside of the tail, belly, chin, and throat are white year-round. The winter coat consists of both a short underfur and hollow, outside guard hairs that provide additional insulation and protection during the winter. The winter coat is shed in mid- to late-spring. Hair color is alike in both sexes. Fawns are born with white spots in the upper coat which provides excellent camouflage. They shed their spotted coats in three to four months, and it is replaced with a brownish-grey fall and winter coat.

In Michigan, adult deer typically weigh between 125 to 225 pounds live weight and stand 32 to 34 inches at the shoulder. Female deer (does) tend to be smaller than males (bucks) of the same age from the same area. Deer weights vary considerably, depending upon age, sex, diet, and the time of year the weight is checked. Deer are extremely agile and may run at speeds of up to 30 miles per hour. White-tailed deer are also good swimmers and often enter rivers and lakes to escape predators or insects.

REPRODUCTION

Deer productivity rates (fawns produced per doe) generally are highest in regions with an abundance of nutritious food. Thus, deer occupying fertile farmland regions typically have higher productivity rates than deer in heavily forested regions. Likewise, deer living in areas with low annual snow accumulation tend to be more productive than those living in regions where snow covers available food for months at a time and inhibits deer movement to food sources. In southern Michigan where winter conditions are relatively mild, a high percentage of fawns and almost all yearling and adult does breed each year.

Productivity rates also vary with age of the doe. Adult does have the highest productivity rates, and yearlings (deer that are 1 year old) have higher productivity rates than fawn does (less than one year old). In addition, the health of a doe, often a function of habitat quality, influences her reproductive capacity as females from the best range produce more fawns than those from poor range. Adult females (three years and older) usually produce twins, and triplets are not uncommon.

White-tailed deer are seasonal breeders, with breeding occurring October through December in northern parts of their range like Michigan (Green et al., 2017). Peak mating activity is in November. Female deer generally enter estrus for a 24- to 48-hour period. If not bred, does will cycle two or three times until bred. One buck may breed several does. A male deer will court the female and guard her until they mate, as well as during the remainder of her estrus, and then find another doe to mate with (Turner et al., 2016). On average white-tailed deer have a 200-day gestation, with peak of fawn drop is mid-May to mid-June. Time of birth can vary depending on the age of the doe. A deer can reproduce as early as six months of age. Young deer typically have a single birth, while mature does tend to have twins, or on occasion, triplets (Green et al., 2017). For the first couple of weeks, does leave their fawns in a hiding place for several hours at a time, returning briefly to nurse them. This strategy reduces the likelihood of predators locating the newborn fawn. Fawns begin to follow their mother on her foraging trips at about four weeks of age. White-tailed deer fawns are nursed for eight to 10 weeks before they are weaned.

Chronic Wasting Disease (CWD) should not affect reproduction. Males positive for CWD are less likely to participate in mating (Blanchong et al., 2012). In the study more CWD positive females were identified than females negative for CWD. This could potentially be explained with how CWD deer are more likely to be harvested. CWD-positive mothers were found in closer proximity to their female fawns than CWD-negative mothers (Blanchong et al., 2012).

In southern Lower Michigan, where habitat for deer is excellent and winters are relatively mild, about 30 to 50 percent of females breed as fawns and produce a fawn themselves when one-year old. In northern regions of the state, particularly in the Upper Peninsula (UP), only about

5 percent of one-year-old does produce a fawn. Pregnancy rates for does two years and older typically are very high, ranging from 80 to 95 percent. Pregnant one-year old deer usually produce a single fawn, whereas older does usually produce twins, with singles or triplets possible depending upon their age and nutritional status.

FOOD HABITS

The diet of white-tailed deer changes with the seasons. Succulent herbaceous plants, such as ferns, wild strawberry, dandelions, and goldenrod are preferred by deer during the summer months, and these "forbs" are supplemented with berries, mushrooms, new leaves from trees, and aquatic plants. Some examples of their food preferences are trillium, wild strawberry, blackberry, dogwood, maples, oaks and oak acorns, poison ivy, and grasses (University of Missouri Extension, 2012).

A wide variety of agricultural crops are also eagerly consumed by deer, including corn, soybeans, oats, barley, alfalfa, pumpkins, and potatoes. In the autumn, deer continue to make use of available agricultural crops but turn to hard mast crops that are high in energy, such as acorns and beechnuts, as well as soft mast such as apples and other fruits. During winter, deer abruptly change their diet in northern areas to stems and buds of woody plants. Favorite winter "browse" species in Michigan are white cedar, maple, birch, aspen, dogwood, and sumac, as well as many shrubs. Deer in northern Michigan typically enter a "negative energy balance" during winter and lose weight even when browse is present and abundant.

CAUSES OF MORTALITY

A deer's life expectancy in Michigan is influenced greatly by hunting pressure and hunting regulations. Simply put, Michigan has a large number of deer hunters who are very effective at harvesting deer. In 2020, an estimated 540,000 hunters spent 8.5 million days afield and harvested about 411,000 deer. Statewide, 51 percent of hunters harvested a deer, about 26 percent took an antlerless deer (doe or fawn), and 35 percent took an antlered buck. About 18 percent of deer hunters harvested two or more deer. Poaching, or illegal taking of deer by people, is also a cause of mortality.

Vehicle-deer collisions are another major source of deer mortality in the state. According to State Farm Insurance research, Michigan ranks 4th in the nation in reported vehicle deer collisions. During 2021, there were 51,103 reported deer involved collisions with four motorists killed and 1,143 injured (Michigan Traffic Crash Facts 2021). Crashes occurred most often in Michigan's southern, heavily populated counties. Vehicle-deer crashes occur during all months of the year, but they are especially prevalent during autumn (October-December) when roadways offer the last green forage of the season, corn fields are being

harvested, the deer mating season ("rut") is in progress, and daily commute occurs around dawn and dusk, when deer are most active.

In Michigan, white-tailed deer are susceptible to a host of diseases and parasites. Many parasites and some diseases may weaken infected animals or use them as a host but generally are not fatal. Others can be deadly to individuals and may potentially affect local or even statewide populations. Supplemental feeding and high deer density are major players in the spreading of disease, a large factor in deer mortality (VerCauteren & Hygnstrom, 2011; O'Brien et al., 2002, 2006). In recent years, several significant disease outbreaks in Michigan's deer herd have stimulated public concern and driven deer management decisions as real and perceived threats are realized.

Bovine tuberculosis (bTB), caused by Mycobacterium bovis, was first diagnosed in free ranging Michigan white-tailed deer in November 1975. (Schmitt et al. 1997). Since that time, the extent and characteristics of the outbreak, as well as its ongoing management by the DNR, have been extensively described (de Lisle et al. 2002, Hickling 2002, O'Brien et al. 2002, O'Brien et al. 2006, Schmitt et al. 2002). Bovine tuberculosis is primarily of concern because of its ability to infect a wide variety of species (Oreilly 1995), including humans (Wilkins et al. 2003, Wilkins et al. 2008), and the resulting economic costs of infection for the livestock industry due to herd condemnations and closure of markets (Morris et al. 1994). After more than 13 years of surveillance and research, white-tailed deer remain the only proven reservoir of infection for cattle besides other cattle (Corner 2006).

Chronic Wasting Disease (CWD) is a Transmissible Spongiform Encephalopathy (TSE), caused by mutant cellular protein that affects four species of North American cervids (Sigurdson 2008, Williams 2005, Williams et al. 2002), including white-tailed deer. The clinical features, pathology and epidemiology of the disease have been well described in areas where the disease is endemic. Both simulation modeling (Gross and Miller 2001, Miller et al. 2000) and field research (Miller et al. 2008) suggest that once established, CWD can build to high prevalence in infected deer populations, resulting in marked decreases in survival of infected deer and likely causing substantial population declines over decades. Where the disease has become established, no management agency has thus far been able to control its spread, let alone eradicate it.

CWD transmits easily through a deer population via deer-to-deer transmission, and transmission through vegetation or soil is possible. CWD can also spread through bait piles where prions are transferred from the saliva of an infected deer onto the bait, and later consumed by a healthy deer. It is unclear how long CWD can survive in soil and plants, though studies on the prions that cause CWD, and other similar prions, have detected prions persisting in plant and soil samples several years after introduction. Studies have shown that after a deer contracts CWD it has a much lower chance of survival than a deer that does not have CWD, with the annual survival rate of CWD positive deer around 39.6 percent, compared to CWD negative deer at 80.1 percent (Edmunds et al., 2016).

Following confirmed diagnosis of Michigan's first case of CWD in a captive white-tailed deer in a Kent County facility in August 2008, the DNR's intensified surveillance was implemented per the Michigan Surveillance and Response Plan for Chronic Wasting Disease of Free-Ranging and Privately-owned/Captive Cervids (Michigan Department of Natural Resources/Department of Agriculture. 2002). In 2008, 9,151 free-ranging deer were tested for CWD statewide, including 1,523 from a nine-township area surrounding the infected captive facility. All were negative. The first occurrence of CWD in free-ranging deer in Michigan was confirmed in 2015, and since then CWD has been confirmed in free-ranging white-tailed deer in the Lower Peninsula from Clinton, Ionia, Ingham, Jackson, Kent, Gratiot, Eaton, and Montcalm counties. Presence of CWD in captive populations has been observed in eight cases since 2008.

Epizootic Hemorrhagic Disease (EHD) is an acute, infectious, often fatal viral disease of some wild ruminants. This malady is characterized by extensive hemorrhages. EHD has occurred in significant outbreaks in deer in the northern United States and southern Canada. Die-offs of white-tailed deer in Michigan occurred in 1955, 1974, 2006, and 2008. Total mortality in these events ranged between 50 and 200 deer. Because of its very high mortality rate, EHD can have a significant effect upon the deer population in a given area, reducing numbers drastically. There is no known treatment for the disease, and there is no evidence that the virus can infect humans.

Eastern Equine Encephalitis (EEE) is a fatal viral disease of horses that can infect a variety of avian and mammalian species but seldom causes clinical disease. It rarely occurs, but white-tailed deer can be infected, and the disease is fatal in infected animals. There have been single reports of mortality in deer in Georgia (Tate et al. 2005) and Wisconsin and multiple cases in Michigan (Schmitt et al. 2007). The die-off in Michigan occurred in 2005 in the southwestern portion of the state. Seven mortalities were documented in this outbreak. Due to a high mortality rate, EEE can have a significant effect on the deer population in a given area, but because it rarely occurs, it is not an important mortality factor to the state as a whole. Although it occurs rarely, humans are susceptible to this disease, and it can be fatal.

Lyme Disease is an illness caused by a spirochete bacterium (Borrelia burgdorferi). This disease is transmitted to humans and animals primarily by the bite of the tick, Ixodes scapularis. The white-tailed deer is a host for the adult stage of this tick and, therefore, can be involved in exposing humans to the tick, and consequently, to the bacterium. White-tailed deer do not develop disease when infected with Borrelia burgdorferi, and, therefore, this disease is not an important mortality factor (Brown and Burgess 2001). This disease is of public health significance as the bacterium can affect the cardiovascular system and the neurological system and cause severe arthritis.

Starvation, often due to a drop in available food over winter, is also a cause of mortality in deer. If deer are unable to find proper nutrition, they become more susceptible to illness. Deer can survive winter without ideal nutrition, losing as much as 25 percent to 30 percent of their body weight while surviving. However, when malnutrition is mixed with a severe winter, deer experience higher mortality rates.

Finally, predation is the last major factor in mortality. Deer are primarily predated by wolves and coyotes, as well as bears, bobcats, cougars, and humans (Patton et al., 2018). Deer become easy targets for coyotes at the end of winter when food is scarce. Coyotes will go after fawns and deer that are susceptible to predation such as old, sick, or injured individuals (VerCauteren & Hygnstrom, 2011). Hunting in Michigan accounts for a fair number of deer mortalities as well, with the state reporting 411,000 deer harvested in 2020 alone (Michigan Deer Harvest Report).

SOCIAL STRUCTURE AND BEHAVIOR

The social organization of white-tailed deer is largely matriarchal with the most common social group being an adult doe, some of her female offspring from previous years, and all their fawns. Sometimes three or four generations of related does are present in a family group. When fawning season arrives in mid-May, adult does leave the family group and remain alone to bear and rear their fawns.

Deer activity is usually highest during fall because of breeding behavior and the need to increase food consumption while preparing for winter. Deer decrease their activity in winter when food is limited, and their mobility is hindered due to snow. Non-migratory deer in the southwestern lower peninsula of Michigan had an estimated annual home range size of 0.2–2.9 square miles (Pusateri 2003). Yearling and adult does in south-central Michigan had seasonal home ranges of 0.3-0.8 square miles (Hiller 2007). Deer occupying better habitats can fulfill all their necessary requirements in smaller areas whereas deer residing in poorer ranges may have to travel further distances to find suitable food and cover. Males generally have larger home ranges than females.

Deer create familial groups typically composed of only female deer (other than male fawns), that are often related to one another, and contain two to 12 deer. (Innes, 2013). The makeup of these females typically consists of a maternal doe and her fawns from that year and previous years. The females stay in this group and the males disperse. Sometimes females in this group will not be related to one another. When deer are not related, studies have shown that they will be with individuals that share habitat interests throughout the year (Comer et al., 2005). These groups will stay together throughout the year except during the fawning period. After spending eight to 10 weeks with their fawns, deer will re-group into their families. Other exceptions to only females being in these groups is when there is limited food and in wide open fields; where herds can become integrated groups of males and females (Innes, 2013).

CARRYING CAPACITY

Carrying capacity is a term that refers to the maximum sustainable size of a population. Carrying capacity of a population is limited by any number of constraints, both biological (Biological Carrying Capacity) and social (Social Carrying Capacity). The effective and appropriate management of deer populations must consider both biological and social carrying capacities.

BIOLOGICAL CARRYING CAPACITY (BCC)

Biological carrying capacity is defined as the maximum number of animals that a given area can support over a prolonged period of time (McCullough 1984). BCC is determined by the capability of the area to provide the habitat components of a wildlife species – food, water, cover, and space.

As deer populations grow, individual animals compete for the resources that their habitat provides. In Michigan, healthy, well-fed does can produce triplet fawns and routinely produce twins. Under ideal conditions, even fawns can breed and produce their first young when they are about 1-year-old. However, as populations near BCC, adult does raise fewer fawns, fawn survival decreases, and fewer fawns are capable of breeding. Another impact when a deer population approaches BCC is antler development in yearling bucks may be slowed. In addition, more deer die from malnutrition. When BCC is reached, the number of deaths equals the number of births.

BCC varies throughout Michigan based on climate and the distribution of habitat. BCC may also change over time, if forests age without cutting or burning, and may fluctuate with annual variations in weather. Although these considerations mean that BCC cannot be exactly known in any given year and is somewhat of a moving target over time (Macnab 1985), using it as a context in setting population management objectives is possible if long-term trends are used to establish average conditions and short-term anxieties are acknowledged as having periodic significance in population dynamics (Strickland et al. 1994).

When deer populations remain at or above BCC for extended periods of time, BCC may be reduced due to vegetation damage that can result from the sustained browsing pressure of high deer populations. This sustained activity may alter the plant species, structural composition, or successional processes of the landscape, resulting in negative impacts on the habitat, which can result in cascading effects on other wildlife species long before negative impacts on the condition of deer occur (deCalesta 1997).

Westerfield et al, from their 2019 study "Methods for Managing Human-Deer Conflicts in Urban, Suburban, and Exurban Areas" describe BCC in its simplest form as the maximum number of deer that a habitat could support on a continuous basis, but warns that the BCC may not be a desirable management objective as a deer population at maximum BCC may negatively impact plant and animal communities within their range, and may spread disease at higher rates due to herd density. This study also cites increased availability of artificial food sources, such as agricultural farms, having an undue influence on maximum BCC and inflating populations beyond capacity of wildland environments.

Wild deer populations are sustained by the habitat components of food, water, cover, and space. As deer populations increase, individual animals compete for these resources, resulting in an overall lower quantity and quality of these resources being available to each individual animal.

SOCIAL CARRYING CAPACITY (SCC)

The deer population level at which the local human population can tolerate or accept the problems associated with a deer herd is commonly referred to as the social or cultural carrying capacity. The SCC is related to the identification and state of negative impacts created by deer (Westerfield et al., 2019).

The concept of SCC proposes the abundance of a wildlife species is limited by the human social environment or human tolerance for that wildlife species. The SCC is not simply the highest level of deer abundance that will be accepted. SCC is a notion proposing that human society represents a social environment capable of setting limits on the number and distribution of a wildlife species.

SCC is defined by both the maximum and minimum population sizes society will tolerate. That is, Michigan society may not tolerate too many deer, but it may not tolerate too few either. SCC is also defined by the interactions between humans and a wildlife species. Issues and conflicts are created when stakeholders disagree on what level of interactions is acceptable. The status of such deer-related issues is a critical feature of the SCC model. Deer management can be less about management of deer than about managing the issues created by deer–human interactions (which can be both negative and positive) and differences in stakeholder tolerances regarding those interactions.

A SCC for deer is defined by the level of abundance and interactions acceptable to enough stakeholders such that there is a low level of deer-related issues (Minnis and Peyton 1995). When deer abundance and interactions with stakeholders fall within a range that most stakeholders can accept, deer are being managed within SCC. If no range is agreeable to key stakeholders, a SCC does not exist and could only be created by shifting attitudes and tolerances of stakeholders. The SCC at the Metroparks has been defined between the minimum of providing public enjoyment of wildlife opportunities and promoting a healthy deer

herd and a maximum where impact of deer become detrimental to other plant and wildlife populations within the rest of the ecosystem.

ECOLOGICAL IMPACTS

White-tailed deer evolved in a forested environment, and it is likely that there are both wildlife and plant species that benefit from the presence of deer and their activities. By foraging selectively, deer affect the growth and survival of many herbaceous, shrub and tree species, modifying patterns of relative abundance and species interactions. When populations are not in balance with habitat, deer can alter their environment by over-browsing preferred plants and destroying the vegetative cover upon which they and other species depend.

Over-browsing can result in reduced availability of adequate ground level vegetation (herbaceous plants, seedlings, saplings, and shrubs) that provides the food and cover required by deer (Alverson et al. 1988). In addition to impacts on deer habitat, over-browsing by deer can degrade the quality of habitats for other wildlife species and alter entire ecosystems. Numerous wildlife species use ground level and mid-story vegetation of forests in Michigan for nesting and escape cover that may be negatively impacted by intense deer browsing (deCalesta 1997, Cote et al. 2004). In addition, deer compete directly with wild turkeys, ruffed grouse, squirrels, and a variety of other birds and small mammals for acorns, fruits, and other mast.

Deer browsing can impact the quality and viability of entire natural communities. Damage to natural communities extends to a variety of other species including insects, birds, reptiles, amphibians, and other mammals that are dependent on those communities. Impacts on rare plants, animals, and communities are of special concern as years of over-browsing can threaten viability of local populations. In addition, over-browsing of native vegetation facilitates invasion of aggressive, nonnative plant species like garlic mustard. Many of these invasive plants degrade habitat for deer and other species by crowding out preferred deer forage and changing ground flora to species that provide little or no benefit to most wildlife species. Management activities designed to benefit deer must ensure that other resources are not negatively impacted. It is important that deer numbers are kept below levels where they may cause long-term damage to the ecosystems in which they live.

An ecosystem may seem healthy at first glance but may be experiencing ecological disturbance. Just one disturbance can generate several negative impacts on an ecosystem. White-tailed deer are opportunistic and selective browsers; consuming what is available to them in the area as well as choosing based on nutritional value. Deer impact the food chain (trophic levels) directly and indirectly. This impact on the plant community will cascade to other environmental factors such as soil nutrients and resource availability for vegetation (Patton et al., 2018). When deer preferentially consume a plant species in an area, this will

harm not only the individual plant species but also other organisms within the area, creating a ripple effect (Shelton et al. 2018).

If deer preferentially consume acorns found in one area of the forest floor, oak tree generation will be suppressed. This impact will result in a lower density of oaks, changing the composition of plant density in that area (McShea, 2012). A reduction in canopy, and overall density of vegetation impacts other animals and organisms that rely on these features for food and habitat. This may cause a dependent species to leave a habitat in search of food and shelter, where they may suffer mortality from competition and predation. This migration may affect predator-prey relationships as well, diminishing available prey for predators, resulting in population decline. Similarly, the exodus of a predator from an area due to habitat change may result in a boom of prey species population, which can further drive habitat change as browse pressure increases.

Changes in structure and diversity of plant habitat can drive a reduction in availability of quality food sources for desirable species, and increase competition among individuals of a species, or between species. This cycle can lead to population booms and busts, and a new equilibrium is reached.

In addition to overall population, selective browsing pressure can severely impact individual species and change community composition. Great white trillium ranks high on the preferential hierarchy of deer foraging behavior. Deer may prefer to browse all the trillium in one area, impacting other organisms that rely on trillium as a food source as well, such as the spine-waisted ant (Aphaenogaster spp.), which will in turn result in cascading effects on that community. With trillium depleted, ants must find a new source of food. The disturbance created by the complete removal of this species from the landscape create an opportunity for invasive species to rapidly occupy available habitat. While these invasive species may occupy the same physical space, and represent vegetation cover, these species do not provide the same ecological services as the native trillium provided, in food, habitat and community complexity. This loss in diversity will drive competition for remaining quality resources and increase pressure on native plant and animal species. If competition is sufficiently fierce, a species may relocate from the area entirely, further driving a loss in biodiversity and community complexity or quality.

CONFLICTS BETWEEN HUMANS AND DEER

While white-tailed deer are highly valued by Michigan residents, conflicts between deer and humans occur at various levels of intensity across the state. Damage to agricultural and horticultural crops, suppressed forest regeneration, high rates of deer-vehicle collisions, and destruction of landscaping and other property by deer in urban/suburban areas can be significant.

Deer readily feed on a variety of agricultural crops and can reduce yields significantly. Agriculture is an enormous part of Michigan's economy and in 2007 more than 55,000 farms

encompassing over 10 million acres, produced a net farm income of $2.03 billion and generated $71.3 billion in economic activity. Michigan ranks 19th nationally in total cash receipts for agricultural products and is the leading producer of crops such as dry beans, blueberries, cherries, cucumbers, and bedding and garden plants in the U.S. (USDA 2009). Agricultural crops are damaged by deer in most Michigan counties, but most significant damage occurs in areas where deer numbers are high and agricultural crops are common on the landscape. It is estimated that deer cause on average a third of all wildlife generated crop damage to corn in the United States (VerCauteren & Hygnstrom, 2011).

Another significant conflict between deer and humans is deer-vehicle collisions. Approximately 1.5 million deer-vehicle collisions occur on U.S. roads annually and Michigan ranks fourth in the country in reported collisions. In 2021, 51,103 deer-vehicle collisions were reported in Michigan resulting in 4 human deaths and 1,143 injuries to the persons involved (Michigan Traffic Crash Facts 2021). Reduction of deer numbers in areas where deer vehicle collisions present a significant public safety concern is imperative, as are education campaigns that promote safe driving and explain what to do when deer are present on roads.

Among the conflicts that can occur between humans and deer are, spread of zoonotic diseases (disease that is passed from an animal to human), car-deer collisions and injuries, and crop damage. White-tailed deer provide a good host for ticks due to their thick fur and contribute to the transmission of tick-borne disease. Lyme disease is a major concern for human health, creating conflict as deer are a main host for various types of ticks. A human can be infected by Lyme disease if a deer tick, (also known as black-legged tick) which is carrying Lyme disease, bites and attaches for two or more days. However, recent studies are exploring a documented increase in the speed of transmission of Lyme disease from tick bite to infection in humans.

