

**Agenda**  
**Huron-Clinton Metropolitan Authority**  
**Board of Commissioners**  
**August 12, 2021 – 1:00 pm**

Lake St. Clair Metropark – Thomas Welsh Activity Center and via Zoom

<https://us02web.zoom.us/j/9800687134?pwd=ak1WMTIPNUIUcEUycHpTWW95MTErUT09>

**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. Public Participation
4. Approval – July 13, 2021 regular meeting and July 20, 2021 special meeting minutes
5. Approval – August 12, 2021 Full Agenda

**Consent Agenda**

6. Approval – August 12, 2021 Consent Agenda
  - a. Approval – July 2021 Financial Statements
  - b. Approval – July 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. Bids – Turtle Cove Slide Structure Painting, Lower Huron Metropark **pg. 13**
  - f. Report – Purchases over \$10,000 **pg. 15**
  - g. Purchases
    1. Total Spend and Vendor Location **pg. 16**
    2. Hayride Wagons, Wolcott Mill Metropark **pg. 18**

**Regular Agenda**

7. Reports
  - A. **Financial Department**
    1. Report – Monthly Financial Review **pg. 19**
    2. Appointment – At Large Member, Pension Committee/Retiree Health Care Trust **pg. 33**
    3. Approval – 2021 Pension Plan Additional Contribution **pg. 34**
  - B. **Administrative Office**
    1. Approval – Mackinac Policy Conference Sponsorship **pg. 35**
  - C. **Natural Resources Department**
    1. Bids – Invasive Species Control, Various Locations **pg. 38**
  - D. **Departmental Updates**
    1. Report – Natural Resources Update **pg. 40**
    2. Report – Marketing Update **pg. 48**
    3. Report – Interpretive Services Update **pg. 57**
    4. Report – DEI Update **pg. 66**
    5. Report – Planning and Development Update **pg. 75**
  - E. **Planning Department**
    1. Report – Visitation/Permit Scanning Update **pg. 92**
    2. Approval/Resolution – Accessible Nature Trail LWCF Agreement, Oakwoods **pg. 102**
    3. Report – Green Infrastructure at Lake Erie and Wyandot Six Points Grant Proposal **pg. 119**
    4. Report – Transit Connectivity Project, Lake St. Clair **pg. 120**
    5. Approval – 26 Mile Road Connector Cost Share Agreement **pg. 121**

## Regular Agenda

### 7. Reports

#### F. *Engineering Department*

1. Approval – As Needed Engineering Survey Services **pg. 126**
2. Approval – Dam Study **pg. 128**
3. Bids – Pool Repairs, Lake Erie Metropark **pg. 219**

### 8. Leadership Update

- a. Confirmation of Chief Finance Officer Candidate **pg. 220**

### 9. Other Business

### 10. Public Participation

### 11. Commissioner Comments

### 12. Motion to Adjourn

Pension Committee and Retiree Health Care Trust meeting  
**Thursday, Aug. 12, 2020 – 10:30 a.m.**  
[Lake St. Clair Metropark – Thomas Welsh Activity Center](#)

The next regular Metroparks Board meeting will take place  
**Thursday, September 9, 2021 – 1:00 p.m.**  
[Lake Erie Metropark – Pool Area Food Bar](#)



To: Board of Commissioners  
From: Rebecca Franchock, Chief of Finance  
Subject: Approval – July Appropriation Adjustments  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the July 2021 Appropriation Adjustments as recommended by Chief of Finance Rebecca Franchock 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 July, \$150,431 was transferred between general fund operation accounts and \$27,728 was transferred within capital project accounts. Tax adjustments resulted in an additional decrease in fund balance of \$9,061.

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

**Attachment: Appropriation Adjustments**

**Huron-Clinton Metropolitan Authority**  
**July 2021 Appropriation Transfer Summary**

<b>Expense Accounts</b>	<b>Location</b>	<b>Expense Increase/ Revenue Decrease</b>	<b