Bovine Tuberculosis (bTB) represents another potential conflict, as bTB has the potential to spread to humans. While rare, humans that encounter infected deer may become infected. Among human cases of TB in the United States, bTB makes up less than 2 percent of all infections. (CDC.gov)

Physical conflict between humans and deer are not limited to car-deer collisions but can occur as direct physical injury to humans. While wildlife lovers enjoy experiencing deer in the wild, deer can become habituated to regular or close contact with humans. Interactions between deer and humans can become detrimental to both parties when they alter a deer's natural behavior. This can expose the animal to hazards such as road traffic as they become habituated to seeking out human interaction. Likewise, this altered behavior may become a hazard to humans interacting with deer, as the animal's behavior may be erratic or aggressive in seeking out human interactions, especially where food is involved. This learned behavior can become more pronounced when humans are engaging in feeding of wildlife, which is prohibited by the state. Wildlife is inherently 'wild', and the unpredictable nature of animal

behavior can result in injury to humans. This is particularly the case during mating and breeding season, or with animals protecting their young. While animals in a park or urban setting may become unafraid or habituated to human presence, at any point their innate animal instinct to fight or flee can rise to the top, resulting in injury to humans who have come too close.

URBAN/SUBURBAN DEER HERD MANAGEMENT

White-tailed deer are an important part of the culture in Michigan. As white-tailed deer have expanded in number and adjusted to living in and around urban areas, they have taken up permanent or semi-permanent residence in many Michigan communities. With adequate cover and food available deer successfully navigate sidewalks, traffic, and backyard fences, appearing quite comfortable with daily interactions involving humans, barking dogs and vehicles. Management of urban/suburban deer populations can be difficult. Similarly, as deer populations increase and conflicts with deer arise, different expectations, concerns, and values make addressing these conflicts problematic.

Deer populations in rural settings are managed nearly exclusively by recreational hunting apart from utilizing deer damage shooting permits for addressing specific situations. However, these lethal techniques face several challenges to application in many urban/suburban areas including: (1) real or perceived safety concerns, (2) conflicting social attitudes and perceptions about wildlife, (3) hunting and firearm discharge restrictions, and (4) liability or public relations concerns. (DeNicola 2000). Lethal tools are more effective than others but may be unacceptable in areas where social or safety concerns are an issue. Applying a combination of several techniques specifically tailored for each situation should prove to be more successful than utilizing a single tool.

EDUCATION AND PUBLIC PERCEPTION

Johnson and Horowitz (2014) surveyed the public's perception of ecological impacts caused by deer. This survey evaluated participants' acceptance of deer populations in a wetland setting, if nothing was done to control deer population. The study targeted residents living in the surrounding area and asked them to rate the area based on "biodiversity and condition, personally important uses, and preferred management approaches," as well as deer-specific questions and general environmental views. The survey determined that making additional educational resources available to the public about deer impacts to an ecosystem may lead to increased support for population management.

HCMA is committed to the transparent disclosure of the processes used to preserve wildlife and their surrounding ecosystems.

PREFERENTIAL BROWSING

Deer are selective feeders and the effects of preferential browsing by deer can be seen in trees and forbs alike. Overabundant deer populations can have devastating effects on many native tree populations including maple, oak, and dogwoods. Impacts may not be immediately apparent on large, established trees, but saplings represent an ideal height and tenderness for deer to browse. Forested communities are resilient and naturally withstand some browsing, but excessive browsing results in these communities struggling to regenerate as older trees mature and die (Aronson & Handel, 2011). A more subtle, yet immediate impact can be seen when comparing numbers and diversity of spring wildflowers over consecutive years.

Often, invasive plants are avoided by the deer and other herbivores leaving them with little in the way of competition. Plants such as Japanese barberry, garlic mustard, and Japanese stiltgrass are consistently avoided by deer, while Asian bittersweet, common privet and certain honeysuckles are sought after (Averill et al., 2016). The unfortunate consequence is that there is increased pressure on native plants as deer seek out other, more desirable options. Both avoidance and attraction by deer can contribute to the proliferation of an invasive plant. In cases where the plant is avoided, growth goes unchecked and native plants are crowded out. In cases where animals are attracted to the plant, it is often the fruits of that plant that are consumed, allowing seeds to spread elsewhere, such as with autumn olive and multiflora rose. Autumn olive and Asian bittersweet, for example, have berries that deer are attracted to and spread via their consumption. Tree of heaven (pictured left), an invasive sumac species, is preferred browse for deer when alternatives are sparse.

SOIL DISTURBANCES

Soil is made up of a combination of broken-down bedrock and decomposed organic material and serves as a major determinate of habitat (Dickman and Leefers, 2003). Soil is also home to bacteria and fungus that help break down waste and convert it to nutrients for uptake by plants. Nutrients, such as nitrogen, are converted from waste in the soil and are needed by plants. Soil is a full living system, and as such it is also vulnerable to change when the conditions around it change.

SPREAD OF SEEDS

Plants have adapted many ways in which to spread their seeds to further distances than their immediate area. Rather than conscious decisions, these are adaptations that make it more likely the seeds may catch on the wind, be eaten by an animal, or hitch a ride in fur, for

example. Deer are certainly a part of this dispersal and frequently carry seeds in their fur. They are also responsible for the spread of seeds through consumption of berries, as deer enjoy the fruit of a variety of invasive plants. Asian bittersweet, honeysuckle, and wild raspberries are all preferred fruits sought preferentially by deer (Averill et al., 2016). The seeds of Asian bittersweet rely on an animal digesting its seeds to remove the seed's coating, in a process called scarifying.



(Pictured above: Asian Bittersweet, Honeysuckle, Wild raspberry)

CHANGE IN CANOPY STRUCTURE

One of the more alarming effects of deer overabundance in forested communities is the alteration of the forest canopy. Changes in forest canopy structure are being driven by changes in climate and will continue change rapidly as this process alters our landscapes. While deer preferentially browse fresh green plants during most of the year, winter forage shifts their diets to consumption of woody plants as a sustenance food source.

Forested communities are adapted to withstand browsing, as trees will put off many more seedlings and suckers than what are needed to maintain regeneration. When trees have been excessively browsed, there may not be enough regeneration to reforest an area that has been logged, experienced a storm, or that simply has a high number of aging trees (Aronson & Handel, 2011). Particularly susceptible tree species include red oak and sugar maple, in fact, up to 60 percent of red oak seedlings are browsed by deer (Blossey, Curtis, Boulanger, and Davalos, 2019). Gaps left in the forest floor coupled with sunlight let in from reduced canopy cover then leave room for invasive species to establish themselves putting additional stress on native species.

ENVIRONMENTAL CONTAMINATION AND BIOACCUMULATION

In October 2018, the Michigan Department of Health and Human Services (MDHHS) and MDNR issued a 'Do Not Eat' advisory for deer taken within five miles of Clark's Marsh in Oscoda Township. The advisory was due to high levels of PFAS chemicals found in deer taken within five miles of the Marsh. One deer out of twenty tested around the former Wurtsmith Air Force Base was found to have high levels of PFOS, a type of PFAS. The level of PFOS in the muscle of the deer was 547 parts per billion, exceeding the level of 300 ppb at which action is recommended. PFAS was either not found or was at low levels in muscle samples from the other 19 deer. Although only one deer of this group tested at such high

levels, the advisory was issued to protect the health of anyone eating venison taken within approximately five miles of Clark's Marsh.

After these findings, in 2019 deer in Oakland County's Proud Lake Recreation Area were investigated because elevated PFOS levels had been identified in fish collected from Kent Lake. Surface water samples collected in July, August, and October 2018 from Norton Creek (which flows into the Huron River) and from the Huron River (downstream of Norton Creek) had elevated levels of PFOS. In April of that year, samples were taken from 20 white-tailed deer within five miles of Norton Creek (Lyon Township, Oakland Co.) to test for PFAS. Samples of muscle, liver, kidney, and heart were tested for multiple PFAS chemicals.

No PFAS were found in any muscle or heart samples. In liver and kidney samples, PFOS was the only PFAS found. Based on this data, MDHHS concluded consumption guidelines were not needed for deer from the Norton Creek area. This said, organs including the liver and kidneys may contain higher levels of chemicals than muscle, thus MDHHS recommended that people not eat the organs.

Integrated Management Strategies

No single technique or strategy is universally appropriate. The complexities of suburban deer issues and the current limitations of available techniques make quick fix solutions unlikely. Resolving conflicts associated with deer often requires an integrated management program. Short-term strategies can relieve immediate problems, while long-term approaches will maintain deer populations at target levels. Combining two or more methods may improve results and increase the acceptability of the program for a wider range of stakeholders. Management programs should be monitored to assess their impacts. Baseline data (e.g., roadkill reports, vegetation impacts, deer health, population census and homeowner complaints) will be required to determine accurately the effects of any management action and to evaluate program effectiveness.

NONLETHAL MANAGEMENT OPTIONS

Nonlethal techniques are generally well accepted by the public. However, limited effectiveness and/or high cost may prevent their exclusive use to resolve deer conflicts. Nonlethal techniques can be justified when the potential financial savings from their applications are equal to or greater than the cost for implementation. Nonlethal techniques may not affect deer impacts to plants and animals on a community wide scale because these methods were designed to supplement, not replace, deer population management. Consequently, nonlethal alternatives are best employed within the context of a comprehensive management program.

HABITAT MODIFICATION

Deer adapt well to nearly all human modified environments, except for downtown urban locations and other large areas that are devoid of woodland cover. These intensely developed urban areas are usually less aesthetically appealing to people than suburban landscapes that contain a patchwork of woodlots and homes. Therefore, habitat modifications to discourage deer presence are rarely practical.

BAN ON DEER FEEDING

At the time of this writing (fall 2021), the Michigan DNR has banned baiting and feeding in the entirety of the lower peninsula of Michigan.

UNPALATABLE LANDSCAPE PLANTS

Although deer are generalist foragers, they do have preferences for certain plant species. Selecting less palatable herbaceous and woody plants can minimize deer browsing to ornamental plants (Cummings et al. 1980, Fargione et al. 1991, Craven and Hygnstrom. 1994, Curtis and Richmond 1994). Careful plant selection for home landscapes, combined with the selective use of repellents, may minimize damage if deer-feeding pressure is low to moderate.

Few ornamental plant varieties, however, are classified as rarely damaged by deer, and application of this technique is limited in areas with high deer densities.

REPELLENTS

Repellents are best suited for use in orchards, nurseries, gardens, and on ornamentals or other high value plants. High application cost, label restrictions on use, and variable effectiveness make most repellents impractical for row crops, pastures, or other low value commodities. Success with repellents is measured in reduction of damage; total elimination of damage should not be expected (Craven and Hygnstrorn, 1994). Repellents work by reducing the attractiveness and palatability of treated plants to a level lower than that for other available forage. Repellents are more effective on less palatable plant species than for those that are highly preferred (Swihart et al. 1991). Effectiveness also depends on the availability of alternate forage (Conover 1987, Conover and Kania 1988, Andelt et al, 1991), and repellent performance seems to be negatively correlated with deer density. Scientists have classified repellents by four specific modes of action: fear, conditioned aversion, pain, and taste (Beauchamp 1997, Mason 1997).

Fear inducing repellents emit sulfurous odors that mimic predator scents. Conditioned aversion is an avoidance response associated with a treated item and an illness. Pain inducing repellents affect the trigerninal receptors located in the mucous membranes of the

eyes, nose, mouth, and throat. Taste repellents generally include a bitter agent that makes treated items unpalatable. In addition to mode of action, several other factors that influence the effectiveness of repellents must be considered. Some repellents weather poorly, so it is usually best to use products that contain a commercial “sticker" or adherent. Also, repellents only protect the foliage to which they are applied. New growth that emerges after the application of the treatment is unprotected. (Allan et al. 1984). Therefore, repellents have to be reapplied repeatedly during the growing season to retain their effectiveness (Sullivan et al, 1985, DeYbe and Schapp, 1987, Andelt et al, 1991). For peak efficacy, many repellents should be reapplied every four to five weeks as long as deer feeding pressure remains high. (Sayre and Richmond 1992).

SUPPLEMENTAL FEEDING

At the time of this writing (Fall 2021), the Michigan DNR has banned baiting and feeding in the entirety of the lower peninsula of Michigan. This ban makes the practice of supplemental feeding illegal and not viable for the maintenance of deer populations.

FENCING

Fencing is a reliable method to address site specific problems such as landscape or agricultural damage or airport conflicts (Caslick and Decker 1979, Craven and Hygnstrom 1994, Curtis et al. 1994). Fencing also can be used to protect public health in areas where there is a high prevalence of tick-borne diseases (Daniels et al. 1993, Stafford 1993). Agencies often recommend barrier fencing around schoolyards and other high-risk areas to minimize deer access, tick abundance, and the associated risks of contracting Lyme disease. Several factors should be assessed before using fencing as a deer control option. These include fence design, site history, deer density, crop or landscape value, local ordinances, and the size of the area to be protected (McAninch et al. 1983). For a given deer density, the potential for damage will often be greater on larger areas than smaller ones (Caslick and Decker 1979, McAninch et al. 1983). Consequently, large areas often require more substantial fencing designs to achieve a level of protection like small areas. Blocks larger than 50 acres usually require eight-foot-high, woven wire fencing to reliably prevent deer from entering the area if feeding pressure is high.

HAZING AND FRIGHTENING TECHNIQUES

Several techniques can be used to frighten deer away from specific areas. Hazing has been effective under certain circumstances; however, deer often habituate to novel disturbances. In addition, deer may not leave the general vicinity and complaints may arise from neighbors about the noise made by the devices. Hazing is most effective if implemented either before or at the initial stages of a conflict situation. Deer movements or behavioral patterns are

difficult to modify once they have been established. Pyrotechnics provide quick but temporary relief from deer damage. Motion-sensing detectors have been used to trigger both audible and ultrasonic devices for freighting deer to minimize habituation. Strobes, siren, water sprays, and other devices have been used to frighten deer with limited effectiveness. Although deer can detect ultrasound, they are not repelled by it because they do not associate the disturbance with danger (Curtis et al. 1995). The limited efficacy of these nonlethal methods and the established behavior of the deer herd at the Metroparks make these methods impractical for maintaining a healthy herd.

Population Reduction Methods

Population control programs have two phases: the initial reduction phase when the number of deer removed is high, and the maintenance phase after deer densities have been lowered and fewer deer are handled. It should be emphasized that any population control effort requires long-term maintenance. Management efforts typically occur annually following attainment of population density goals or less frequently depending on program efficiency and local wildlife management objectives. Regardless of the culling frequency, the commitment should be to long-term population control program to maintain the deer density near a determined goal. With any technique, the cost per deer handled will increase as the proportion of the population removed or treated increases (Rudolph et al. 2000). High costs associated with diminishing returns may prevent achieving population goals with some techniques. Deer learn to avoid threatening situations, and the use of a variety of methods to capture or kill deer can help maintain program efficiency.

TRAP AND TRANSFER

Trapping and translocation requires the use of traps, nets, and/or remote chemical immobilization (i.e., darting) to restrain deer and shipping crates to translocate captured animals. Most deer immobilization drugs are classified as controlled substances, and their use requires U.S. Drug Enforcement Agency licenses. Capture and translocation has been demonstrated to be impractical, stressful to the deer handled, and may result in high post-release mortality. Deaths of translocated deer have been attributed to capture myopathy (Beringer et al. 1996), unfamiliarity with the release site, and encounters with novel mortality agents (Jones and Witham 1990, Bryant and Ishmael 199 1, Jones et al. 1997, Cromwell et al. 1999).

Even relocations over short distances result in greater rates of mortality and have the added negative result of most deer simply leaving their relocated area (Cromwell et al. 1999). Capture myopathy is a stress-related disease that results in delayed mortality of captured deer. O'Bryan and McCullough (1985) documented 85 percent mortality after one year for

deer captured and translocated in California at a cost of $431 per deer. Other capture and relocation programs have recorded costs ranging from $400 to $2,931 per deer (Ishmael and Rongstad 1984, Drummond 1995, Ishmael et al. 1995, Mayer et al. 1995).

Trap and translocation programs also require release sites that can receive deer, and such areas are often scarce. An additional concern associated with translocation of deer, especially from an overpopulated range, is the potential for spreading disease. The presence of Lyme disease and tuberculosis in some areas of North America makes this a serious consideration. Also, tame deer often seek out comparable residential locations and may create problems like those identified at the trapping location (O'Bryan and McCullough 1988). Land use conflicts and disease concerns caused by relocated deer could lead to questions of liability.

TRAP AND EUTHANASIA

Capture with box traps, Clover traps, drop nets, or rocket nets followed by euthanasia has been assessed or considered in only a few locations (Jordan et al. 1995). This technique can be used in areas where there is a concern about the discharge of firearms or in areas with very high deer densities to complement a sharpshooting program. This method, however, is inefficient and expensive, with costs likely exceeding $300 per deer. Physical restraint and euthanasia of deer in traps is sometimes preferred over chemical means because it allows for the consumption of meat from the deer. Deer are greatly stressed, however, during the restraint phase of the capturing process (DeNicola and Swihart 1997).

SHARPSHOOTING

Several communities have employed trained, experienced personnel to lethally remove deer through sharpshooting with considerable success (Deblinger et al. 1995, Drummond 1995, Jones and Witham 1995, Stradtmann et al. 1995, Ver Steeg et al. 1995, Butfiloski et al. 1997, DeNicola et al. 1997c). Sharpshooting programs have shown a 70 percent deer density reduction on parkland, with a corresponding 31 percent increase in native plant diversity, and a 50 percent reduction of urban deer population in a community sharp shooting program. (Warren, 2011).

A variety of techniques can be used in sharpshooting programs to maximize safety, humaneness, discretion, and efficiency. The cost per deer for sharpshooting programs has varied, ranging from $91 to $310 per deer. The noise associated with discharging firearms after dark in suburban areas must be considered when developing a sharpshooting program. Often the negative public reaction to sharpshooting is minimal if firearms are fitted with suppressors. Also, public safety can be enhanced by having police or other uniformed officials responsible for shooting the deer and/or providing on site security.

The level of experience of the personnel involved and the program design should be thoroughly assessed. As for any population reduction method, the extent and distribution of

access to deer on private or public property will directly affect program efficiency and outcomes. The following methods are recommended for sharpshooting programs: (1) use baits to attract deer to designated areas prior to removal efforts, (2) shoot deer from portable tree stands, around blinds, or from a vehicle during the day or night, (3) when possible, select head (brain) or neck (spine) shots to ensure quick and humane death, (4) process deer in a closed and sheltered facility, and (5) donate meat to food banks for distribution to needy people in the community.

Archery equipment has been used to remove deer in suburban areas, usually when firearms discharge was not permitted. Compound bows or cross bows with a minimum peak draw weight of 50 pounds are recommended. In one New York community only a few square miles in size, deer were shot at close range (10 to 15 yards) while feeding at bait piles, like the procedure described for sharpshooting. More than 500 deer were removed from this community using bow and arrows in less than two years.

CONTROLLED HUNTING

Another option in controversial management areas is the use of controlled hunts. (Ellingwood 1991). Controlled hunting is the application of legal, regulated deer hunting methods in combination with more stringent controls or restrictions as dictated by the landowner or elected officials. Controlled hunts have been successful in several locations (Sigmund and Bernier 1994, Deblinger et al. 1995, Kilpatrick et al. 1997, Mitchell et al. 1997, McDonald et al. 1998, Kilpatrick and Walter 1999). The potential for intervention and/or interference by activist groups is often high when using hunters to manage locally overabundant deer populations. Thus, in controversial situations where hunters are used, intensive involvement of state agency and law enforcement personnel is required. The site must be assessed and patrolled to minimize ingress by protesters, trespassers, and vandals. Costs for law enforcement personnel should be considered in the planning process. Examples of indirect costs affiliated with controlled hunts have ranged from $160 per deer harvested (Connecticut) to $622 per deer harvested (New Jersey) (Sigmund and Bernier 1994, Deblinger et al. 1995, Connecticut Department of Environmental Protection 1996).

Selection of hunting techniques will depend on local circumstances, including parcel size, deer numbers, problem severity, and the potential for conflict. Archery hunting for deer has the advantage of being a relatively discreet and silent activity. The limited shooting range for archery equipment, coupled with the tendency of archers to hunt from tree stands (which ensures a backstop for shots), makes archery hunting a safe and non-disruptive removal technique (Richter and Reed 1998).

Archery has the disadvantage of being less efficient at reducing deer density than firearms hunting because of lower success rates for bowhunters. Special archery seasons may be longer than firearm hunts to allow for sufficient deer harvest over time. The length of the hunt should be thoroughly evaluated if an area is closed to public access because of the incompatibility of archery hunting with other activities. An additional disadvantage, particularly

on small parcels, is that even deer that are mortally wounded with an arrow can travel 100 yards or more before succumbing. In developed areas, this could result in fatally struck deer dying on adjacent properties.

When feasible, shotguns loaded with slugs should be used to maximize program efficiency and help ensure that management goals are attained. Shotguns should be equipped with rifle sights or a scope and a rifled barrel to help ensure accurate shot placement. Where legal, rifles are the firearm of choice in expansive rural areas.

RESTORING NATURAL PREDATORS

Predator restoration for deer control has limited applicability, particularly in urban and suburban areas, because of the potential, both real and perceived, for predator–human conflicts. This said, there are two instances where native predators, specifically bobcats, have controlled deer populations in more developed areas. One, Cumberland Island is a national seashore located in an exurban area near the Georgia-Florida border. The other is Kiawah Island, South Carolina – a heavily developed resort town.

Cumberland Island's deer herd and plant community was studied for a 15-year period before, during, and after bobcat restoration. Within a few years after bobcat restoration, deer herd abundance on the island decreased by about 50 percent, while the age and sex-specific bodyweights of deer increased significantly, reflecting a decrease in intraspecific competition. When data from vegetation plots collected before bobcat restoration was compared with data collected from the same plots nine years after bobcat restoration, the recovery of the plant community was evident with both oak sprout height and number of seedlings increasing significantly (Warren 2011).

Kiawah Island is developed as a residential and resort community with approximately 3,200 homes and condominiums. Ecotourism is an important attraction on site, and the Kiawah Island Conservancy works actively to educate residents and seeks to preserve the island's habitats. Bobcats were not extirpated from Kiawah Island, and they have adapted well to the island's 'environmentally friendly' pattern of development. A four-year study in which the survival of 134 radio-collared, white-tailed deer fawns on Kiawah Island was monitored showed the average annual mortality of the fawns was 78 percent, most of which (67 percent), were killed by bobcats. Bobcats generally avoid humans on the island, and most residents have adapted to them (Warren 2011).

In the near-term, predator reintroduction presents a difficult and complicated solution to implement. Predator reintroduction has shown promise as an effective deer management tool. It is highly likely that the reintroduction of natural predators would be accompanied by human-predator conflicts and elicit concerns around public safety.

Alternative Control Methods

FERTILITY CONTROL AGENTS

The applicability of immunocontraception to wild, free-ranging deer populations depends on the vaccine effectiveness, accessibility of deer for treatment, and site-specific birth, death, immigration, and emigration rates. As such, these methods may primarily be applicable to localized herds in isolated or fenced areas, and as much as 10 years of treatment may be required before a significant decrease in the treated deer herd occurs, as this decrease would result from natural mortality combined with reduced birth rates. Despite the relatively low cost of the immunocontraceptive vaccines, the labor necessary to apply them to deer populations can make immunocontraception programs very costly. Furthermore, regulatory authority for treating deer with immunocontraceptive vaccines requires both federal and state agency approval.

ANTIFERTILITY AGENTS

The two general categories of fertility control agents include: (1) drugs or vaccines that prevent conception (contraception) and (2) chemicals that are administered postconception to terminate pregnancy (abortifacient or contragestation).

STEROID CONTRACEPTION

Fertility control with steroids (i.e., synthetic progestins and estrogens) has been evaluated for controlling deer reproduction during the past 25 years. Orally delivered steroids have shown limited success in preventing deer reproduction (Matschke 1977, Roughton 1979). However, implants containing synthetic steroids have been effective in some studies (Matschke 1980, Plotka and Seal 1989, Jacobsen et al. 1995, DeNicola et al. 1997a). Regardless of proven efficacy, the FDA will not permit the use of steroidal agents on free ranging deer because of unresolved questions regarding, the effect of long term steroid exposure on deer, the impact of steroid treated carcasses on animals in the food chain, and concerns about steroid consumption by humans.

IMMUNOCONTRACEPTION

Immunocontraceptive vaccines control fertility by stimulating the production of antibodies against proteins and hormones that are essential for reproduction. The antibodies interfere with the normal physiological activity of these reproductive agents (Talwar and Gaut 1987). Immunofertility agents (e.g., Porcine Zona Pellucida) [PZP] and Gonadotropin Releasing Hormone [GnRH]) have been successfully employed to control reproduction in individual deer. (Turner et al. 1992, 1996; Miller et al. 1998).

The immunocontraceptive vaccine SpayVac has been shown to cause infertility for several years in a variety of mammals (http://www.terramar.bc.ca). The vaccine contains a protein (PZP; porcine zona pellucida) plus an adjuvant (designed to stimulate the immune response and increase the vaccine's efficacy). The adjuvant used in most early experimental trials with SpayVac was Freund's Complete Adjuvant (FCA), which uses proteins from mycobacterium to increase the potency of the vaccine. Injecting a female deer with SpayVac causes the doe's immune system to produce antibodies that attach to her own ova, thus blocking sperm binding and fertilization. Fraker et al. 45 showed that fallow deer (Dama dama) does treated with a single dose of SpayVac with the FCA adjuvant did not have fawns for at least three years. The US Food and Drug Administration has objected to the use of FCA because of possible adverse reactions in some individual animals that have received vaccines containing FCA. Therefore, vaccines containing FCA likely cannot be used in free-ranging wildlife species.

Alternatively, porcine zona pellucida (PZP) antigen is the core active ingredient of the ZonaStat-H, another contraceptive vaccine for use in wildlife. It is intended to provide an environmentally safe, effective, and humane means of regulating wildlife populations. While testing on deer has occurred, as labeled, ZonaStat-H is currently only approved by the FDA for use on wild horses and burros.

CONTRAGESTATION

One contragestation agent, prostaglandin (PGF2(x), has proven to be both safe and highly effective in white tailed deer (DeNicola 1996, DeNicola et al. 1997b). Risk to secondary consumers is minimal because PGF2(x) is metabolized readily in the lungs of treated animals. (Piper et al. 1970). In addition, prostaglandin can be remotely delivered using the biobullet delivery system.

A limited number of delivery methods are available for antifertility agents. The usefulness of each depends on the site conditions, deer behavior, MDNR permitting and number of deer to be treated.

SURGICAL STERILIZATION OR IMPLANTATION

Implantation is effective, but it requires animal restraint and is stressful to the treated animal, time consuming and costly (Eagle et al. 1992, Garrott et al. 1992). Surgical sterilization by implants or tubal ligation has been evaluated (Plotka and Seal 1989), however, this approach has significant limitations because of the effort required to capture and handle individual deer. This method may be practical in small (less than two square miles), isolated or enclosed parks, arboretums, and corporate complexes with few deer and thus is not practical for HCMA as deer populations are free ranging and vast.

REMOTE DELIVERY

Antifertility agents have been administered using darts and biobullets. Biobullets are biodegradable hydroxypropyl cellulose and calcium carbonate projectiles used to administer antifertility agents, vaccines, anthelminthics, antibiotics, and immobilization agents (Herriges et al. 1991, Jessup et al. 1992, DeNicola et al. 1996). The biobullet system allows for the remote delivery of intramuscular treatments. Remote delivery reduces the probability of direct consumption of fertility control agents by non-target species. The limited life expectancy of implants, the expense involved in treatment, and the difficulty of treating an adequate portion of the herd suggests that large scale implant programs would be impractical, yet remote delivery may have value in controlling small, isolated deer herds. As the deer herds within the Metroparks are large and free ranging, this method is not practical for utilization at this scale.

ORAL APPLICATION OF ANTIFERTILITY AGENTS

To allow for practical application of fertility control agents to larger populations or areas (two square miles or more), it will be necessary to develop an oral delivery system. Presently no orally active, nonsteroidal, antifertility agent is available. Additional major obstacles to oral contraception in deer include dosage control absorption of active agents, and ingestion of bait by non-target wildlife. Based on these concerns and past studies, much research is still required before an oral antifertility agent becomes available. Even where they to become available, the transitory nature of deer and the landscape context of HCMA properties would make this method of control impractical. Additionally, the method of delivery for orally applied antifertility agents is troublesome as it conflicts directly with the state of Michigan's moratorium on supplemental feeding or baiting and would require that herds congregate and exchange saliva to ingest these agents.

CONCLUSION: NOT EFFECTIVE

In conclusion, there is no evidence to date that supports fertility control alone as a method to sufficiently reduce free-ranging deer populations. To date, no study has shown fertility control efforts to impact plant growth or changes in plant communities. As the restoration and preservation of ecological functionality of these habitats is the goal of this deer herd and ecosystem management plan, this method alone with be insufficient.

In studies utilizing Querus rubra (Red Oak) as an indicator species for browse pressure, there was no evidence that fertility control was a viable tool for reducing herbivore populations or browse rates on Querus rubra seedlings in a fragmented suburban landscape. Despite a greater than 90 percent doe sterilization rate and near elimination of deer fawns in studied sterilization zones, deer populations remained stable due to immigration. These results offer no support for fertility control as a means to reduce deer browsing pressure (Blossey Curtis,

Boulanger, and Davalos, 2019). The cost of labor and materials and the practicality of treating an adequate number of deer limit the use of immunocontraceptives to small insular herds that are habituated to humans (Curtis et al. 1998, Walter 2000, Rudolph et al. 2000). Furthermore, with low annual mortality rates for suburban deer, as well as immigration, populations will remain at high levels even with the initiation of a contraception program.

REGULATORY AND PERMIT REQUIREMENTS FOR ANTIFERTILITY RESEARCH

Antifertility agents for wildlife are not commercially available. All antifertility agents are currently classified as experimental drugs and are only produced in a few research laboratories. Experimental drugs can only be administered to deer following U.S. Food and Drug Administration (FDA) guidelines. A federal Investigational New Animal Drug permit and state or provincial wildlife agency approval are necessary to capture or treat any deer with drugs. Consequently, in North America, treatment of deer with contraceptive vaccines is only being conducted in research projects by universities, state and federal wildlife agencies, and the Humane Society of the United States. The FDA has concerns about the safety of consuming deer treated with experimental drugs and currently requires that all treated, free ranging deer be marked with warning that stipulate consumption restrictions. It is not clear if or when FDA restrictions on consumption of deer meat treated with experimental drugs will be modified. In addition, fertility control agents are usually delivered to deer using either dart rifles or biobullets. Restrictions on firearms discharge in suburban areas often limits practical delivery of drugs to free ranging deer. Consequently, there are many aspects of the regulatory and delivery systems effectively that still need to be developed before contraceptive vaccines can be a viable management alternative for communities with overabundant deer herds.

Vegetation Surveys

Multiple studies (Shelton 2014, Rawinski 2014, Waller 2014) note that deer overbrowsing can change forest habitat by reducing tree reproduction, changing tree species composition, reducing the abundance and diversity to herbaceous understory species and reducing the habitat of canopy-nesting birds. Other studies demonstrate that overbrowsing also contributes to the decline of several bird and butterfly species. (Cutright & Kearns 2005, Casey and Hein 1983, Miller et al. 1992, deCalesta 1994, McGuinness & deCalesta 1996). Consistent with this current ecological literature, park officials had noticed the effects of overabundant deer since the 1980s. In response to these concerns, the HCMA installed several vegetation enclosures (deer exclosures) in Kensington Metropark in 1996, to help quantify the loss of habitat. After two years, the data collected from these plots strongly suggested that deer browsing was affecting species diversity and density of local plant types. Vegetation density in exclosures was estimated to be three times greater in exclosures than the control sites.

Subsequently, additional vegetation enclosures (deer exclosures) were installed throughout the park system. An initial study (Courteau, Nov. 1998) detailed the methodology of this sampling process. The survey concluded that “the Kensington Metropark deer exclosures shows a pattern of higher species diversity and density where vegetation has been protected from browsing deer for two seasons” and that “data on browse damage and mortality clearly demonstrate the extent of deer browsing and its correlation with seedling mortality. These data comprise the strongest direct evidence that deer are, indeed, over browsing vegetation past the point of recovery, in some cases.” Additional research goals (Courteau 1999 & 2000) have since been established to further compile quantitative scientific data.

As an example, in 2002, at one exclosure site, 23 trillium were recorded inside the exclosure with none documented in the surrounding area. By 2013, trillium carpeted the interior of the exclosure. In 2021, an observation sheet at the same exclosure indicated 200-300 trillium inside with only 10 trillium plants in bloom outside of the exclosure. Although, the blossoms are difficult to see in the photo below, what can be seen is the browse evidence. More greenery is evident inside the exclosure as compared to the adjacent area outside.

(Kensington Deer Exclosure 2013)

(Wildwing Deer Exclosure 2021)

For this reason, interpretive staff records their findings on the observation sheet. See an example of an observation sheet on the next page. It should also be noted that staff marked “Yes” to the question “Obvious browse line present outside exclosure as compared to inside?” As browse line is defined as the boundary between upper normal plant growth and lower stripped and eaten-back growth that indicates the height reached in feeding by the larger browsers (animals that eat plants) (Merriam Webster).

The need for management at new sites is determined on a continuous basis where significant browse damage is observed. Where this damage is observed, a deer exclosure would be installed to determine the level of browse pressure the deer population is putting on vegetation. As of the update of this document in fall of 2021, additional exclosures are scheduled for installation at Dexter-Huron and Delhi Metroparks where browse damage has been observed and reported.

This ongoing data collection process will continue to aid the HCMA in its management decisions and to assess the effectiveness of its policies regarding deer management in the Metroparks.

Kelsey Lang
Stephanie Kozak

Deer Exclosure Floristic Observations Data Sheet

Name of Observer Aubrey Gauthier

(see attached completion instructions for explanatory information before completing form)

Park Name: Kensington Exclosure ID Name: wildwing Date: 5/8/2021

1. Exclosure placed in expected deer-use area (check one): ___ Marginal, X Good, ___ Excellent
2. Obvious Browse Line present outside Exclosure (Exc.) as compared to inside? Circle (Y) N)
3. Photo-recording: If obvious difference between inside and outside Exclosure vegetation is apparent, please provide a digital photo of Exclosure effect. Photo collected: Circle (Y) N)

Character	% Cover or % Browsed (mark box with "x")						
	0	0-5 very little	6-35 < half	36-64 about half	65-94 > half	95-100 a lot	100
Overall Inside Exc. Ground* Green				X			
Overall Outside Exc. Ground Green				X			
Woody plants 2-6 ft. tall Leaf Cover Inside				X			
Woody Plants 2-6 ft. tall Leaf Cover Outside			X				
Plants Inside w/Browse Evidence	X						
Plants Outside w/Browse Evidence					X		

* "Ground" - Green herbaceous plant cover present, approximate 2 ft. height or less

4. List Plant Species viewed exclusively Inside Exclosure, but not Outside (any outside area in view, not just "Control"* area)

Plant Name	Number of Plants noted inside (mark box with "x") 0-5	6-30	Numerous
none			

Contact Natural Resources Dept. asap if you see exclusive plants and are unsure of identification

5. List Plant Species Obviously Different in Numbers Present Inside vs. Outside Exclosure, using the comparable 8 ft. Control* perimeter outside typical exclosure

Plant Name	# Inside Exc.**	vs.	# Outside Exc.**
Trillium	200-300	vs.	10
wild geranium	500	vs.	100
		vs.	
		vs.	
		vs.	

** enter: approximate # counted (if <30), or ranges "30-100", ">100", ">(you select even larger #)"

Contact Natural Resources Dept. asap if you see obviously different plants #s and are unsure of identification

6. If no species are listed in 4. or 5., please mark & complete one:
   - ~~N/A~~ I noticed no obvious Exclosure effects
   - ___ I contacted (enter name)___ at NR Dept for help

Note any maintenance or other issues with Exclosure multiple trees down on fencing. see photos.

Note any General Observations such as Improved or diminished vegetation character throughout the Park (attach additional sheet if desired). N/A

Deer Exclosure Data Recording Form and Instructions (double-sided)

Deer Population Surveys

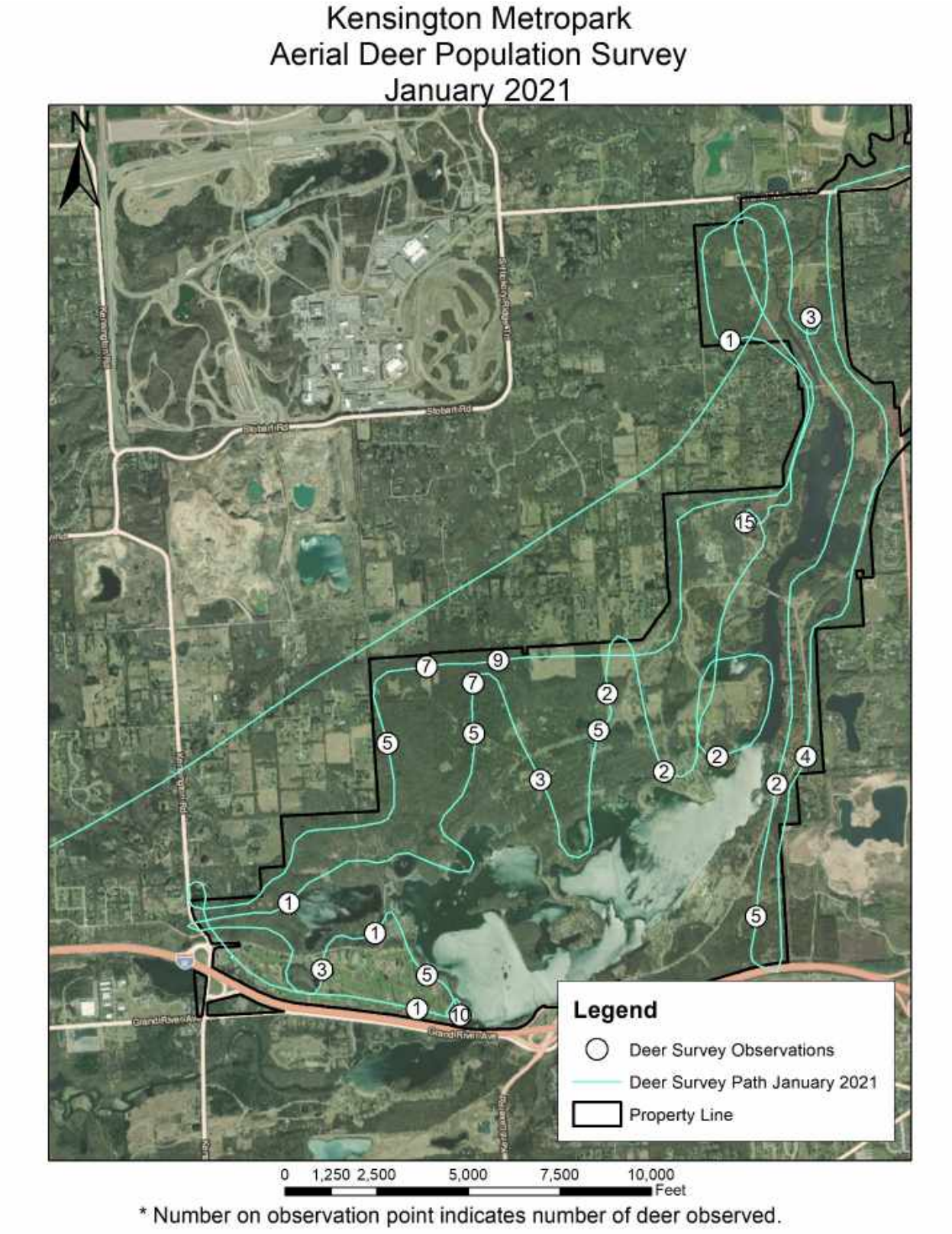
Several methods have been used in assessing the population of deer throughout the Metropark system:

- Aerial (helicopter) surveys – This method consists of several people (typically 4) flying over the park and visually counting deer. Optimal conditions for this method are after several inches of snowfall.
- Infrared surveys – In this method, a plane equipped with an infrared camera mounted on the underside of the plane flies over the park at night. The camera detects the heat generated from the deer and other heat-producing objects and animals. Measurements and calculations identify deer from other animals. This method is best done when the weather has turned cold and after the leaves have fallen off the trees.
- Visual monitoring – Metroparks staff drive designated routes and count deer on a regular basis throughout the year. This information will continually be gathered and assessed to see what, if any, trends develop.
- Vegetation Monitoring – Used as a proxy for deer populations, vegetation monitoring allows HCMA to assess the impact deer are having on a given ecosystem.

The actual number of deer within an area is difficult to determine. Numbers change daily as deer move throughout their natural range. Surveys typically reflect only a percentage of the population but produce valuable baseline population estimates of the approximate deer density. Visual monitoring provides a relative index as an indicator of deer densities or changes in deer abundance. It is also useful in the planning process to estimate deer populations when an actual survey is not feasible. This estimating process is conducted in a consistent, scientific manner using the most recent survey data available.

Deer concentrations are surveyed at least every five years in order to set management goals for the individual parks and determine necessary actions. Several methods have been used to gather this data. The most efficient survey method used is by helicopter. This method has been used since the beginning of the program. Surveys are typically conducted in January or February with sufficient snow cover (6-inch +) to provide good visibility. Three spotters plus a pilot fly approximately 1/8-mile-wide transects across the parks at a height of 500 to 700 feet depending on conditions.

Vegetation monitoring is ongoing and recorded on an annual basis. Differences in vegetation are observed at each exclosure. Most sites in 2020 noted an increase in wildflower or sapling abundance within exclosures, with several sites showing key species present only within exclosures, and absent outside.



The survey data is used in a population model to predict the herd size the following year. Indications are that approximately 80 percent of the deer are counted during aerial surveys. The 20% error is not factored into the prediction models, so actual population estimates are undoubtedly conservative. In general, a population density of between 15-20 deer per square mile is the preferred carrying capacity for habitats within the Metroparks. The MDNR population density threshold is between 15-20. In 2021, population densities averaged 19.5

deer per square mile with the highest density at Oakwoods Metropark with 48 deer per square mile (last surveyed in 2017).

Other Agency Control Methods

HCMA staff continues to monitor the management experiences of other agencies to help determine the efficacy of using various methods in managing deer within the Metroparks.

The list of agencies below is not exhaustive, but it gives an idea of the breadth of this park management issue. Metroparks has been in direct contact with many of these agencies to get their help and advice. Some have provided in-depth management reports that are available upon request.

Other Agencies	Management Type
1. Oakland County Parks Commission	Controlled firearms hunts at Addison Oaks Open bow hunting at several other parks
2. Indiana State Parks	Controlled firearms hunts in several parks
3. Hennepin Regional Park District (MN	Controlled shotgun and archery hunts; Sharpshooting in one park
4. Cleveland Metroparks (OH)	Sharpshooting
5. Lake County Forest Preserves (IL)	Sharpshooting
6. Columbus and Franklin County Metroparks (OH)	Controlled public hunts, sharpshooting, trap and transfer
7. Milwaukee County Parks (WI)	Sharpshooting
8. Milwaukee Zoo (WI)	Sterilization
9. Cook County Forest Preserve (IL)	Sharpshooting
10. Dupage County Forest Preserve (IL)	Sharpshooting

11. Chippewa Nature Center (MI)	Controlled bow hunting
12. Morris County Parks (NJ)	Controlled hunts
13. Hunterdon County Parks (NJ)	Controlled hunts
13. Watchung State Park (NJ)	Controlled hunts, sharpshooting
14. Tyler State Park (PA)	Controlled hunts
15. Eden Prairie (MN)	Sharpshooting
16. Briarcliffe Acres (SC)	Sharpshooting using arrow gun
17. Missouri Department of Conservation	Controlled public hunts in urban area
18. City of Ann Arbor	Sharpshooting*

* Notates no current herd control effort in effect in 2021.

Historical Program Performance

In 1998 it was determined by the Metroparks Wildlife Management Advisory Council (MWMAC) that a variety of control measures should be instituted for two years to help determine the best method to harvest deer. Controlled deer harvests at Stony Creek using both firearms and archery were conducted by qualified volunteers from Metro Wildlife Management Base Inc. (MWMBI) in 1999. Archery was used exclusively by MWMBI at Hudson Mills in 1999. Only firearms were used by MWMBI at Stony Creek and Hudson Mills in 2000/2001. HCMA police officers trained as sharpshooters were used in reducing the herd in Kensington Metropark in both 1999/2000 and 2000/2001.

Over the lifetime of the Program, the Metroparks Natural Resources Division has determined that the efficiency of control measures vary from park to park, and staff continue to work toward utilizing the most efficient and cost-effective method available as allowed through MDNR permits. The focus of this effort is to reduce the population by taking primarily antlerless deer. Antlered deer may be taken when part of a group of antlerless deer, however all antlers must be given to the MDNR.

As of 2021, 4,200 deer have been removed from the Metropark system. In total, more than 183,000 pounds of venison was distributed to food banks throughout Michigan, providing more than 580,000 meals to those in need. The Michigan Sportsmen Against Hunger program have sponsored the cost of meat processing each year for the entirety of the program. Totals are provided in the table on next page. Success at harvesting the determined number of deer is variable and dependent on weather conditions including snowfall and temperature.

HCMA Deer Removal									
	Park								
Year	KENSINGTON	STONY CREEK	HUDSON MILLS	LOWER HURON	INDIAN SPRINGS	OAKWOODS	LAKE ERIE	WILLOW	HURON MEADOWS
1999/00	246	122	32	-	-	-	-	-	-
2000/01	93	96	58	-	-	-	-	-	-
2001/02	110	218	73	-	89	-	-	-	-
2002/03	33	82	35	-	37	91	-	-	47
2003/04	51	127	24	-	32	56	-	47	3
2004/05	44	139	30	-	12	44	-	6	5
2005/06	68	128	26	-	29	34	-	22	2
2006/07	37	93	-	-	34	18	-	25	-
2007/08	-	-	-	-	-	-	-	-	-
2008/09	62	18	-	15	26	26	-	4	-
2009/10	33	105	8	1	34	22	-	15	-
2010/11	27	-	-	1	22	24	-	13	-
2011/12	21	21	-	-	25	20	-	-	-
2012/13	30	21	-	-	16	21	-	-	-
2013/14	2	16	11	-	8	10	-	-	-
2014/15	16	22	30	-	-	30	27	-	-
2015/16	35	34	13	-	10	-	25	-	-
2016/17	21	41	-	1	-	31	-	-	-
2017/18	45	41	39	-	18	30	-	38	-
2018/19	-	28	-	-	27	70	-	-	-
2019/20	64	28	-	-	34	42	-	31	-
2020/21	-	-	-	-	-	53	-	-	-
Total	1038	1380	379	18	453	622	52	201	57
Combined total	4200								

SAFETY

Regardless of the harvesting technique utilized, safety has always been of utmost importance. In years past, prior to each controlled hunt, qualified volunteers participated in an orientation which reviewed hunting and safety procedures, state regulations and HCMA requirements. For the hunt, volunteers were placed in specific predetermined locations throughout the management area. Locations were spaced apart and shooting zones established to provide safety to the participants, employees, and the surrounding landholders. Participants were allowed to take animals only within the shooting lanes specified. Once placed at a location, the volunteers were required to remain there until Metroparks staff picked them up. Other hunting techniques have been explored and are possible, and each specific technique is thoroughly reviewed and approved by the HCMA prior to initiation.

Today, deer culling is performed primarily by specially trained Metroparks Police Officers. Occasionally, specially trained volunteers are used to assist with deer management at Indian Springs Metropark. Recreational hunting activities are permitted within state parks, some of which are adjacent to Metropark locations. Recreational hunting is not a viable option within the Metropark system.

The Metropark sharpshooting team is comprised of trained marksman led by a coordinating unit leader. The unit leader is responsible for directing other park rangers to secure areas of the park prior to harvesting operations, assigning the shooting teams and support vehicles to

the culling site, and dealing with public incidents. Each officer is in constant radio contact with all other members of the team and the unit leader.

Shooting typically takes place from a platform over a baited area, assuring a downward trajectory of the shot. As of 2021, the MDNR bait ban applies to all recreational activity and Deer Management Assistance Program (DMAP) Permits. These programs apply to the regular Michigan Deer Hunting season and are based off rules that vary from Oct. 1 – Jan. 31. The out-of-season permit typically issued to the Metroparks allows for the use of firearms outside of the season guidelines and allows the use of bait during the period Feb. 1 – 29. Baiting under the permit outlines the use of limited bait in a limited scope as an exemption to the regular season baiting ban.

All state mandated safety distances from occupied dwellings are adhered to as a minimum. With both culling methods, shots are placed toward the interior of the park, away from park boundaries, roadways, areas of the parks still open to the public and private property.

Park closures will be planned to ensure community safety during all planned hunts. Additionally, any threat made against members of the Metroparks team or others participating in culling activities will be turned over to local law enforcement.

ANIMAL HANDLING

Animals taken during the culling process are tagged and the sex and location where the animal was taken are documented as required by MDNR/HCMA. The animals are promptly taken back to a designated building where they are dressed out, and when required by the MDNR, biological data is taken. Animals are transported to a food processor approved by the MDNR and Michigan Department of Agriculture and Rural Development for final processing. The Michigan Sportsmen Against Hunger program and other sportsmen volunteer organizations have regularly assisted in covering the cost of meat processing and distribution of the venison to area food banks.

BIOLOGICAL DATA

Biological data is taken from the deer during the Metropark deer culls. Initially, this included the age, sex, and weight of the animal as well as blood samples, fat analysis and the observance of any parasites. Preliminary analysis from the MDNR indicated nutritional stress and herd productivity less than would be expected for a healthy well-fed deer herd in southern Michigan. Evidence of deer ticks was not found in a study conducted by the Oakland County Public Health and the Michigan Lyme Disease Association. Data continues to be collected including age, sex, weight, and reproductive rates.

PUBLIC INFORMATION

HCMA understands and appreciates the wide range of passionate viewpoints this issue evokes. Metroparks is committed to the transparent sharing of information and creating awareness that all options are continually being weighed and available data carefully assessed.

Knowing discussions of wildlife management can be controversial, both from the aspect of controlling deer populations or from not being proactive enough to reduce deer damage to the parks' ecosystems, Metroparks has instituted a process to provide the public with the information gathered from the MWMAC data.

Public informational meetings have been held, as well as meetings with local officials. The public also has opportunities to express their opinion at regularly scheduled monthly HCMA Board of Commissioners meetings.

All public inquiries related to wildlife management at the Metroparks should be directed the Metroparks Deputy Director.

2022 - 2026 DEER HERD AND ECOSYSTEM MANAGEMENT PLAN

Introduction

Managing white-tailed deer populations within the Huron-Clinton Metroparks is a necessary part of managing the parks for the foreseeable future. As stewards of the parklands, if we are to repair and preserve the biodiversity within the parks, as well as maintain the health of the deer themselves, we must have a plan and processes for how we preserve deer herds and protect the ecosystems that sustain them. We see this as a necessary part of doing business.

The Metroparks continue to build on the original research work of the Metroparks Wildlife Management Advisory Committee, as well as on 20 years of active management experience and the review of new research and information gathered on an annual basis. The first two years of managing deer showed that deer can be safely and efficiently removed using various lethal methods. Since then, it has been determined that depending on the physical properties or constraints of the park, weather conditions, and volunteer availability, a combination of these methods should be considered to efficiently control numbers.

Assessment of deer populations using various survey techniques and monitoring of changes in the flora within the parks will continue throughout the program. Working with interested groups, staff will continue to research and evaluate the possible use of nonlethal measures and deterrents such as vegetative management strategies, repellants or fencing, which will all be considered under certain situations in this integrated strategy.

Management Goal

The goal of the plan to preserve and manage wildlife within the Metroparks is to maintain the biodiversity within the Metroparks, while maintaining a visible, healthy deer herd. As responsible stewards and managers of the natural resources within the Metroparks, HCMA is committed to maintaining healthy, natural ecosystems that support a diversity of flora and fauna for park guests to study and enjoy today and in the future.

Methods of Analyzing the Need to Control Deer Populations

The decision to actively control deer in a particular park will be based on deer population assessments and on the condition and changes in flora and fauna of that park. Deer populations will continue to be assessed by using aerial counts from a helicopter and/or infrared survey from a plane depending on climatic and snow-cover conditions. Sample surveys along park roads will no longer be conducted as they have been found to be the least accurate method. Aerial counts will be done at least every five years or in compliance with MDNR permit requirement to establish reliable population trends.

Vegetation surveys will continue to be conducted, and flora changes will be analyzed by monitoring the deer exclosure plots and control plots that exist in the parks. Established HCMA protocols for vegetation monitoring as well as photo monitoring will be utilized at points selected in various habitats of the parks. Plant flowering records and anecdotal reports compiled by the parks' interpreters and other park staff will also be compiled and analyzed.

The above metric will serve as a proxy for the biological carrying capacity (BCC) of an ecosystem which is the number of deer that the system can support over an extended period without damaging that habitat beyond its capacity to recover or without changing its character. Social Carrying Capacity (SCC) is defined by both the maximum and minimum population sizes society will tolerate. That is, society may not tolerate too many deer, but it may not tolerate too few either. SCC is also defined by the interactions between humans and a wildlife species. A SCC for deer is defined by the level of abundance and interactions acceptable to enough stakeholders such that there is a low level of deer-related issues (Minnis and Peyton 1995).

The Metroparks Wildlife Management Advisory Committee (MWMAC) originally set a general Social Carrying Capacity for the Metroparks at 20-25 deer per square mile. Many wildlife biologists and ecologists recommend a Biological Carrying Capacity of between 15-20 deer per square mile. The MDNR also recommends a population density of 15-20 per square mile. It is also recognized that land use, vegetation and deer population levels are not uniform throughout a park and the biological carrying capacities vary throughout the park. Given both the SCC and BCC goals, the Metroparks general recommendation is to work toward a stable goal of 15–20 deer per square mile.

HCMA will consider actively controlling deer in a park when:

- Population assessments show the density is greater than 15-20 deer per square mile;
- Flora monitoring by HCMA professional Interpreters and staff, and analyzed by Natural Resource Management staff, indicates that deer browsing is damaging the vegetation beyond its capacity to recover;

- When available, biological data collected on park deer indicates that the deer population is under nutritional stress.

The focus of the management effort is to reduce the population by taking primarily antlerless deer. As outlined in the MDNR permit, antlered deer may be taken when part of a group of antlerless deer. Individual animals that are recognized to be unique, unusual, or uncommon and hold value either biologically or socially, will not be targeted. These unique individuals, recognized as bringing added value to the Metroparks, will be protected for the public interest and enjoyment, or environmental/genetic diversity, unless determined by the Metroparks and/or MDNR to be detrimental to public or environmental (including deer or other plant or animal species) health, safety, and welfare.

Methods of Controlling Deer Populations

Currently, lethal removal of deer is the only practical way of controlling deer populations within the Metroparks. Based on research conducted regarding methods for controlling deer populations in the Metroparks nonlethal methods would not be effective in reducing deer populations given the large size of the parks, the parks' open borders, the large numbers of deer, and the current state of technology of nonlethal methods such as immunocontraception, and sterilization. Additionally, all control methods must be approved by the MDNR via a permit. The MDNR has not previously approved immunocontraceptives, and while it has previously approved sterilization as a limited case study, it does not authorize this method as a means of control broadly.

Read more at
https://www.michigan.gov/documents/dnr/Sec._401149_PA_390_of_2018_Preliminary_Report_on_Sterilization_of_Game_in_Michigan_122120_711201_7.pdf

An integrated management strategy using the various forms of both nonlethal deterrents as well as the lethal removal methods that were successfully implemented in the first two years of active management at Kensington, Stony Creek and Hudson Mills Metroparks. Sharpshooting has proved to be safe, efficient, and effective in decreasing deer numbers. Modifications in methods of administering the sharpshooting operations and in making personnel assignments for them, along with continued volunteer help, are expected to make the operations more effective and cost efficient.

Plan Implementation

The deer numbers in several parks continue to remain above the desired level of 15-20 deer per square mile, but all indications are that the remedial effect of current management efforts

on the parks' flora are very promising. Therefore, an integrated management strategy using a combination of control techniques including the mixture of lethal control methods employed should be continued to be used with the objective of reducing the population densities in any park requiring deer management to 15-20 deer per square mile.

Trained HCMA sharpshooters, and on occasion specially trained volunteers, will continue to be used to cull deer during the early winter months, after the statewide hunting season has closed, including parts of Kensington where hunting is not allowed due to Milford Township ordinances, as well as in other parks.

The safety of the public, volunteers, participants, and employees will remain the highest priority. All safety procedures, guidelines, state regulations and proficiency testing for volunteer participants as outlined in the current program will be strictly adhered to. Any deer removed under special permits issued to the HCMA by the MDNR will continue to be donated to area food banks. Animal handling and processing procedures as outlined in the current program will continue. Active support from area volunteer organizations will continue to be sought to help defray the costs of processing the meat.

As before, parks will be kept open to the public for general use as much as safely possible while these control measures are being implemented. All parks will continue to be monitored and active management strategies will be considered for implementation using the criteria mentioned earlier. All necessary permits will be obtained from the MDNR before any deer management is implemented. Roles and responsibilities of specific staff members, staff scheduling, and processing procedures, as outlined in the HCMA Deer Management Cull and Processing Procedures, 2008 shall be followed. Those procedures are outlined in Appendix I.

Plan Evaluation

The effectiveness of the Deer Herd and Ecosystem Management Plan will be evaluated every five years using the methods of analyzing stated previously. The methods used to control deer will also be evaluated and compared annually using criteria including:

- Safety of the procedure
- Number of deer taken compared to the goal set for the park
- Cost to the HCMA per deer
- Number of days the park, or part of the park, is closed to other uses while control methods are implemented
- The "loss rate" of deer
- Reaction and comments by participants
- The number of volunteers and volunteer hours the method generates

Use of Sharpshooters

Only Metroparks Police Officers or specially trained volunteers are permitted as sharpshooters and only those officers or specially trained volunteers specifically listed under the MDNR-issued permit can serve as authorized sharpshooters. All procedures and protocols as outlined under the issued MDNR permit and the Metroparks Police Department Policies & Procedures Manual will be strictly followed. Failure to follow sharpshooter protocols and procedures, may result in the removal of the officer from the sharpshooting team and disciplinary action up to and including termination.

TRAINING OF SHARPSHOOTERS

Training of HCMA police officers as sharpshooters for use in deer management at the Metroparks takes place annually. The stated goals and objectives of this training are as follows:

- Safety and operating system of the rifle is the number one concern
- Safe functioning of the firearm system
- Maintenance requirements of the firearm system
- Specialized shooting skills required
- Shot placement

Officers are trained to treat all guns as loaded. They are taught to keep their fingers off the trigger and outside of the trigger guard with the safety on until they are aimed at the target and ready to shoot. Lastly, they must positively identify their target and any potential hazards behind their target. Officers must wear personal protective gear whenever using firearms.

REMEDIAL ACTION

If any officer is unable to comply with safety and program rules as they relate to deer herd control the following remedial actions will be taken. This plan is adopted from the Metroparks Police Handbook section 8-1, specifically sub-section N. This handbook also contains additional safety and training information that is required for all Metroparks police officers (Section 8-1 - E.1.a.i, F.1.a i-v and c.i-iii, K, and L and Section 8-2).

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APPENDIX 1: DEER HERD AND ECOSYSTEM MANAGEMENT PLAN PROCEDURES

Introduction

The population of white-tailed deer has increased dramatically throughout southeast Michigan including the Metroparks system. This growth can be attributed to many factors including the deer's own high reproductive rate, the absence of natural predators and the restriction of open hunting on park property. At high densities, deer have placed a heavy burden on the natural communities by reducing species diversity of both plants and other wildlife as well as impairing forest regeneration.

As responsible stewards and managers of the natural resources within the Metroparks, it's imperative to maintain the natural environments in a manner that supports a diversity of flora and fauna for park guests to enjoy and study, now and into the future. To accomplish that aim, the HCMA board initiated a management plan to control white-tailed deer populations back in 2001. Through the review of best practices, research and experiences with managing wildlife at the Metroparks, that plan has evolved in its efforts to preserve biodiversity within the Metroparks, while maintaining a healthy, visible deer herd, and to do so in a safe, humane and efficient manner.

These procedures are intended to serve as a guiding document. They are subject to change as necessary in order to comply with any permitting changes, staffing changes, environmental conditions or as otherwise required.

Purpose

To actively manage the Metroparks white-tailed deer population using a variety of control measures in order to promote biodiversity within the park system, while maintaining a healthy visible deer herd and to do so in a safe, humane and efficient manner.

Scope

All HCMA Metroparks.

Responsibilities

CHIEF OF POLICE OR DESIGNEE

- To ensure public safety and the safety of Metroparks employees during deer management operations.
- In cooperation with the Chief of Natural Resources and Regulatory Compliance, to facilitate the organization of sharp shooting activities, determine dates and times of sharp shooting and the utilization of police and park staff during culling operations.
- To ensure that park facilities are secured from the public, and Metroparks employees who are not involved in the cull or processing operation, during scheduled culling operations such as shooting zones, and the processing warehouses.
- To be responsible for all sharp shooting field operations to ensure all deer are taken in a safe and humane manner.
- To oversee sharp shooting transport teams to ensure all deer are removed as to minimize any public attention to the program.
- To maintain permits for Michigan special weapons training for police staff involved in sharp shooting activities, and all other permits or certification required to maintain sharp shooting operations.

DISTRICT PARK SUPERINTENDENT

- Schedule or assign employees as necessary for deer management operations.
- Notify park personnel of scheduled times and dates of controlled hunts, sharp shooting activities and related processing activity.
- In cooperation with the Chief of Natural Resources and Regulatory Compliance, to facilitate the assistance of volunteer organizations, determine dates and times of controlled hunts and utilization of park staff during culling operations.
- In cooperation with the Chief of Police or designee, to prepare park for controlled hunts or sharp shooting activities by closing the park in order to facilitate the cull without jeopardizing public safety.
- To ensure that park equipment, facilities and other required resources are available and properly equipped for deer management operations including hunter / sharpshooter support, transportation, processing and waste disposal.
- Re-schedule or reassign any employee whose work area may be adversely affected by deer management operations.
- To notify all adjacent property owners and the local municipality of the intent of the Metroparks to conduct deer management operations.

- To track all employee and equipment costs associated with deer management activities and submit that information to the Deputy Director as requested.

CHIEF OF NATURAL RESOURCES AND REGULATORY COMPLIANCE

- To work with the Michigan Department of Natural Resources (MDNR) to establish specifications and guidelines and to secure permits each year for controlled hunts and sharp shooting operations.
- To produce population estimates / survey data to establish animal reduction goals.
- In cooperation with the Chief of Interpretive Services and the MDNR, to prepare and conduct annual population surveys and collection of bio-data.
- In cooperation with the Chief of Interpretive Services, to establish guidelines for and conduct vegetative surveys throughout the park system.
- To collect data, track trends, provide accounting of permits and process and prepare activity reports as required by the MDNR.
- In cooperation with the District Park Superintendents, to facilitate the assistance of volunteer organizations, determine dates and times of controlled hunts and utilization of park staff during cull operations.
- In cooperation with the Chief of Police or designee, to facilitate the organization of sharp shooting activities, determine dates and times of sharp shooting and utilization of police and other park staff during cull operations.
- To facilitate and oversee all controlled hunting and sharp shooting activities, cleaning and disposition of deer and other related activities.
- To prepare and present annual Deer Management Report to the HCMA Board of Commissioners as determined by the Director.

CHIEF OF INTERPRETIVE SERVICES

- In cooperation with the Chief of Natural Resources and Regulatory Compliance and the MDNR, to assist in annual population surveys and collection of bio-data.
- In cooperation with the Chief of Natural Resources and Regulatory Compliance, to establish guidelines for and conduct vegetative surveys throughout the park system and to submit reports for analysis to the Chief of Natural Resources and Regulatory Compliance and Deputy Director.
- In cooperation with the Chief of Natural Resources and Regulatory Compliance, to provide data and information to promote biodiversity within the park system.
- In cooperation with the Chief of Natural Resources and Regulatory Compliance, develop and maintain an educational component from the culling activities, so as to help the people of southeast Michigan gain a better understanding of objectives and long-term benefits of this stewardship plan.

Procedures

SCHEDULING

- The District Park Superintendent, in cooperation with the Chief of Natural Resources and Regulatory Compliance, the volunteer sportsman organizations and as approved by the Director, will determine dates and times of controlled hunts and utilization of park staff during culling operations.
- The Chief of Police or designee, in cooperation with the Chief of Natural Resources and Regulatory Compliance and as approved by the Director, will determine dates and times of sharp shooting and the utilization of police and park staff during culling operations.
- The scheduling of Metroparks police officers participating in the sharp shooting operations is the sole responsibility of the Chief of Police or designee.
- The scheduling of employees as support personnel is the sole responsibility of the District Park Superintendent. Those individuals involved in hunter drop off/pickup, assist in animal recovery, animal processing and transport are considered support personnel. Support teams will be comprised of no more than two employees per transport truck for recovery and transport activities.

NOTIFICATION

- The District Park Superintendent will coordinate public notification with the Chief of Marketing and Communications to ensure notification messaging aligns with the Metroparks brand guidelines and messages are stated in a manner that considers public sensitivities and provides links or access to additional information.
    - Public inquiries related to deer culling should be forwarded to the Metroparks Deputy Director.
    - All media questions should be referred to the Chief of Marketing and Communications who will then determine who best to respond.
- The District Park Superintendent will notify all immediately adjacent property owners and the local municipality of the intent of the Metroparks to conduct deer management operations no less than two days prior to the date of a cull
    - To ensure the safety of all staff and volunteers, exact dates of any scheduled deer cull will not be released to the public.
- The District Park Superintendent will inform employees of their assigned duties for deer management operations as well as those employees whose job may be affected by the operation in accordance with contractual obligations.
    - To ensure the safety of all staff and volunteers, front line staff within parks, that are not part of management activities, will be not be notified of deer cull dates until the day of a management activity.

TIMES OF HUNT

- Deer culling operations will take place as determined to be necessary to ensure the health of the deer herd and Metroparks ecosystem and as allowed by the MDNR. All methods, type of activity and times of hunting will follow the State of Michigan guidelines as determined by the MDNR or otherwise permitted by the MDNR. Sharp shooting activities may occur at any time within a 24-hour period and within the guidelines and limitations as stated with the permit issued by the or as otherwise permitted by the MDNR.

PROCESSING

- Initial processing of deer will take place in heated, well-lit areas. Processing teams will consist of no more than three employees. The use of volunteers from the supporting sportsman groups is encouraged. During the processing procedure, every attempt should be made to keep a safe and organized workspace. Deer remains should be removed from the workspace on a regular basis. All remains from the processing procedure shall be disposed of in an approved, lined waste container and shall be disposed of off-site by a regulated, licensed waste hauler in a timely manner.
- The District Park Superintendent shall be responsible for arranging waste removal. Those facilities connected to sanitary sewer should be washed down frequently during processing. Those facilities not connected to sanitary sewer will employ the use of plastic or other non-porous floor covering along with an absorbent material to be used liberally during the processing to insure safe working conditions. Plastic gloves and Tyvec suits (or equivalent) shall be made available to employees involved in the processing procedure.
- Washing down processing areas into storm drains is strictly prohibited.
- All antlers collected during processing will be retained by the Chief of Natural Resources and Regulatory Compliance and subsequently given to the MDNR for disposal.

TRANSPORTATION

- After initial processing, all deer shall be hung to cool in a cool/cold dry environment until transported to the meat processor. Transportation will take place in an approved covered trailer or a clean covered truck. Every attempt shall be made to keep the deer clean and dry during the transportation process. All deer shall be transported to the processor the following morning and / or no later than 24 hours after the animal was taken. The meat processor shall be contacted by the Chief of Natural Resources and Regulatory Compliance or delegated staff member 24 hours in advance to arrange delivery time. Selection of a USDA approved meat processor will be the responsibility of the Chief of Natural Resources and Regulatory Compliance and Environmental Compliance or as permitted by the MDNR.

QUARANTINED AREAS

- Those areas within the park system that are closed for sharp shooting activities and those areas used for support/processing shall remain off limits to all members of the public and to all employees unless otherwise authorized by the Director, Chief of Police or designee, Chief of Natural Resources and Regulatory Compliance or District Park Superintendent until all activities, including processing and cleanup are completed. Employees not involved in the deer management activities but are affected by the management activities taking place in their workspace during regularly scheduled work time, may upon request, be reassigned to other areas of the park to perform other duties as assigned by the Park Superintendent.

BIO-DATA COLLECTION

- When required by the MDNR or Chief of Natural Resources and Regulatory Compliance, bio-data will be collected during the processing procedure. It will be the responsibility of the Chief of Natural Resources and Regulatory Compliance or the Chief of Interpretive Services to arrange for staff or contracted personnel to collect and record such data. Bio-data will be used to help determine the success of the program, potential disease threats and general health of the deer herd. The MDNR may at times require parts of the deer to be made available to them for further disease testing. When required, those items will be gathered by the individuals collecting data, bagged in a sealable plastic container and stored with the deer awaiting transport or other suitable area away from normal maintenance activities or exposure to employees during their normal working day, until transportation can be arranged to a MDNR facility.

MISCELLANEOUS

- It is intended that any employee involved in the deer management process does so voluntarily. It is recognized that duties assigned, and the hours worked in this process can be unusual and arduous and should be undertaken by the employees' own accord. It is also intended that when deer management duties are assigned, that they are considered a normal part of the employees work week.
- At no time will photographs or digital images of any kind be allowed to be taken of the deer management process.

APPENDIX 2: KENSINGTON METROPARK FLORA AND FAUNA MONITORING PERSONAL ACCOUNTS

As stated in the article “Impacts on an Ecosystem”, the relationships between flora and fauna are connected in many ways. The following accounts explore staff’s first-hand monitoring at Kensington Metropark over the years.

April, 1998 - B. Hotaling, Naturalist

I joined the staff of Kensington Nature Center in October of 1972. From the beginning, I had a particular interest in wildflowers. Strong images of spring wildflower, in particular, have been retained in memory. Some species existed in masses of color; other species may not have been in masses, but nevertheless, were widespread and easy to find. Such is not the today for many of these plants. It’s a great loss and detracts greatly from the aesthetics of the trails.

Impressions: A May walk around Tamarack Trail would have shown hundreds of flowering trilliums, especially on the back side of the trail. On the section of trail by the boardwalk, we would view large numbers of large-flowered bellworts. Wild Sarsaparilla was commonly seen.

Hepatica was commonly found throughout the Nature Area, especially along Deer Run. Starry false Solomon’s seal was profuse. In late May, the lady’s-slippers appeared. Yellow lady’s-slippers were the most prevalent. Near the Deer Run Swamp Shortcut, there were concentrations of showy lady’s-slippers, as well as a few pinks. In various sites along Deer Run, Tamarack, and Aspen, grew small white lady’s-slippers.

In 1997, the situation was changed somewhat dramatically. While trilliums still exist, the numbers were few and far between. The best site was the vegetative enclosure along Wildwing. There are no known bellworts or sarsaparillas in the entire park.

April, 1998 - P. Carlson, Supervising Naturalist

General notes on wildflowers populations 1968-mid 1980s

A “carpet” of 100’s of Bloodroot at the junction of Labadie and Tamarack return extended back from both trails for 100 feet – a beautiful early spring display.

This was a great area for wildflowers -from early spring through the fall season. In the growing season, there wasn’t a time when we couldn’t find plants in bloom to show

our trail groups. Fields of hawkweed in late spring-early summer were a treat. Fields of asters contrasting with goldenrods were spectacular in the late summer and fall. Wildflower walks were a staple of our program schedule.

The decline in numbers of plants and species first become observable in the mid-80's. Today some flowers are gone…some are rare…some are hanging on in greatly reduced numbers. There are not many species that exist in great numbers—certainly nothing approaching the numbers found in the past.

In the mid-seventies, we had trail labels for over 380 species of wildflowers, 15 species of ferns, 45 species of trees and over 50 species of shrubs.

The following is an account taken from an article entitled, "Diminished Wildflower List 1998"

In summation: There are records of ten known species of orchids within Kensington Metropark; none have been recorded outside of the Nature Area. Four species were found in 1998, after an extensive search.

Some long-term changes in Kensington Metropark Wildlife

Extensive birds, mammal, reptile and amphibian records have been maintained for nearly thirty years. Listed below are some obvious changes in animal populations. The causes for these changes are not always known, but may include plant succession, competition from alien species, increased predation, and development (mostly outside of park).

Vanished residents:

Vesper Sparrow (last reported in 1990)
Grasshopper Sparrow (last reported in 1991)
Badger (last probable report in 1978)

New residents:

Wild Turkey (new in 1998; nesting?)
Great Egret (now nesting in heron rookery)
Grey Fox (first reported in 1990)
Coyote (first reported in 1990)

“Plant Changes in Kensington Since 1998” September 8, 2000 - B. Hotaling

> Our primary concerns are for species that were once well-established wildflowers whose disappearance cannot be explained simply by habitat changes. The changes
>
> in populations for these species have been dramatic, mostly with the last 10 years. While there are still many plants in the park, the diversity has suffered. Many of the herbaceous plants that continue to thrive are poisonous or otherwise inedible. And, many of the plants that have been lost are among the more colorful species. Our woodlands, especially in spring, are largely devoid of color.

These documented accounts are valuable in assessing and analyzing the health of the ecosystems at Kensington Metropark. It is clear the floral and faunal diversity in Kensington Metropark has diminished; particularly noticed and recorded in the 1990s. Because of these observations, monitoring efforts have been increased to establish a scientific method for comparing various sites within the Metroparks.

HURON-CLINTON METROPARKS

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Approval – 2022 Designation of Fund Balance
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the Fund Balance Commitments and Assignments for 2022 in accordance with Governmental Accounting Standards Board Statement No. 54 as recommended by Chief of Finance Shedreka Miller and staff.

Background: In March 2009, the Governmental Accounting Standards Board (GASB) issued Statement No. 54, Fund Balance Reporting and Governmental Fund-type Definitions. The objective of the statement is to enhance the usefulness of fund balance information by providing clearer fund balance classifications that comprise a hierarchy based primarily on the extent to which a governmental entity is bound to observe constraints imposed on the use of the resources.

- Restricted fund balance results from externally imposed constraints put on resources.
- Committed fund balance represents amounts that have been formally set aside by the Board of Commissioners for use for specific purposes. Commitments are made and can be rescinded only via resolution of the Board.
- Assigned fund balance represents an intent to spend resources on specific purposes expressed by the Board of Commissioners or a person authorized by the Board to make those assignments. An assignment is less restrictive than a commitment.

The following are estimated amounts recommended for the 2021 designation of Restricted, Committed and Assigned Fund Balance as required under GASB 54.

Restricted Fund Balance:	
• Lake St. Clair Marina (grant requirement)	$473,400
• Hudson Mills Canoe Livery (contract requirement)	34,500
Committed Fund Balance:	
• Land	4,686,000
Assigned Fund Balance:	
• Detroit Riverfront Conservancy Project	5,400,000
• Rate Stabilization Fund	735,400
• Planned Use of Fund Balance	3,628,000
• Compensated Absences (sick and vacation)	3,600,000
• Encumbrances	1,000,000

To: Board of Commissioners
From: Shedreka Miller, Chief of Finance
Subject: Report – November Financial Review
Date**:** December 8, 2021

Action Requested: Motion to Receive and File

That the Board of Commissioners receive and file the November Financial Review as submitted by Chief of Finance Shedreka Miller and staff.

Attachment: Financial Review

HURON-CLINTON METROPARKS NOVEMBER FINANCIAL RECAP

NOVEMBER 2021

Administrative Office
13000 High Ridge Drive
Brighton, MI 48814

HURON-CLINTON METROPARKS

METROPARKS.COM

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EXECUTIVE SUMMARY

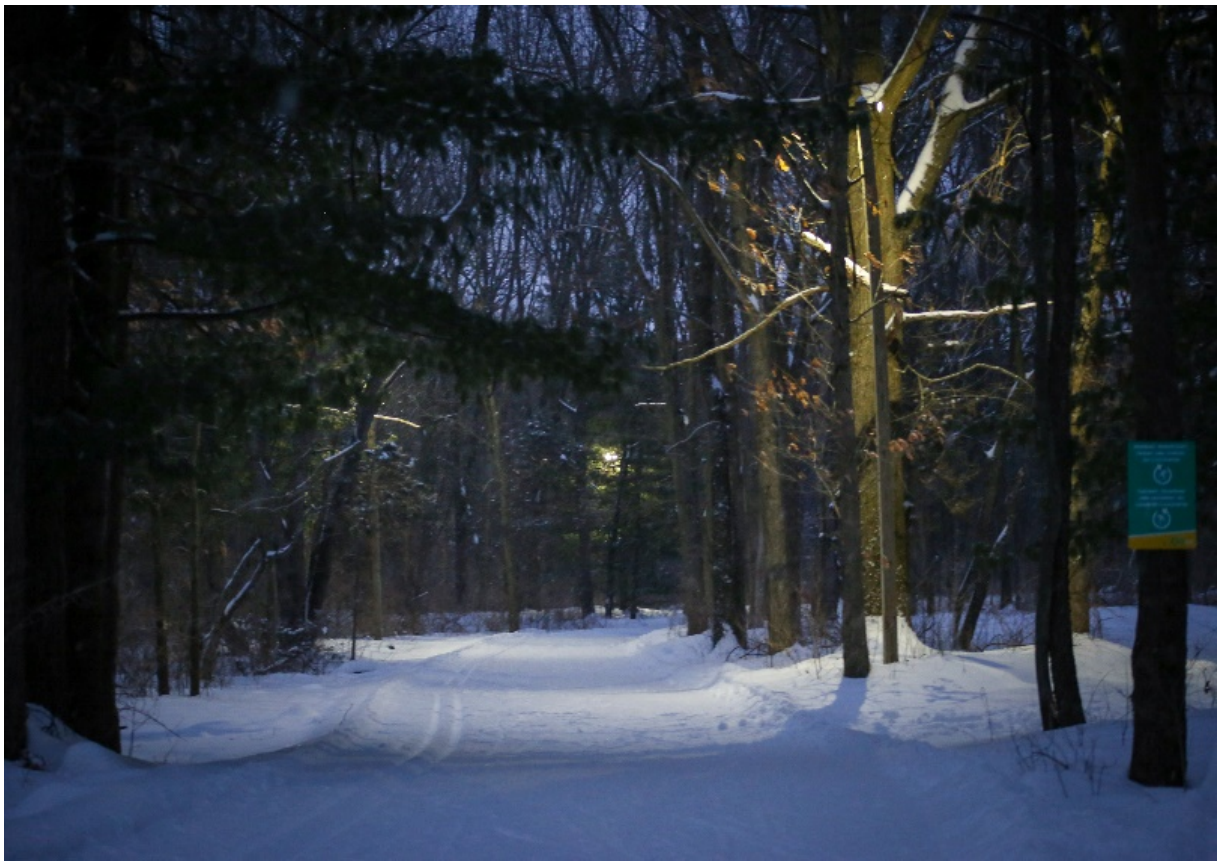
NOVEMBER 2021 FINANCIAL RESULTS

When we compare November 2021 to the pre-pandemic November 2019, park operating revenue increased by $ 579,368 or 288 percent. Year-to-date, park operating revenue is up $3.2 million when compared to 2020 and $4.4 million when compared to 2019. No significant changes to administrative revenue took place during November.

YTD tolling for 2021 is comparable to 2020 figures. The growth of golf has been the other most significant source of operating revenue for 2021.

Overall, year-to-date general fund expenditures are $3.8 million or 8.4 percent higher than 2020. The largest growth is park operations where expense totals have increased by $2.3 million or 7.9 percent. When the general fund comparison is made against 2019 numbers, overall general fund expenditures have increased by $2.7 million or 5.9 percent.

In summary, the Metroparks continue to find ourselves well positioned financially. Revenues have exceeded expectations for the year and expenditures are still within planned budgets.



ADMINISTRATIVE REVENUE

Metroparks administrative revenue consists of all revenue sources that are not generated directly by park operations. Tax revenue accounts for the majority and the largest single source of revenue for the Metroparks.

2021 property tax revenue is expected to increase by $1.3 million from the prior year. State reimbursements for lost personal property tax revenue is budgeted at $550,000. These funds have not yet been received but are expected.

Interest rates continue to be suppressed with renewal CD below 20 basis points. However, we have already reached 98 percent of the amended budget of $117,000.

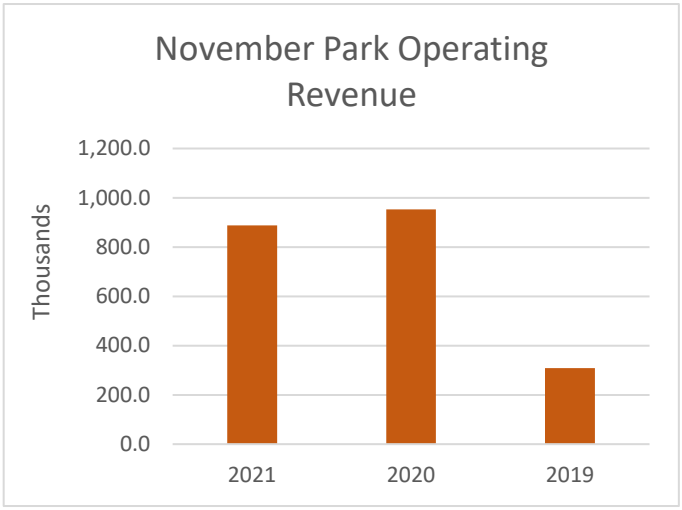
Finally, We are expecting to receive funds from both the Michigan Municipal Risk Management Association and the Michigan Association of Counties related to our general liability and workman's compensation coverage.

PARK OPERATING REVENUE

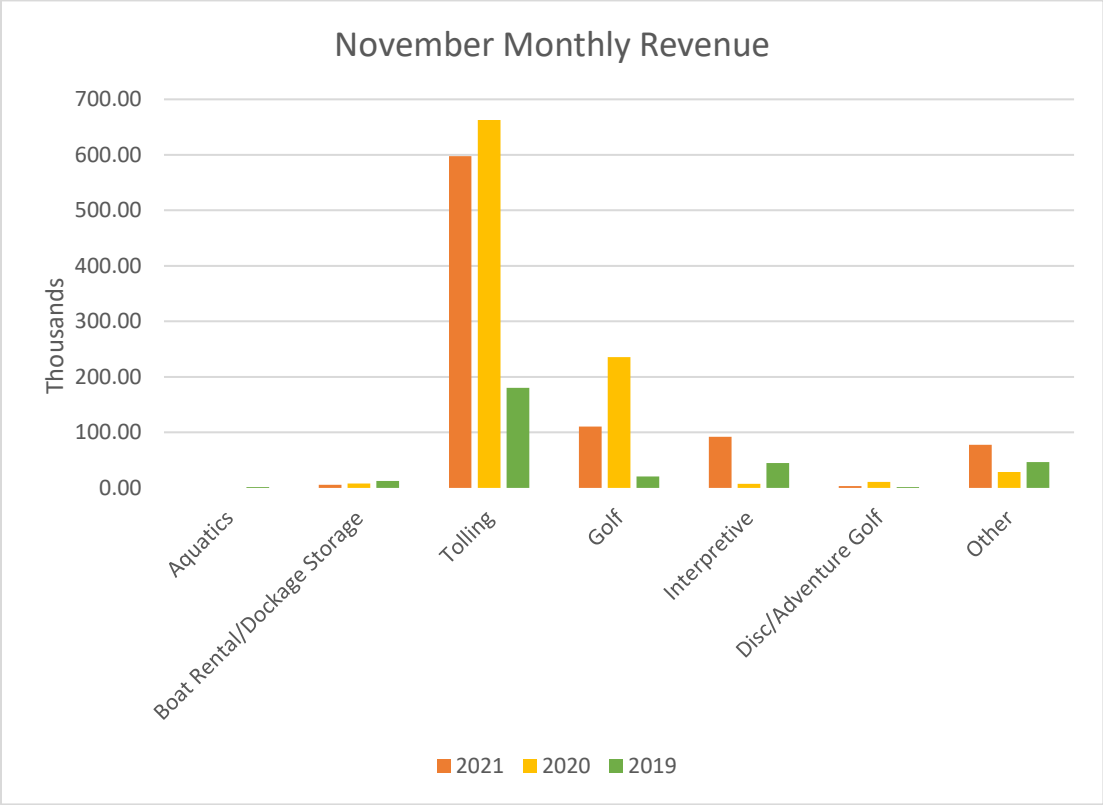
BY ACTIVITY

To make more sense of the data, we will continue sharing comparisons for data from 2019, 2020 and 2021 for the rest of the year. This provides a pre-pandemic benchmark to compare to as well as comparing within different points of the pandemic between last year and this.

Parks generated $887,420 in revenue during November 2021 compared to $953,093 in 2020 and $308,052 in 2019.



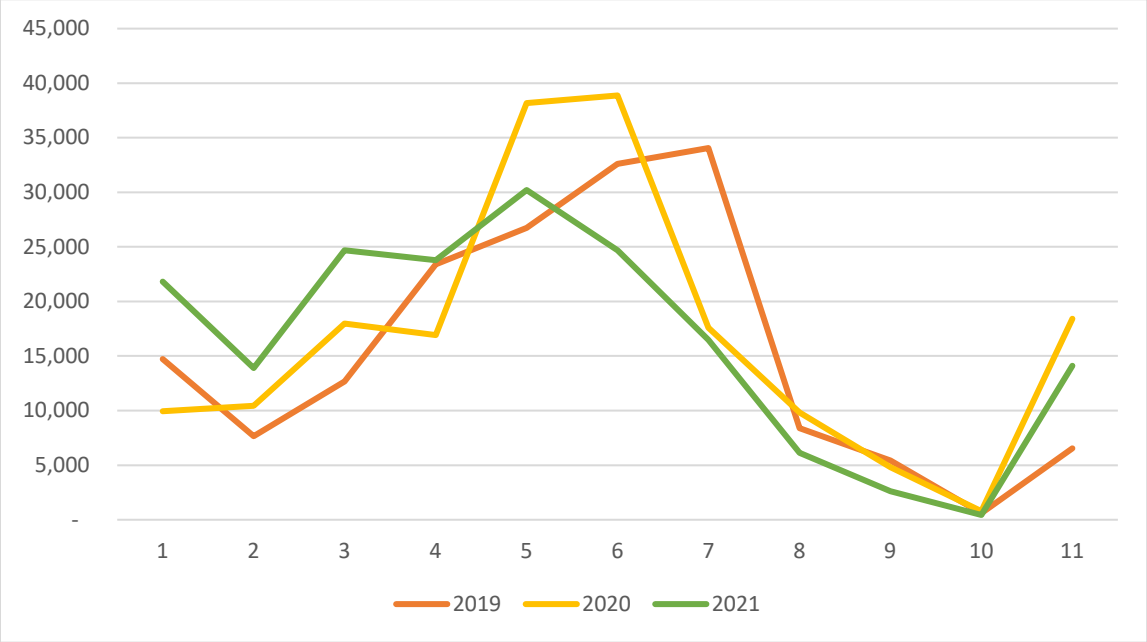
November 2021 operating revenue in total decreased compared to November 2020 by 8.3 percent and increased compared to 2019 by 183.8 percent. The most significant changes are reflected in the chart below:



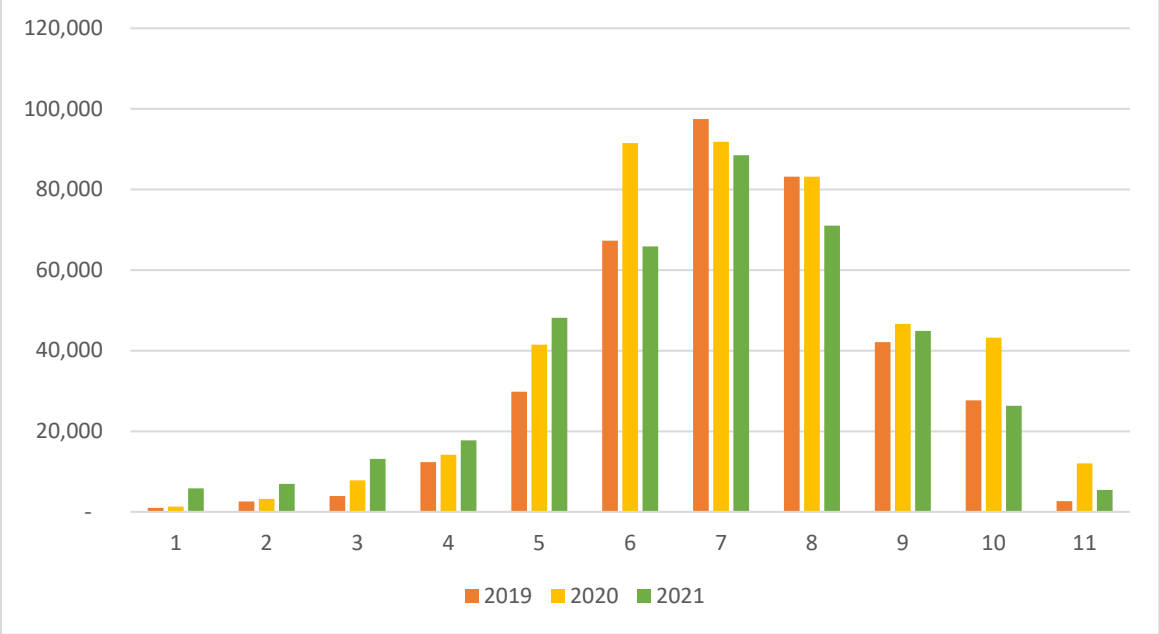
Tolling was the largest source of operating revenue for November; however, the $598,000 generated was lower than 2020 by 10 percent and higher than 2019 by 231 percent.

Golf revenue remained strong in November. Golfing was the second largest source of operating revenue for the month. Golf revenue was 53 percent lower than 2020 and 431 percent higher than 2019.

The following charts graphically represent the trends and shifts in annual and daily permit sales. Year-to-date annual permit sales for 2021 are up 3.5 percent from 2019 and down 2.7 percent from 2020.



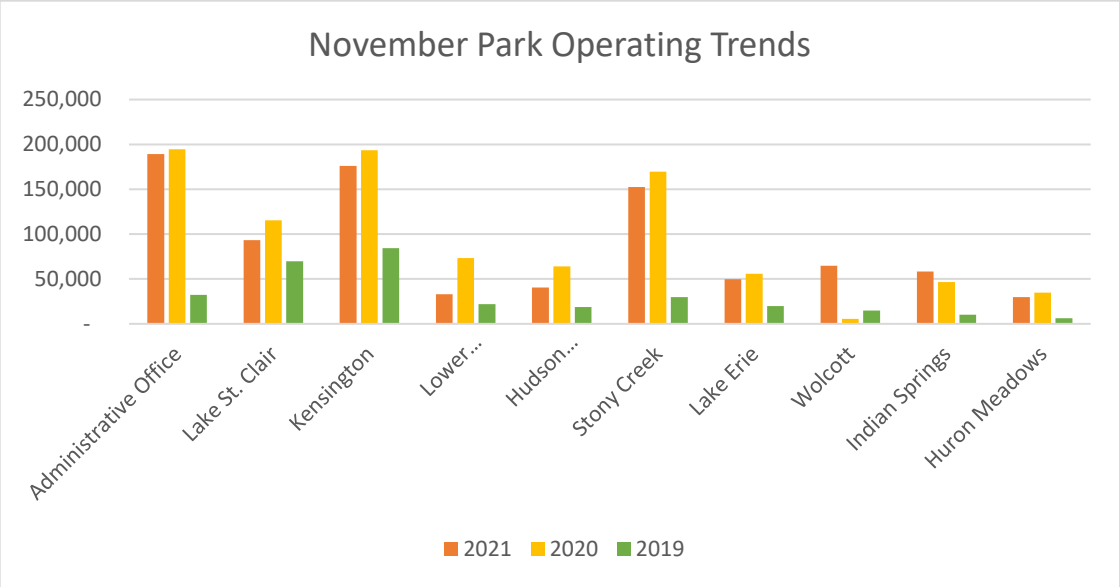
Daily permit sales in November increased 105 percent compared to 2019 and decreased 55 percent compared to 2020.



BY LOCATION

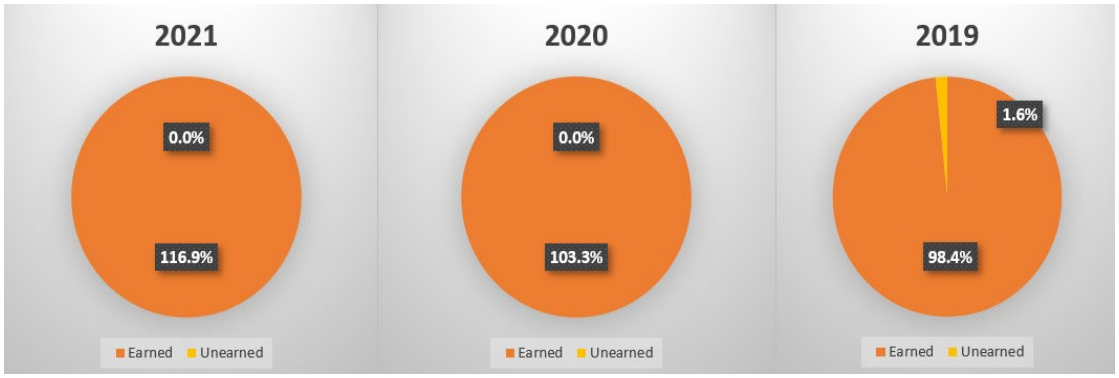
Looking at park operating revenue by the location, we continue to see that just as the pandemic has had uneven impacts across each of the individual Metroparks locations differently as well.

In the chart below, the variance between 2021 and the pre-pandemic 2019 numbers ranges between an increase of $157,000 (483 percent) and $11,000 (49 percent).



Considering year-to-date revenue, the parks continue to exceed a typical year in revenue generation. The pie charts below have been updated to compare the amount of revenue earned at the end of November to the budgeted revenue not yet earned.

At the end of November 2021, we have generated 116.9 percent of budgeted operating revenue earned. In 2020 and pre-pandemic 2019, we were around 103.3 percent and 98.4 percent of operating revenue earned.



EXPENSE

ADMINISTRATIVE OFFICE

Overall, year-to-date Administrative Office expenses are ahead of 2020 by $ 643,735. The increase is primarily in professional services within several areas, one of the largest being information technology costs associated with RecTrac cloud services, as well as IT system security and redundancy improvements. Increased marketing costs have also driven a significant portion of the rise.

MAJOR MAINTENANCE AND CAPITAL

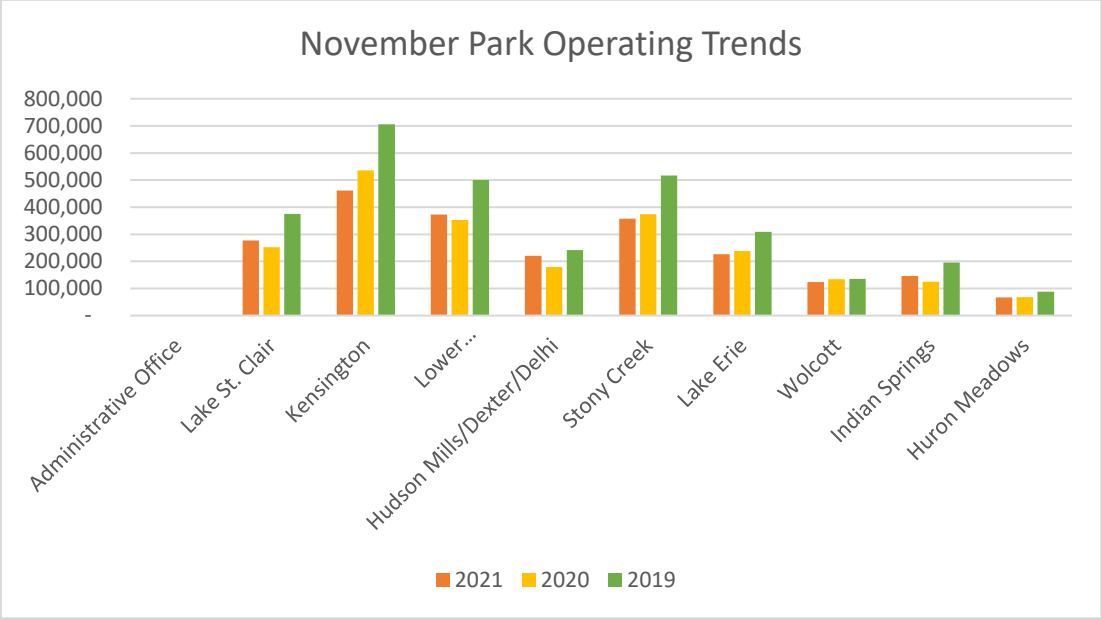
More than 95 percent of planned capital equipment and land acquisition purchases have been either paid for or encumbered. Payments during the month of November totaled just over $88,661 or 3.0 percent of the budget.

As of the end of November, 80 percent of major maintenance projects have been either received or contracted for. November payments for major maintenance totaled over $51,000 or 1.4 percent of the annual major maintenance budget.

PARK OPERATIONS

Overall, year-to-date park operation expense is 2.7 percent higher than the 2019 year-to-date level. When comparing to 2020, there is a more significant increase (7.9 percent) as the 2020 numbers were suppressed by the park's response to the pandemic.

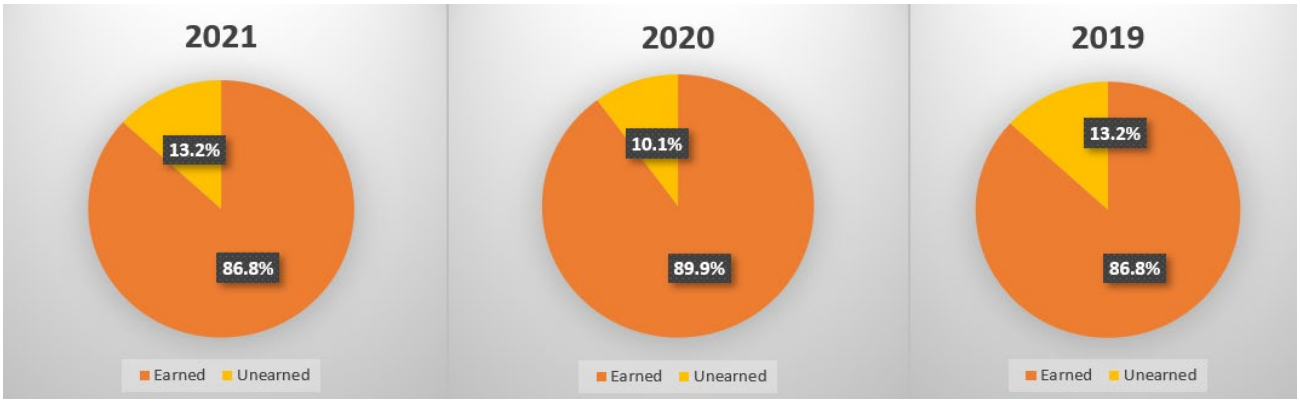
Looking at individual parks for the month of November, the variance between 2021 and 2019 numbers ranges between an increase of $1,000 and a decrease of $243,000 (35 percent).



Looking at year to date expense by activity, aquatic facility expenses are lower than the 2019 level by $604,000 or 31 percent. Golf expenditures are up just $302,000 or 7 percent from pre-pandemic levels and $519,000 or 12 percent above 2020. General park maintenance is also increasing, up $834,000 or 9 percent from 2020 and $605,000 or 7 percent from 2019. It is important to keep in mind that a portion of the increase in expenses were offset by the increase in revenue.

Overall, the parks have been responsive to the situation to effectively utilize the resources at hand. One factor still suppressing costs is the difficulty in filling staff positions. There is growth in full and part-time year-to-date wage costs, but less than would be expected considering we have had two years of over three percent wage increases.

At the end of November, we have used 86.8 percent of the annual budget, in 2020 the amount was 89.9 percent and in 2019 we were at in 86.8 percent. Overall, we are doing well financially considering that we are already at 116.9 percent of budgeted revenue and 86.8 percent of budgeted expenses.



To: Board of Commissioners
From: Jay Bibby, Interim Chief of Planning and Development
Project Title: Approval – Grant Agreement Submission for Accessible Launch
Location: Lake St. Clair Metropark
Date: December 3, 2021

Action Requested: Motion to Approve

That the Board of Commissioners approve the resolution for the Michigan Department of Environment, Great Lakes, and Energy (EGLE) through the Michigan Coastal Management Program for an accessible kayak/paddle launch at Lake St. Clair Metropark as recommended by the Interim Chief of Planning and Development Jay Bibby and staff.

Fiscal Impact: This is a reimbursement grant. The total cost of the project is estimated at $389,726, of which the Metroparks will be responsible for 50 percent. This amounts to $194,863 in cash outlay.

Background: The Metroparks will enhance previously disturbed waterfront parkland in Lake St. Clair Metropark. Construction of a universally accessible kayak launch will provide barrier-free, safe access to nearby Lake St. Clair and Clinton River Water Trails as well as the Black Creek Marsh for paddle sports.

Additional site enhancements include installation of green infrastructure, ADA walkways and parking, native vegetation, and educational signage. This newly activated parkland will provide space for outdoor education activities and other small gatherings to foster appreciation for coastal resources.

To move forward with accepting the grant funding, Metroparks staff must submit the executed project agreement and resolution.

Attachment: Resolution
Project Agreement

HURON-CLINTON METROPOLITAN AUTHORITY
13000 HIGH RIDGE DRIVE, BRIGHTON, MICHIGAN 48114

RESOLUTION APPROVING SUBMISSION OF GRANT AGREEMENT FOR LAKE ST. CLAIR METROPARK – ACCESSIBLE LAUNCH

Resolution No. 2021-10

Motion made by: Commissioner _____

Supported by: Commissioner _____

AT A MEETING OF THE BOARD OF COMMISSIONERS OF THE HURON-CLINTON METROPOLITAN AUTHORITY HELD ON DECEMBER 9, 2021, THE BOARD ADOPTED THE FOLLOWING RESOLUTION:

WHEREAS, the Huron-Clinton Metropolitan Authority, does herby accept the terms of the Agreement from the Michigan Department of Environment, Great Lakes, and Energy through the Michigan Coastal Management Program for an accessible kayak/paddle launch at Lake St. Clair Metropark. The Huron-Clinton Metropolitan Authority does hereby specifically agree, but not by way of limitation, as follows:

1. To appropriate all funds necessary to complete the project during the project period and to provide up to $194,863 dollars in cash outlay for match for the grant authorized by the DEPARTMENT.

2. To maintain satisfactory financial accounts, documents, and records to make them available to the DEPARTMENT for auditing at reasonable times.

3. To construct the project and provide such funds, services, and materials as may be necessary to satisfy the terms of said Agreement.

4. To regulate the use of the facility constructed and reserved under this Agreement to assure the use thereof by the public on equal and reasonable terms.

5. To comply with any and all terms of said Agreement including all terms not specifically set forth in the foregoing portions of this Resolution.

AYES: Commissioners: _____

NAYS: Commissioners: _____

ABSTAIN: Commissioners: _____

ABSENT: Commissioners: _____

I hereby certify that the above is a true and correct copy of the Resolution adopted by the Huron-Clinton Metropolitan Authority, on December 9, 2021

_____
John Paul Rea, Secretary

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

MICHIGAN COASTAL MANAGEMENT GRANT AGREEMENT
BETWEEN THE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
AND THE HURON-CLINTON METROPOLITAN AUTHORITY

This Grant Agreement ("Agreement") is made between the Michigan Department of Environment, Great Lakes, and Energy (EGLE), **Water Resources Division** ("State"), and the **Huron-Clinton Metropolitan Authority** ("Grantee").

The purpose of this Agreement is to provide funding in exchange for work to be performed for the project named below. The State is authorized to provide grant assistance pursuant to the Coastal Zone Management Act of 1972, as amended, P.L. 109-58 (16 U.S.C. 1451-1465 "Federal Act"). Legislative appropriation of funds for grant assistance is set forth in Public Act number 87 of 2021. This Agreement is subject to the terms and conditions specified herein.

Project Name: Lake St. Clair Metropark Accessible Launch Project #: 2022-306A-019

Amount of grant: $194,863 % of grant state $0 / % of grant federal 100

Amount of match: $194,863 = 50% PROJECT TOTAL: $389,726 (grant plus match)

Start Date: December 1, 2021 End Date: December 31, 2022

GRANTEE CONTACT:

Janet Briles, Grants and Recreation Programs Coordinator
Name/Title

Huron-Clinton Metropolitan Authority
Organization

13000 High Ridge Drive
Address

Brighton, Michigan 48114
Address

810-494-6017
Telephone number

CV0048158 AD008
Vendor ID Address ID

Janet.Vandewinkle@Metroparks.com
E-mail address

38-6005602
Federal ID number

074233917
Grantee DUNS number

STATE'S CONTACT:

Weston Hillier, Public Access Coordinator
Name/Title

EGLE, Water Resources Division, Coastal Management Program
Division/Bureau/Office

P.O. Box 30458
Address

Lansing, Michigan 48909-7958
Address

517-230-6487
Telephone number

517-241-9003
Fax number

HillierW@Michigan.gov
E-mail address

The individuals signing below certify by their signatures that they are authorized to sign this Agreement on behalf of their agencies and that the parties will fulfill the terms of this Agreement, including any attached appendices, as set forth herein.

FOR THE GRANTEE:

Signature Date

Amy McMillan, Director, Huron-Clinton Metropolitan Authority
Name/Title

FOR THE STATE:

Signature Date

Teresa Seidel, Director, Water Resources Division
Name/Title

I. PROJECT SCOPE

This Agreement and its appendices constitute the entire Agreement between the State and the Grantee and may be modified only by written agreement between the State and the Grantee.

(A) The scope of this project is limited to the activities specified in Appendix A and such activities as are authorized by the State under this Agreement. Any change in project scope requires prior written approval in accordance with Section III, Changes, in this Agreement.

(B) By acceptance of this Agreement, the Grantee commits to complete the project identified in Appendix A within the time period allowed for in this Agreement and in accordance with the terms and conditions of this Agreement.

II. AGREEMENT PERIOD

Upon signature by the State, the Agreement shall be effective from the Start Date until the End Date on page 1. The State shall have no responsibility to provide funding to the Grantee for project work performed except between the Start Date and the End Date specified on page 1. Expenditures made by the Grantee prior to the Start Date or after the End Date of this Agreement are not eligible for payment under this Agreement.

III. CHANGES

Any changes to this Agreement other than budget line item revisions less than 10 percent of the budget line item shall be requested by the Grantee or the State in writing and implemented only upon approval in writing by the State. The State reserves the right to deny requests for changes to the Agreement or to the appendices. No changes can be implemented without approval by the State.

IV. GRANTEE DELIVERABLES AND REPORTING REQUIREMENTS

The Grantee shall submit deliverables and follow reporting requirements specified in Appendix A of this Agreement.

(A) The Grantee must complete and submit quarterly financial and progress reports according to a form and format prescribed by the State and must include supporting documentation of eligible project expenses. These reports shall be due according to the following:

Reporting Period	Due Date
December 1, 2021 – March 31, 2022	April 30, 2022
April 1 – June 30, 2022	July 31, 2022
July 1, – September 30, 2022	*TBD
October 1, - December 31, 2022	January 31, 2023

*****Due to the State's year-end closing procedures, there will be an accelerated due date for the report covering July 1 – September 30. Advance notification regarding the due date for the quarter ending September 30 will be sent to the Grantee. If the Grantee is unable to submit a report in early October for the quarter ending September 30, an estimate of expenditures through September 30 must be submitted to allow the State to complete its accounting for that fiscal year.

The forms provided by the State, and also available on website at www.michigan.gov/coastalmanagement, shall be submitted to the State's contact at the address on page 1. The financial report shall specify total expenditures for the quarterly period and the cumulative totals to date. All required supporting documentation (invoices, proof of payment, etc.) for grant and match expenses incurred must be included with the reports.

(B) The Grantee shall provide a final project report in a format prescribed by the State.

(C) The Grantee must provide two copies of all products and deliverables in accordance with Appendix A.

(D) All products shall acknowledge that the project was supported in whole or in part by the Coastal Management Program, EGLE, Water Resources Division, per the guidelines provided by the program.

V. GRANTEE RESPONSIBILITIES

(A) The Grantee agrees to abide by all applicable local, state, and federal laws, rules, ordinances, and regulations in the performance of this grant.

(B) All local, state, and federal permits, if required, are the responsibility of the Grantee. Award of this grant is not a guarantee of permit approval by the State.

(C) The Grantee shall be solely responsible to pay all applicable taxes and fees, if any, that arise from the Grantee's receipt or execution of this grant.

(D) The Grantee is responsible for the professional quality, technical accuracy, timely completion, and coordination of all designs, drawings, specifications, reports, and other services submitted to the State under this Agreement. The Grantee shall, without additional compensation, correct or revise any errors, omissions, or other deficiencies in drawings, designs, specifications, reports, or other services.

(E) The State's approval of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not in any way relieve the Grantee of responsibility for the technical adequacy of the work. The State's review, approval, acceptance, or payment for any of the services shall not be construed as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement.

(F) The Grantee acknowledges that it is a crime to knowingly and willingly file false information with the State for the purpose of obtaining this Agreement or any payment under the Agreement, and that any such filing may subject the Grantee, its agents, and/or employees to criminal and civil prosecution and/or termination of the grant.

VI. USE OF MATERIAL

Unless otherwise specified in this Agreement, the Grantee may release information or material developed under this Agreement, provided it is acknowledged that the State funded all or a portion of its development.

The State, and federal awarding agency, if applicable, retains a royalty-free, nonexclusive and irrevocable right to reproduce, publish, and use in whole or in part, and authorize others to do so, any copyrightable material or research data submitted under this grant whether or not the material is copyrighted by the Grantee or another person. The Grantee will only submit materials that the State can use in accordance with this paragraph.

VII. ASSIGNABILITY

The Grantee shall not assign this Agreement or assign or delegate any of its duties or obligations under this Agreement to any other party without the prior written consent of the State. The State does not assume responsibility regarding the contractual relationships between the Grantee and any subcontractor.

VIII. SUBCONTRACTS

The State reserves the right to deny the use of any consultant, contractor, associate, or other personnel to perform any portion of the project. The Grantee is solely responsible for all contractual activities performed under this Agreement. Further, the State will consider the Grantee to be the sole point of contact with regard to contractual matters, including payment of any and all charges resulting from the anticipated Grant. All subcontractors used by the Grantee in performing the project shall be subject to the provisions of this Agreement and shall be qualified to perform the duties required.

IX. NON-DISCRIMINATION

The Grantee and its sub-recipients or contractors and subcontractors, as applicable, shall comply with the Elliott Larsen Civil Rights Act, 1976 PA 453, as amended, MCL 37.2101 *et seq.*, the Persons with Disabilities Civil Rights Act, 1976 PA 220, as amended, MCL 37.1101 *et seq.*, and all other federal, state, and local fair employment practices and equal opportunity laws and covenants that it shall not discriminate against an employee or applicant for employment, to be employed in the performance of this Agreement, with respect to his or her hire, tenure, terms, conditions, or privileges of employment, including a benefit plan or system or a matter directly or indirectly related to employment, because of religion, race, color, national origin, age, sex, height, weight, partisan considerations, marital status, or a disability or genetic information that is unrelated to the individual's ability to perform the duties of a particular job or position. The Grantee agrees to include in every subcontract entered into for the performance of this Agreement this covenant not to discriminate in employment. A breach of this covenant is a material breach of this Agreement.

X. UNFAIR LABOR PRACTICES

The Grantee shall comply with the Employers Engaging in Unfair Labor Practices Act, 1980 PA 278, as amended, MCL 423.321 *et seq*.

XI. LIABILITY

(A) The Grantee, not the State, is responsible for all liabilities as a result of claims, judgments, or costs arising out of activities to be carried out by the Grantee under this Agreement, if the liability is caused by the Grantee, or any employee or agent of the Grantee acting within the scope of their employment or agency.

(B) Nothing in this Agreement should be construed as a waiver of any governmental immunity by the Grantee, the State, its agencies, or their employees as provided by statute or court decisions.

XII. CONFLICT OF INTEREST

No government employee, or member of the legislative, judicial, or executive branches, or member of the Grantee's Board of Directors, its employees, partner agencies, or their families shall benefit financially from any part of this Agreement.

XIII. ANTI-LOBBYING

If all or a portion of this Agreement is funded with federal funds, then in accordance with OMB Circular A-21, A-87, or A-122, as appropriate, the Grantee shall comply with the Anti-Lobbying Act, which prohibits the use of all project funds regardless of source, to engage in lobbying the state or federal government or in litigation against the State. Further, the Grantee shall require that the language of this assurance be included in the award documents of all subawards at all tiers.

If all or a portion of this Agreement is funded with state funds, then the Grantee shall not use any of the grant funds awarded in this Agreement for the purpose of lobbying as defined in the State of Michigan's lobbying statute, MCL 4.415(2). "'Lobbying' means communicating directly with an official of the executive branch of state government or an official in the legislative branch of state government for the purpose of influencing legislative or administrative action." The Grantee shall not use any of the grant funds awarded in this Agreement for the purpose of litigation against the State. Further, the Grantee shall require that language of this assurance be included in the award documents of all subawards at all tiers.

XIV. DEBARMENT AND SUSPENSION

By signing this Agreement, the Grantee certifies that it has checked the federal debarment/suspension list at www.sam.gov to verify that its agents, and its subcontractors:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or the state.

(2) Have not within a three-year period preceding this Agreement been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state, or local) transaction or contract under a public transaction, as defined in 45 CFR 1185; violation of federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(3) Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) with commission of any of the offenses enumerated in subsection (2).

(4) Have not within a three-year period preceding this Agreement had one or more public transactions (federal, state, or local) terminated for cause or default.

(5) Will comply with all applicable requirements of all other state or federal laws, executive orders, regulations, and policies governing this program.

XV. AUDIT AND ACCESS TO RECORDS

The State reserves the right to conduct a programmatic and financial audit of the project, and the State may withhold payment until the audit is satisfactorily completed. The Grantee will be required to maintain all pertinent records and evidence pertaining to this Agreement, including grant and any required matching funds, in accordance with generally accepted accounting principles and other procedures specified by the State. The State or any of its duly authorized representatives must have access, upon reasonable notice, to such books, records, documents, and other evidence for the purpose of inspection, audit, and copying. The Grantee will provide proper facilities for such access and inspection. All records must be maintained for a minimum of five years after the final payment has been issued to the Grantee by the State.

XVI. INSURANCE

(A) The Grantee must maintain insurance or self-insurance that will protect it from claims that may arise from the Grantee's actions under this Agreement.

(B) The Grantee must comply with applicable workers' compensation laws while engaging in activities authorized under this Agreement.

XVII. OTHER SOURCES OF FUNDING

The Grantee guarantees that any claims for reimbursement made to the State under this Agreement must not be financed by any source other than the State under the terms of this Agreement. If funding is received through any other source, the Grantee agrees to delete from Grantee's billings, or to immediately refund to the State, the total amount representing such duplication of funding.

XVIII. COMPENSATION

(A) A breakdown of costs allowed under this Agreement is identified in Appendix A. The State will pay the Grantee a total amount not to exceed the amount on page 1 of this Agreement, in accordance with Appendix A, and only for expenses incurred and paid. All other costs necessary to complete the project are the sole responsibility of the Grantee.

(B) Expenses incurred by the Grantee prior to the Start Date or after the End Date of this Agreement are not allowed under the Agreement.

(C) The State will approve payment requests after approval of reports and related documentation as required under this Agreement.

(D) The State reserves the right to request additional information necessary to substantiate payment requests.

(E) Payments under this Agreement may be processed by Electronic Funds Transfer (EFT). The Grantee may register to receive payments by EFT at the Contract & Payment Express website (http://www.cpexpress.state.mi.us).

(F) An amount equal to 25 percent of the grant award will be withheld by the State until the project is completed in accordance with Section XIX, Closeout, and Appendix A.

(G) The Grantee is committed to the match percentage on page 1 of the Agreement, in accordance with Appendix A. The Grantee shall expend all local match committed to the project by the End Date on page 1 of the Agreement.

XIX. CLOSEOUT

(A) A determination of project completion, which may include a site inspection and an audit, shall be made by the State after the Grantee has met any match obligations, satisfactorily completed the activities, and provided products and deliverables described in Appendix A.

(B) Upon issuance of final payment from the State, the Grantee releases the State of all claims against the State arising under this Agreement. Unless otherwise provided in this Agreement or by State law, final payment under this Agreement shall not constitute a waiver of the State's claims against the Grantee.

(C) The Grantee shall immediately refund to the State any payments in excess of the costs allowed by this Agreement.

XX. CANCELLATION

This Agreement may be canceled by the State, upon 30 days written notice, due to Executive Order, budgetary reduction, other lack of funding, upon request by the Grantee, or upon mutual agreement by the State and Grantee. The State may honor requests for just and equitable compensation to the Grantee for all satisfactory and eligible work completed under this Agreement up until 30 days after written notice, upon which time all outstanding reports and documents are due to the State, and the State will no longer be liable to pay the grantee for any further charges to the grant.

XXI. TERMINATION

(A) This Agreement may be terminated by the State as follows.

(1) Upon 30 days written notice to the Grantee:

a. If the Grantee fails to comply with the terms and conditions of the Agreement, or with the requirements of the authorizing legislation cited on page 1, or the rules promulgated thereunder, or other applicable law or rules.
b. If the Grantee knowingly and willingly presents false information to the State for the purpose of obtaining this Agreement or any payment under this Agreement.
c. If the State finds that the Grantee, or any of the Grantee's agents or representatives, offered or gave gratuities, favors, or gifts of monetary value to any official, employee, or agent of the State in an attempt to secure a subcontract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Agreement.
d. If the Grantee or any subcontractor, manufacturer, or supplier of the Grantee appears in the register of persons engaging in unfair labor practices that is compiled by the Michigan Department of Licensing and Regulatory Affairs or its successor.
e. During the 30-day written notice period, the State shall withhold payment for any findings under subparagraphs a through d, above and the Grantee will immediately cease charging to the grant and stop earning match for the project (if applicable).

(2) Immediately and without further liability to the State if the Grantee, or any agent of the Grantee, or any agent of any subcontract is:

a. Convicted of a criminal offense incident to the application for or performance of a State, public, or private contract or subcontract.
b. Convicted of a criminal offense, including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or attempting to influence a public employee to breach the ethical conduct standards for State of Michigan employees.
c. Convicted under State or federal antitrust statutes.
d. Convicted of any other criminal offense that, in the sole discretion of the State, reflects on the Grantee's business integrity.
e. Added to the federal or state Suspension and Debarment list.

(B) If a grant is terminated, the State reserves the right to require the Grantee to repay all or a portion of funds received under this Agreement.

XXII. IRAN SANCTIONS ACT

By signing this Agreement, the Grantee is certifying that it is not an Iran linked business, and that its contractors are not Iran linked businesses, as defined in MCL 129.312.

XXIII. FEDERAL FUNDING REQUIREMENTS

A maximum of 100 % of total disbursements is funded with Federal Funding. The Catalog of Federal Domestic Assistance (CFDA) title is Coastal Zone Management Administration Awards and the CFDA number is 11.419. The federal grant number is NA20NOS4190200, and this grant is funded with Federal funds from the National Oceanic and Atmospheric Administration, United States Department of Commerce. By accepting this Agreement, the Grantee agrees to comply with all applicable Federal statutes and regulations in effect with respect to the period during which it receives grant funding. These regulations include, but are not limited to the following:

(A) Single Audit
Grantees spending $750,000 or more in federal funds in their fiscal year shall have a single audit performed in compliance with 2 CFR 200.501(a). This audit must be performed and submitted to the Federal Audit Clearinghouse (https://harvester.census.gov/facweb/) within nine months from the end of the grantee's fiscal year, or 30 days after receiving the report from the auditors. It is the responsibility of the Grantee to report the expenditures related to this grant on the Grantee's annual Schedule of Expenditures of Federal Awards.

(B) The Grantee will comply with the Hatch Political Activity Act, as amended, 5 USC §§ 1501-1508, and the Intergovernmental Personnel Act of 1970 as amended by Title (6) of the Civil Service Reform Act, 42 USC § 4728, which states that employees working in programs financed with federal grants may not be a candidate for elective public office in a partisan election, use official authority or influence to affect the result of an election, or influence a state or local officer to provide financial support for a political purpose.

(C) Historic Preservation
Any project directed toward historic preservation will include timely consultation with the State Historic Preservation Office (SHPO), Department of History, Arts, and Libraries. Agreements will not be awarded before adequate consultation with this agency. No construction or repair work will be performed prior to obtaining clearance from SHPO concerning possible effects to archeological or historic resources.

For projects not primarily aimed at historic preservation, federal and state agencies, principally the State Historic Preservation Officer, may make recommendations pursuant to federal and state requirements for minimizing possible adverse effects on historic and archaeological resources. In consultation with the Project Manager, the Grantee for such a project will consider such recommendations and will take steps to avoid or mitigate possible damage as appropriate and feasible.

(D) Availability to Users
Projects developed for public use with assistance from this Agreement shall be open to entry and use by all persons, regardless of race, color, religion, sex or national origin, who are otherwise eligible. Discrimination on the basis of residence, including preferential reservation or membership systems is prohibited, except to the extent that differences in admission or other fees may be maintained on the basis of residence where local contributions to the project make such differences reasonable.

(E) Obligation of Grant Funds
Grant funds may not, without advance written approval of the Project Manager, be obligated prior to the effective date or subsequent to the end date of this Agreement. Obligations outstanding as of the end date shall be liquidated within 45 days. Such obligations must be related to goods or services provided and utilized within the Agreement period, except that reasonable costs associated with the Agreement closeout, e.g., final reports, may be incurred within a short time after the end date.

(F) Bonds
Contractors/subcontractors performing construction work costing $1000 (one thousand dollars) or more shall furnish, in acceptable form, surety bonds in the amount of 100 percent of their respective contract sums under this agreement. These bonds will be security for faithful performance of this contract or subcontracts there under, and for payment of all persons performing labor and furnishing material in connection with this contract or subcontract there under. The agency receiving a subgrant under this agreement will secure evidence (e.g., a letter of certification from a reputable bonding company) that its construction contractors/subcontractors have obtained such bonds which will remain in effect for the duration of the project, or will otherwise arranged for an equally effective performance bond. The State will not pay any charge for such bonds additional to the face value of this contract/subgrant agreement.

(G) Guarantee
The public/nonprofit agency responsible for this project shall require each construction contractor/ subcontractor to furnish a written guarantee to remedy any defects due to faulty materials or workmanship which appear in the work within one year from the date of final acceptance by the public/nonpublic agency responsible. Construction contractors and subcontractors shall provide such guarantees.

(H) Inspection
Construction contractors and subcontractors shall at all times permit and facilitate inspection of the work by appropriate representatives of the public/nonprofit agency responsible for the project and the State. Agencies responsible for projects shall include this requirement in all construction contracts and subcontracts.

(I) Operation and Maintenance
The subgrantee assures that property developed with assistance from this agreement will be kept reasonably safe, clean, and sanitary. Structures and improvements (trails, boardwalks, etc.) shall be kept in reasonable repair throughout their estimated lifetime.

(J) Unemployment Claims
The Grantee is liable for any valid unemployment compensation claims. No unemployment compensations claims will be paid from this Agreement. This provision does not prohibit standard allocations to unemployment compensation funds as part of the approved indirect cost/fringe benefit arrangements.

(K) Flood Insurance Requirements
Funds from this Agreement will not be used to assist the construction or acquisition in identified flood hazard areas for which the appropriate governmental unit has failed to comply with flood insurance purchase requirements under Sections 102(2) of the Flood Disaster Protection Act of 1973 (public Law 93-234), approved December 31, 1976.

XXIV. PROGRAM GENERAL PROVISIONS

(A) Grant Acknowledgement
All project work products must acknowledge financial assistance of the Michigan Coastal Management Program and the NOAA.

(1) This grant acknowledgement will include the EGLE, and the NOAA logos to be provided by the State and the following (or other mutually agreed upon) language: "Financial assistance for this project was provided, in part, by the Coastal Management Program, Water Resources Division, Michigan Department of Environment, Great Lakes, and Energy, under the National Coastal Zone Management Program, through a grant from the National Oceanic and Atmospheric Administration, U.S. Department of Commerce."

(2) A view disclaimer is required for reports/videos in addition to the EGLE and the NOAA logos and financial acknowledgment language listed in the above paragraph. The view disclaimer shall include the following language: "The statements, findings, conclusions, and recommendation in this (report/video) are those of the (Grantee) and do not necessarily reflect the views of the Michigan Department of Environment, Great Lakes, and Energy or the National Oceanic and Atmospheric Administration."

(3) For press releases, newsletters, newspaper articles, graphic displays meant for public presentations and in other public forums, the EGLE and the NOAA logos may not be required; however, the funding source will be listed as the "Michigan Coastal Management Program, Water Resources Division, Department of Environment, Great Lakes, and Energy and the National Oceanic and Atmospheric Administration."

(4) The cover of the title page of, or other prominent place within, all reports, studies, or other documents, published or distributed electronically or hard copy, and acknowledgement pages of websites/web pages, that are supported in whole or in part by this award or any subawards shall acknowledge the financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office for Coastal Management, National Oceanic and Atmospheric Administration.

(B) Extensions
In accordance with Section III - Changes, page 2 of this agreement, the Grantee shall submit to the State, for review and approval, written extension requests no less than 45 days prior to the end date of the Agreement. The Grantee shall provide justification for the extension and the requested new end date of the Agreement.

(C) Geospatial Data
All geospatial data collected and/or produced for the purposes of this grant and put into a GIS layer must be provided, along with associated metadata (requirements described below), to the Coastal Management Program on a CD, DVD, or portable hard drive in ESRI's ArcGIS format (shapefile including appropriate projection file or geodatabase).

Grantee shall provide relevant information (e.g., expected dates of data collection, type of collection, flight lines, etc.) on the collection or production of geospatial data (e.g., information for GIS data layers, acquisition of topographic or bathymetric data or other remotely sensed data), to the State Contact as early as practicable and before data collection commences.

Grantee shall ensure the data and the planned acquisition activities are registered in Geospatial Platform (geodata.gov) and comply with OMB Circular A-16, Coordination of Geographic Information and Related Spatial Data Activities at:
http://www.whitehouse.gov/omb/circulars/a016/a016_rev.html.

The Grantee shall document all new geospatial data it collects or produces using the metadata standards developed by the Federal Geospatial Data Committee (FGDC), and make that standardized documentation electronically accessible to NOAA, if requested. Current FGDC standards can be found at: http://www.fgdc.gov/metadata/csdgm/. Metadata that conforms to the proposed North American Profile of the ISO (International Organization for Standardization) 19115, which may be adopted by the FGDC, is also acceptable. To the greatest extent practicable, the recipient shall also, prior to the conclusion of the award, make the data collected publicly accessible online, except where limited by law, regulation, policy, or security requirements.

In accordance with the NOAA Data Sharing Policy, the Grantee shall ensure the geospatial data and information collected and or created under this Grant Agreement will be made visible, accessible, and independently to users, free of charge or at minimal cost. Information shall be made available in a timely manner and typically no later than two years after the data or information is collected or created except when limited by law, regulation, policy, or by security requirements.

(D) Prevent Spread of Invasive Species
The Grantee shall ensure that any field work conducted for this project, including construction activities, survey(s), educational, training or volunteer programs/activities will be conducted in accordance with appropriate, federal, state, and local laws and will follow recognized best practices and take the necessary steps to minimize the risk of spreading terrestrial and aquatic invasive species and to minimize the impact to the human environment during this project. The Grantee's selection of project-appropriate measures is required to take into consideration the type of work being conducted and the specific site situation, including the changes in risk level according to season and weather.

(E) Low-Cost Construction/306A Provisions
This low-cost construction project shall be located on public land and open to the general public free of charge. If the property or elements constructed under this grant are leased or sold out of public ownership or are used for purposes other than public use, the Grantee shall reimburse the State for grant funds received for the project.

Required permits (local, state, tribal, and federal) shall be submitted to the State Contact before any earth movement can commence on any aspects of the low-cost construction project.

By affixing their signature to this Agreement, the Grantee accepts the responsibility for maintaining, in serviceable condition, the items constructed with the funds jointly provided by the State and the Grantee for a minimum of 20 years from the end date of this Agreement.

A sign provided by the State shall be erected at the site during construction and permanently installed at the site indicating that the project is being funded under a grant from the Coastal Management Program and the National Oceanic and Atmospheric Administration.

(F) Compensation
Grant payments will be made quarterly on a costs-incurred and paid only basis. Estimates of costs will not be accepted. The following is required when requesting a grant payment for incurred costs:

- A written request specifying the dollar amount
- Corresponding progress and financial reports for that quarter
- Copies of supporting documentation for grant and match expenses (invoices and receipts or other supporting documentation) for that quarter.

(G) Final Quarter Report Requirements:
Grantee shall submit to the State the Final Quarter Report no later than 30 days past the end date of the Grant Agreement.

The Final Quarter Report shall include:

- Written request from the Grantee requesting final payment and specify the dollar amount.
- One copy of a detailed narrative that describes all project tasks performed, including any special considerations or problems encountered.
- One progress report showing completion of all project tasks.
- One financial report showing all grant and match expenditures.
- One copy of invoices, receipts, or other documentation for grant and match expenditures incurred on the project.
- Two sets of color photographs depicting the work completed before and after on the project. In addition, one photograph of the MCMP permanent project sign installed at the project site.

All final work products shall be submitted to the state as hard copy and digitally on two CD/DVDs or a flash drive. E-mail submissions will not be accepted.

APPENDIX A

SECTION I: PROJECT DESCRIPTION

The Grantee will enhance previously disturbed waterfront parkland in Lake St. Clair Metropark. Construction of a universally accessible kayak launch will provide barrier-free, safe access to nearby Lake St. Clair and Clinton River Water Trails; as well as the Black Creek Marsh for paddlesports. Additional site enhancements include installation of green infrastructure, ADA-compliant walkways and parking, native vegetation, and educational signage. This newly activated parkland will provide space for outdoor education activities and other small gatherings to foster appreciation for coastal resources.

SECTION II: PROJECT TASKS AND SCHEDULE

Tasks	Q1 Dec. 2021-Mar. 2022	Q2 Apr.-Jun. 2022	Q3 Jul.-Sept 2022	Q4 Oct.-Dec. 2022	Work Products / Outcomes
1. Grantee staff to finalize design and engineering. documents.	X				Final construction documents.
2. Obtain all required permits and submit to State Contact.	X				Permits submitted to State Contact.
3. Develop and release bid documents and select construction contractor(s). Submit Contractor's Qualification Form to State Contact verifying subcontractor(s) is/are not on the debarment list.	X				Bid package released. Project construction contract awarded. Contractor's Qualification Form submitted.
4. Install grant funding acknowledgment sign in a temporary location prior to the start of construction activities.	X				Grant funding acknowledgment sign installed in temporary location.
5. Conduct on-site construction in accordance with Appendix B and related permits.		X	X	X	ADA kayak launch and gangways installed. Sand launch area constructed. ADA walkways and parking constructed. Site amenities installed. Landscaping installed. Site stabilized.
6. Install grant funding acknowledgment sign in a permanent location in the project area.			X		Grant funding acknowledgment sign installed in permanent location.
7. Take before, during, and after photos to document construction activities.	X	X	X	X	Before, during, and after photos.
8. Conduct project opening ceremony.			X		Opening celebration hosted. Photos of event and/or other multimedia promotion.

Tasks	Q1 Dec. 2021- Mar.	Q2 Apr.- Jun. 2022	Q3 Jul.- Sept 2022	Q4 Oct.- Dec. 2022	Work Products / Outcomes
9. Submit Quarterly Progress and Financial Reports to the State Contact.	X	X	X	X	Quarterly Progress and Financial Reports; Final Quarter Report includes Final Project Narrative.

SECTION III: PROJECT BUDGET

See attached Project Budget Form.

APPENDIX B

SECTION I: CONSTRUCTION OPERATIONAL PRACTICES AND ACTIVITIES

A. Construction Project Tasks

1. Conduct site preparations including safety measures, staking, soil erosion and sedimentation control measures, fence removal, select brush removal, and site grading.
2. Install ADA-compliant kayak launch, gangways, and sand launch area.
3. Construct ADA-compliant walkways and designated parking.
4. Install site amenities including signage, benches, and fencing/gates.
5. Install native vegetation, tree plantings, and turf.
6. Conduct final site stabilization and removal of temporary soil erosion and sedimentation control measures.

B. Best Management Practices

Equipment used for this project will be decontaminated prior to entering the site, and when leaving the site. Equipment will be cleaned at the site, or a directly adjacent maintenance yard. Any vegetative material shall be collected and appropriately disposed of. Equipment will be washed or cleaned with compressed air. Material and wash water will be collected into an appropriate contained system.

Additionally, best management practices will be followed to ensure the proposed project does not have an adverse impact on the environment. All required local, state, and federal permits will be obtained prior to the commencement of any proposed earth change. See XXIV, Program General Provisions, of the Grant Agreement for invasive species requirements.

C. Project Footprint and Earth Change Limits

The project activities include barrier-free public access enhancements to Lake St. Clair and local water trails for nonmotorized paddlesports and outdoor education. The entire project site is approximately 3.8 acres; however, earth disturbance is limited to the kayak launch area, walkways, parking, and tree plantings. Earth disturbance will primarily impact an approximate 20,000 square foot area along the shoreline for the kayak launch installation and associated features. Minimal tree removal is expected during construction and will be conducted before March 31, 2022.

See Site Plan under Section II, Site Plan(s), for additional details.

D. Construction Methods/Equipment and Materials

1. Construction Access

Public access will be restricted, and safety measures will keep unauthorized persons out of the construction area. During construction, the maintenance yard to the east of the project site will be used for equipment and material staging. Equipment will stay on existing park roads and/or parking lots adjacent to the project site, and gain access through existing entry points.

2. Construction Methods/Equipment

    a) Kayak Launch Area

Erosion control measures will be implemented to prevent soil erosion and sedimentation to waterways before earth moving activities begin. The floating portion of the kayak launch with transfer stations is anticipated to be 18’x50’. Two, 30’ long gangways will connect the floating kayak launch to the shoreline. Two sand launching areas are to be installed, bisected by the

prefabricated kayak launch and gangways. One sand launch area is anticipated to be 25'x60', while the other is anticipated to be 25'x30'. A review of feasible soft shoreland stabilization alternatives will be reviewed and approved by the State for the launch structure between the gangways. Small-scale dozers, excavators, and a small truck-mounted crane will likely be used for floating dock installation. Small-scale excavator or backhoe is likely to be used for on-site digging where hand tools are not feasible.

b) ADA Walkways and Parking

Approximately 1,200 linear feet of total walkway is to be constructed. Two ADA-compliant designated parking spaces will be constructed. An approximately 15,000 square foot porous, aggregate parking lot will be constructed to provide designated access for all other kayak launch patrons; alleviating crowding issues at the nearby motorized boat launch. The parking lot area is already disturbed, so minimal additional earth disturbance is anticipated. Small-scale concrete mixers and loaders are anticipated to be in use where hand tools are not feasible.

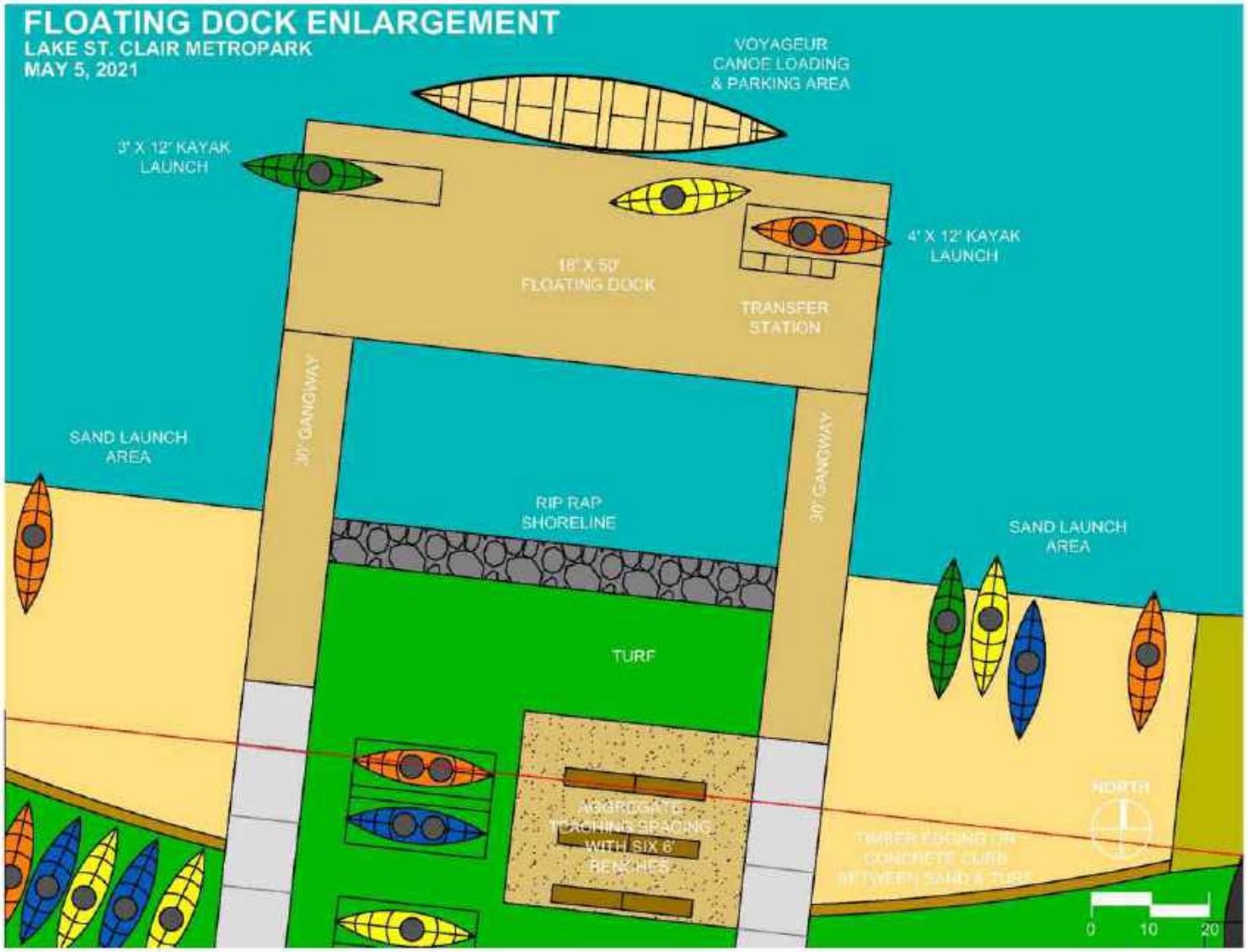
c) Site Amenities and Landscaping

Six, 6' long benches will be installed in the outdoor education space adjacent to the the floating kayak launch and sand launch area. The entire site will be secured with 8' high perimeter fencing. A double swing-gate will be installed to provide Grantee staff access to the adjacent maintenance yard. Fifteen trees will be planted as a result of this project, which is more than will be removed. Turfgrass will be installed in designated areas with minimal excavating depths required. Small-scale excavator or backhoe is likely for on-site digging where hand tools are not feasible.

3. Construction Materials

Prefabricated ADA-compliant kayak launch made from composite plastic with galvanized aluminum and steel hardware. A 50/50 sand and pea stone mix for the sand launch area. A 21AA aggregate base, and 6-inch reinforced concrete for walkways to the kayak launch nearest the water's edge. 13A hot-mix asphalt for ADA parking and additional walkways. Sheet pile reinforcement anticipated where gangways anchor to shoreline. 13A hot-mix asphalt for ADA-compliant parking, and walkways. Crushed limestone for the pervious aggregate lot. Concrete used near shoreline instead of asphalt to prevent oils from the asphalt from reaching water resources. Silt fence and turbidity curtain for soil erosion and sedimentation control.

SECTION II: SITE PLAN


FLOATING DOCK ENLARGEMENT
LAKE ST. CLAIR METROPARK
MAY 5, 2021
VOYAGEUR
CANOE LOADING
& PARKING AREA
3' X 12' KAYAK
LAUNCH
4' X 12' KAYAK
LAUNCH
18' X 50'
FLOATING DOCK
TRANSFER
STATION
30' GANGWAY
30' GANGWAY
SAND LAUNCH
AREA
RIP RAP
SHORELINE
SAND LAUNCH
AREA
TURF
AGGREGATE
TOPPING SPACING
WITH SIX 6'
BENCHES
NORTH
0
10
20

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
WATER RESOURCES DIVISION
COASTAL MANAGEMENT PROGRAM
PROJECT BUDGET

Organization Name:	Huron-Clinton Metropolitan Authority
Project Name:	Lake St. Clair Metropark Accessible Launch
Project Number:	2022-306A-019

STAFFING NAME & TITLE	HOURS	RATE	GRANT AMOUNT	LOCAL MATCH AMOUNT	TOTAL
			$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
Subtotal			$ -	$ -	$ -

FRINGE BENEFITS		RATE			
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
			$ -	$ -	$ -
Subtotal			$ -	$ -	$ -
STAFFING AND FRINGE BENEFITS Subtotal			$ -	$ -	$ -

CONTRACTUAL SERVICES	HOURS or UNITS	RATE or TOTAL			
Construction Contractor(s) - TBD	1.00	$ 389,726.00	$ 194,863.00	$ 194,863.00	$ 389,726.00
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
CONTRACTUAL SERVICES Subtotal			$ 194,863.00	$ 194,863.00	$ 389,726.00

SUPPLIES & MATERIALS (itemize)	QUANTITY	COST			
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
Subtotal			$ -	$ -	$ -

EQUIPMENT (any item over $5000)	QUANTITY	COST			
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
Subtotal			$ -	$ -	$ -

TRAVEL					
MILEAGE	MILES	RATE			
		$ -	$ -	$ -	$ -
LODGING	NIGHTS	RATE			
		$ -	$ -	$ -	$ -
MEALS	QUANTITY	RATE			
		$ -	$ -	$ -	$ -
OTHER (tolls, parking, etc.)	QUANTITY	RATE			
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
		$ -	$ -	$ -	$ -
Subtotal			$ -	$ -	$ -
PROJECT					
Subtotal			$ 194,863.00	$ 194,863.00	$ 389,726.00
INDIRECT					
Indirect Approach	No Indirect Expenses Requested				
Rate					
Subtotal			$ -	$ -	$ -
What expense categories are included in the indirect calculation (e.g. salary and fringe, travel)?					
GRANT AND MATCH BUDGET					
TOTAL			$ 194,863.00	$ 194,863.00	$ 389,726.00
Project Percentage Split			50.00%	50.00%	

SOURCES OF MATCH:		DOLLAR VALUE COMMITTED:		
Organization		In Kind	Cash	Total
Huron-Clinton Metropolitan Authority		$ -	$ 194,863.00	$ 194,863.00
Clinton River Watershed Council		$ 500.00	$ 5,000.00	$ 5,500.00
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
		$ -	$ -	$ -
Subtotal		$ 500.00	$ 199,863.00	
Total Match Must Equal Amount in Budget Sheet Above				$ 200,363.00

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its program or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

This form and its contents are subject to the Freedom of Information Act and may be released to the public.

PARK	MONTHLY VEHICLE ENTRIES				MONTHLY TOLL REVENUE			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St Clair	17,635	28,548	17,854	-1%	$ 65,348	$ 110,218	$ 71,224	-8%
Wolcott Mill	3,094	3,590	1,872	65%	$ 2,127	$ 4,086	$ 3,313	-36%
Stony Creek	27,309	44,479	26,791	2%	$ 81,410	$ 131,927	$ 70,986	15%
Indian Springs	4,213	6,944	4,209	0%	$ 14,994	$ 19,195	$ 9,828	53%
Kensington	46,190	60,123	44,488	4%	$ 111,481	$ 152,250	$ 83,981	33%
Huron Meadows	5,715	8,059	4,532	26%	$ 6,370	$ 150	$ 405	1474%
Hudson Mills	15,374	20,050	13,106	17%	$ 21,571	$ 26,859	$ 18,433	17%
Lower Huron/Willow/Oakwoods	36,106	80,474	47,343	-24%	$ 28,640	$ 38,025	$ 20,584	39%
Lake Erie	6,752	14,213	9,343	-28%	$ 22,107	$ 27,463	$ 18,909	17%
Monthly TOTALS	**162,388**	**266,480**	**169,538**	-4%	**$ 354,048**	**$ 510,173**	**$ 297,662**	19%

PARK	Y-T-D VEHICLE ENTRIES				Y-T-D TOLL REVENUE			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St Clair	514,545	526,515	435,951	18%	$ 1,991,843	$ 1,995,994	$ 1,692,064	18%
Wolcott Mill	41,094	30,263	36,375	13%	$ 32,738	$ 21,959	$ 51,370	-36%
Stony Creek	670,583	768,035	611,155	10%	$ 2,665,182	$ 3,098,566	$ 2,493,074	7%
Indian Springs	101,664	109,082	91,925	11%	$ 362,379	$ 362,051	$ 304,214	19%
Kensington	861,137	906,936	788,853	9%	$ 3,029,015	$ 3,244,679	$ 2,715,367	12%
Huron Meadows	121,665	114,213	97,430	25%	$ 90,853	$ 35,740	$ 67,485	35%
Hudson Mills	264,318	284,458	221,130	20%	$ 637,900	$ 629,863	$ 520,197	23%
Lower Huron/Willow/Oakwoods	581,246	658,061	559,455	4%	$ 919,690	$ 886,588	$ 942,874	-2%
Lake Erie	216,068	226,711	195,841	10%	$ 588,315	$ 632,212	$ 592,565	-1%
Monthly TOTALS	**3,372,320**	**3,624,274**	**3,038,114**	11%	**$ 10,317,915**	**$ 10,907,652**	**$ 9,379,211**	10%

PARK	MONTHLY PARK REVENUE				Y-T-D PARK REVENUE			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St Clair	$ 91,958	$ 110,708	$ 73,737	25%	$ 2,858,134	$ 2,448,347	$ 2,347,580	22%
Wolcott Mill	$ 62,182	$ 5,732	$ 11,922	422%	$ 198,366	$ 90,487	$ 199,305	0%
Stony Creek	$ 110,953	$ 191,268	$ 101,189	10%	$ 5,113,550	$ 5,024,236	$ 4,219,542	21%
Indian Springs	$ 44,395	$ 54,476	$ 31,672	40%	$ 1,585,106	$ 1,283,846	$ 1,154,749	37%
Kensington	$ 161,490	$ 200,694	$ 120,828	34%	$ 5,759,117	$ 5,128,340	$ 4,726,040	22%
Huron Meadows	$ 29,449	$ 34,676	$ 16,410	79%	$ 1,384,626	$ 996,820	$ 947,342	46%
Hudson Mills	$ 39,892	$ 58,282	$ 31,628	26%	$ 1,581,189	$ 1,437,542	$ 1,199,463	32%
Lower Huron/Willow/Oakwoods	$ 31,652	$ 73,167	$ 36,227	-13%	$ 2,342,460	$ 1,888,767	$ 2,492,036	-6%
Lake Erie	$ 37,851	$ 51,195	$ 31,055	22%	$ 1,861,829	$ 1,654,932	$ 1,704,126	9%
Y-T-D TOTALS	**$ 609,822**	**$ 780,198**	**$ 454,668**	34%	**$ 22,684,377**	**$ 19,953,318**	**$ 18,990,182**	19%

District	Y-T-D Vehicle Entries by Management Unit				Y-T-D Total Revenue by Management Unit			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Eastern	1,226,222	1,324,813	1,083,481	13%	8,170,051	7,563,071	6,766,426	21%
Western	1,348,784	1,414,689	1,199,337	12%	10,310,038	8,846,548	8,027,595	28%
Southern	797,314	884,772	755,296	6%	4,204,289	3,543,699	4,196,162	0%

GOLF THIS MONTH	MONTHLY ROUNDS				MONTHLY REVENUE			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Stony Creek	783	1,840	663	18%	$ 14,516	$ 39,077	$ 13,960	4%
Indian Springs	877	1,748	651	35%	$ 16,771	$ 34,880	$ 13,253	27%
Kensington	1,213	1,836	806	50%	$ 25,146	$ 36,832	$ 16,505	52%
Huron Meadows	1,149	1,905	793	45%	$ 23,099	$ 34,526	$ 15,634	48%
Hudson Mills	689	1,665	590	17%	$ 12,506	$ 29,536	$ 10,505	19%
Willow	66	1,691	599	-89%	$ 984	$ 33,158	$ 11,899	-92%
Lake Erie	684	1,404	525	30%	$ 13,046	$ 27,775	$ 10,771	21%
Total Regulation	5,461	12,089	4,628	18%	$ 106,068	$ 235,784	$ 92,527	15%
LSC Par 3	3	0	0	-	$ 48	$ -	$ -	-
LSC Foot Golf	0	0	0	-	$ -	$ -	$ -	-
Total Golf	**5,464**	**12,089**	**4,628**	18%	**$ 106,116**	**$ 235,784**	**$ 92,527**	15%

GOLF Y-T-D	GOLF ROUNDS Y-T-D				GOLF REVENUE Y-T-D			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Stony Creek	38,213	35,692	31,479	21%	$ 1,304,330	$ 1,097,685	$ 975,118	34%
Indian Springs	35,819	30,411	26,436	35%	$ 1,084,951	$ 887,791	$ 764,099	42%
Kensington	41,866	36,622	33,982	23%	$ 1,332,336	$ 1,121,700	$ 1,031,823	29%
Huron Meadows	36,712	32,766	28,987	27%	$ 1,230,801	$ 932,439	$ 851,545	45%
Hudson Mills	30,133	29,159	23,482	28%	$ 792,964	$ 683,415	$ 550,606	44%
Willow	28,630	30,234	24,691	16%	$ 857,844	$ 849,861	$ 698,068	23%
Lake Erie	34,641	30,185	26,579	30%	$ 1,021,146	$ 809,505	$ 729,130	40%
Total Regulation	246,014	225,069	195,637	26%	$ 7,624,373	$ 6,382,395	$ 5,600,389	36%
LSC Par 3	6,176	6,965	6,394	-3%	$ 50,775	$ 56,532	$ 45,558	11%
LSC Foot Golf	618	754	634	-2%	$ 4,746	$ 5,856	$ 4,395	8%
Total Golf	**252,808**	**232,788**	**202,664**	25%	**$ 7,679,894**	**$ 6,444,783**	**$ 5,650,342**	36%

AQUATICS THIS MONTH	PATRONS THIS MONTH				MONTHLY REVENUE			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St. Clair	0	0	0	-	$ -	$ -	$ -	-
Stony Creek Rip Slide	0	0	0	-	$ -	$ -	$ -	-
KMP Splash	0	0	0	-	$ -	$ -	$ -	-
Lower Huron	0	0	0	-	$ -	$ -	$ -	-
Willow	0	0	0	-	$ -	$ -	$ 432	-
Lake Erie	0	0	0	-	$ -	$ -	$ 37	-
TOTALS	**0**	**0**	**0**	-	**$ -**	**$ -**	**$ 469**	-

AQUATICS Y-T-D	PATRONS Y-T-D				REVENUE Y-T-D			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St. Clair	49,526	12,552	34,561	43%	$ 234,936	$ 50,433	$ 168,564	39%
Stony Creek Rip Slide	28,687	0	16,267	76%	$ 159,624	$ -	$ 84,185	90%
KMP Splash	54,233	37,538	40,407	34%	$ 338,000	$ 153,757	$ 231,388	46%
Lower Huron	34,412	0	58,730	-41%	$ 333,740	$ -	$ 632,826	-47%
Willow	20,624	9,732	16,108	28%	$ 89,126	$ 43,545	$ 75,371	18%
Lake Erie	0	0	21,801	-	$ -	$ 75	$ 175,241	-
TOTALS	**187,482**	**59,822**	**187,875**	0%	**$ 1,155,426**	**$ 247,810**	**$ 1,367,576**	-16%

PARK	Seasonal Activities this Month				Monthly Revenue			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St. Clair								
Welsh Center	9	0	0	2600%	$ 20,900	$ -	$ 267	7738%
Shelters	6	0	1	350%	$ 1,218	$ 450	$ 492	148%
Boat Launches	36	185	69	-48%	$ -	$ -	$ -	-
Marina	0	0	0	-	$ -	$ -	$ -	-
Mini-Golf	0	0	0	-	$ -	$ -	$ -	-
Wolcott								
Activity Center	6	0	5	20%	$ 1,000	$ -	$ 500	100%
Stony Creek								
Disc Golf Daily	171	664	225	-24%	$ 642	$ 2,096	$ 710	-10%
Disc Golf Annual	1	1	0	200%	$ 60	$ 60	$ 20	200%
Total Disc Golf	172	665	225	-24%	$ 702	$ 2,156	$ 730	-4%
Shelters	6	1	4	50%	$ 1,350	$ 225	$ 900	50%
Boat Rental	0	0	0	-	$ -	$ -	$ -	-
Boat Launches	9	29	11	-18%	$ -	$ -	$ -	-
Indian Springs								
Shelters	0	0	0	-	$ -	$ -	$ 67	-
Event Room	4	0	4	0%	$ 11,800	$ -	$ 5,967	98%
Kensington								
Disc Golf Daily	707	2,022	923	-23%	$ 2,130	$ 6,066	$ 2,770	-23%
Disc Golf Annual	1	6	2	-57%	$ 40	$ 800	$ 285	-86%
Total Disc Golf	708	2,028	926	-24%	$ 2,170	$ 6,866	$ 3,055	-29%
Shelters	10	8	9	11%	$ 1,800	$ 1,688	$ 2,288	-21%
Boat Rental	0	0	0	-	$ -	$ -	$ -	-
Huron Meadows								
Shelters	0	0	1	-	$ -	$ -	$ 133	-
Hudson Mills								
Disc Golf Daily	226	374	209	8%	$ 678	$ 1,122	$ 627	8%
Disc Golf Annual	8	1	1	700%	$ 380	$ 60	$ 57	571%
Total Disc Golf	234	375	210	11%	$ 1,058	$ 1,182	$ 684	55%
Shelters	1	0	1	50%	$ 200	$ -	$ 133	50%
Canoe Rental	0	0	0	-	$ -	$ -	$ -	-
Lower Huron / Willow / Oakwoods								
Disc Golf Daily	56	137	66	-15%	$ 168	$ 411	$ 221	-24%
Disc Golf Annual	0	1	0	-	$ -	$ 60	$ 49	-
Total Disc Golf	56	138	66	-15%	$ 168	$ 471	$ 270	-38%
Shelters	1	3	4	-77%	$ 250	$ 650	$ 967	-74%
Lake Erie								
Shelters	1	0	1	50%	$ 200	$ -	$ 133	50%
Boat Launches	295	488	358	-18%	$ -	$ -	$ -	-
Marina	0	0	0	-	$ 1,692	$ -	$ 237	613%

PARK	Seasonal Activities Y-T-D				Seasonal Revenue Y-T-D			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St. Clair								
Welsh Center	49	20	42	18%	$ 95,100	$ 28,325	$ 37,533	153%
Shelters	438	304	292	50%	$ 94,147	$ 69,624	$ 72,478	30%
Boat Launches	7,027	10,092	6,000	17%	$ -	$ -	$ -	-
Marina	1,661	1,834	2,164	-23%	$ 21,459	$ 17,582	$ 19,343	11%
Mini-Golf	9,467	7,433	8,421	12%	$ 43,495	$ 32,762	$ 32,539	34%
Wolcott								
Activity Center	23	23	59	-61%	$ 12,925	$ 7,025	$ 17,418	-26%
Stony Creek								
Disc Golf Daily	15,792	16,431	12,549	26%	$ 53,154	$ 54,254	$ 41,269	29%
Disc Annual	123	44	83	48%	$ 7,180	$ 2,620	$ 4,690	53%
Total Disc Golf	15,915	16,475	12,633	26%	$ 60,334	$ 56,874	$ 45,959	31%
Shelters	562	377	383	47%	$ 126,194	$ 84,627	$ 86,217	46%
Boat Rental	19,786	31,638	21,271	-7%	$ 230,148	$ 304,890	$ 214,123	7%
Boat Launches	385	1,097	939	-59%	$ -	$ -	$ -	-
Indian Springs								
Shelters	87	50	54	62%	$ 11,850	$ 5,976	$ 7,867	51%
Event Room	42	12	34	25%	$ 108,400	$ 22,000	$ 55,900	94%
Kensington								
Disc Golf Daily	29,094	27,703	20,905	39%	$ 100,733	$ 89,741	$ 67,605	49%
Disc Annual	343	185	180	90%	$ 20,000	$ 11,360	$ 10,445	91%
Total Disc Golf	29,437	27,888	21,086	40%	$ 120,733	$ 101,101	$ 78,050	55%
Shelters	624	510	490	27%	$ 132,033	$ 104,476	$ 107,688	23%
Boat Rental	15,332	23,926	19,506	-21%	$ 266,579	$ 275,944	$ 240,814	11%
Huron Meadows								
Shelters	59	39	32	86%	$ 9,900	$ 6,250	$ 5,817	70%
Hudson Mills								
Disc Golf Daily	9,154	7,728	6,421	43%	$ 27,462	$ 23,184	$ 19,262	43%
Disc Annual	100	168	155	-35%	$ 5,780	$ 9,880	$ 8,805	-34%
Total Disc Golf	9,254	7,896	6,575	41%	$ 33,242	$ 33,064	$ 28,067	18%
Shelters	158	74	83	91%	$ 28,400	$ 11,650	$ 15,950	78%
Canoe Rental	12,609	11,437	8,816	43%	$ 67,580	$ 63,826	$ 47,764	41%
Lower Huron / Willow / Oakwoods								
Disc Golf Daily	1,894	1,963	1,430	32%	$ 5,688	$ 5,889	$ 4,316	32%
Disc Annual	9	7	10	-10%	$ 500	$ 400	$ 582	-14%
Total Disc Golf	1,903	1,970	1,440	32%	$ 6,188	$ 6,289	$ 4,898	26%
Shelters	483	224	279	73%	$ 86,150	$ 45,775	$ 60,008	44%
Lake Erie								
Shelters	85	50	65	31%	$ 18,100	$ 10,550	$ 14,083	29%
Boat Launches	13,431	17,182	15,763	-15%	$ -	$ -	$ -	-
Marina	0	0	830	-	$ 238,790	$ 207,719	$ 179,642	33%

PARK	Cross Country Ski Rental this Month				Cross Country Ski Rental Y-T-D			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Stony Creek	$ -	$ -	$ -	-	$ 17,305	$ 3,391	$ 4,374	-
Kensington	$ -	$ -	$ -	-	$ 15,812	$ 9,979	$ 9,836	61%
Huron Meadows	$ -	$ -	$ 239	-	$ 53,486	$ 22,571	$ 22,069	142%
Hudson Mills	$ -	$ -	$ 15	-	$ 90	$ 2,103	$ 3,374	-97%

PARK	Winter Sports this Month				Winter Sports Y-T-D			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St. Clair								
XC Skiers	0	0	0	-	30	0	5	463%
Ice Skaters	0	0	0	-	481	0	62	676%
Sledders	0	0	0	-	636	0	132	383%
Ice Fishermen	0	0	0	-	2,251	45	2,561	-12%
Stony Creek								
XC Skiers	0	0	10	-	3,198	599	691	363%
Ice Skaters	0	0	0	-	93	0	19	381%
Sledders	0	0	50	-	3,735	1,720	1,470	154%
Ice Fishermen	0	0	0	-	425	109	266	60%
Indian Springs								
XC Skiers	0	0	1	-	258	76	101	155%
Sledders	15	0	18	-18%	861	183	248	247%
Kensington								
XC Skiers	0	0	0	-	1,868	1,446	1,292	45%
Ice Skaters	0	0	0	-	8	0	8	0%
Sledders	20	0	0	-	7,714	2,385	2,445	216%
Ice Fishermen	0	0	0	-	247	21	78	215%
Huron Meadows								
XC Skiers	80	0	83	-4%	7,385	3,075	3,447	114%
Ice Fishermen	0	0	0	-	0	0	0	-
Hudson Mills								
XC Skiers	40	0	23	76%	1,210	549	881	37%
Willow								
XC Skiers	0	0	0	-	67	7	21	219%
Sledders	30	0	0	-	1,966	110	257	666%
Lake Erie								
XC Skiers	0	0	0	-	3	0	19	-84%
Sledders	0	0	0	-	94	0	28	232%
Ice Fishing	0	0	0	-	941	0	1,005	-6%

INTERPRETIVE FACILITIES

PARK	Monthly Patrons Served (total program participants and non-program visitors)				YTD Patrons Served (total program participants and non-program visitors)			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St Clair	5,836	5,287	5,598	4%	135,477	140,776	148,037	-8%
Wolcott Mill	1,658	1,722	1,477	12%	44,036	17,422	27,976	57%
Wolcott Farm	126	3,111	1,653	-92%	47,999	29,873	45,806	5%
Stony Creek	18,856	20,379	19,033	-1%	213,011	190,169	197,858	8%
Eastern Mobile Center	165	0	142	16%	4,271	1,072	4,666	-8%
Indian Springs	3,516	3,364	3,498	1%	52,084	52,609	58,706	-11%
Kens NC	21,564	39,669	25,868	-17%	335,135	392,726	331,894	1%
Kens Farm	9,564	14,572	10,736	-11%	227,157	176,376	214,580	6%
Western Mobile Center	474	426	540	-12%	4,390	3,336	6,083	-28%
Hudson Mills	2,561	2,500	2,597	-1%	34,438	32,994	35,584	-3%
Oakwoods	10,122	13,531	12,540	-19%	132,964	157,681	145,977	-9%
Lake Erie	13,214	15,395	14,183	-7%	173,016	180,599	168,229	3%
Southern Mobile Center	744	284	496	50%	13,913	2,365	9,388	48%
Totals	88,400	120,240	98,360	-10%	1,417,891	1,377,998	1,394,785	2%

PARK	Monthly Revenue				YTD Revenue			
	Current	Previous	Prev 3 Yr Avg	Change from Average	Current	Previous	Prev 3 Yr Avg	Change from Average
Lake St Clair	$ 1,343	$ 276	$ 983	37%	$ 8,819	$ 6,576	$ 17,923	-51%
Wolcott Mill	$ -	$ -	$ 433	-	$ 4,467	$ 845	$ 8,608	-48%
Wolcott Farm	$ 1,410	$ -	$ 1,243	13%	$ 16,368	$ 4,667	$ 45,172	-64%
Wagon Rides	$ -	$ -	$ 15	-	$ -	$ -	$ 3,830	-
Livestock/Produce	$ 56,486	$ 1,564	$ 4,522	1149%	$ 95,976	$ 33,078	$ 43,327	122%
FARM TOTAL	$ 57,896	$ 1,564	$ 5,780	902%	$ 112,344	$ 37,745	$ 92,330	22%
Stony Creek	$ 1,409	$ 109	$ 701	101%	$ 9,734	$ 3,998	$ 16,559	-41%
Eastern Mobile Center	$ 700	$ -	$ 597	17%	$ 2,725	$ 3,013	$ 10,418	-74%
Indian Springs	$ 830	$ 401	$ 1,642	-49%	$ 6,554	$ 6,027	$ 21,067	-69%
Kens NC	$ 1,789	$ 528	$ 2,335	-23%	$ 13,539	$ 5,636	$ 23,993	-44%
Kens Farm	$ 7,451	$ 452	$ 5,137	45%	$ 48,078	$ 26,458	$ 57,286	-16%
Wagon Rides	$ 979	$ 250	$ 518	89%	$ 14,282	$ 5,901	$ 18,883	-24%
Livestock/Produce	$ -	$ 1	$ 325	-	$ 7,444	$ 5,259	$ 5,197	43%
FARM TOTAL	$ 8,430	$ 704	$ 5,980	41%	$ 69,804	$ 37,618	$ 81,366	-14%
Western Mobile Center	$ 2,475	$ -	$ 1,650	50%	$ 5,546	$ 4,050	$ 15,220	-64%
Hudson Mills	$ 1,273	$ 411	$ 854	49%	$ 9,441	$ 2,818	$ 10,403	-9%
Oakwoods	$ 1,046	$ 550	$ 1,533	-32%	$ 7,882	$ 3,087	$ 15,048	-48%
Lake Erie	$ 806	$ 643	$ 1,062	-24%	$ 5,654	$ 2,563	$ 10,647	-47%
Southern Mobile Center	$ 325	$ -	$ 423	-23%	$ 575	$ 6,045	$ 12,584	-95%
Totals	$ 78,322	$ 5,185	$ 23,974	227%	$ 257,083	$ 120,021	$ 336,165	-24%

HURON-CLINTON METROPARKS MONTHLY STATISTICS **November, 2021**

BREAKDOWN OF ATTENDANCE	ON-SITE Programs and Attendance				OFF-SITE Programs and Attendance			
	CURRENT YEAR		PREVIOUS YEAR		CURRENT YEAR		PREVIOUS YEAR	
	Programs	Attendance	Programs	Attendance	Programs	Attendance	Programs	Attendance
Lake St Clair	16	342	16	247	-	-	-	-
Wolcott Mill	-	-	-	-	-	-	-	-
Wolcott Farm	5	126	-	-	-	-	-	-
Stony Creek	39	856	25	79	-	-	-	-
Eastern Mobile Center					5	165	-	-
Indian Springs	16	420	5	43	-	-	-	-
Kens NC	13	195	5	54	-	-	-	-
Kens Farm	43	417	4	37	-	-	-	-
Western Mobile Center					21	474	23	426
Hudson Mills	4	61	-	-	-	-	-	-
Oakwoods	21	409	12	164	-	-	-	-
Lake Erie	9	94	9	165	-	-	-	-
Southern Mobile Center					27	744	11	284
Totals	166	2,920	76	789	53	1,383	34	710

BREAKDOWN OF ATTENDANCE	OTHER VISITORS (Non-programs)	
	Current	Previous
Lake St Clair	5,494	5,040
Wolcott Mill	1,658	1,722
Wolcott Farm	1,797	3,111
Stony Creek	18,000	20,300
Indian Springs	3,096	3,321
Kens NC	21,369	39,615
Kens Farm	9,147	14,535
Hudson Mills	2,500	2,500
Oakwoods	9,713	13,367
Lake Erie	13,120	15,230
Totals	85,894	118,741

"ON-SITE" - Statistics includes both programs offered to the public and programs offered to school and scout groups.

"OFF-SITE" - Statistics includes outreach programs at schools, special events such as local fairs, or outdoor related trade shows.

"OTHER VISITORS" - Represents patrons to interpretive centers who visit to view exhibits, walk trails, and generally just enjoy the outdoors.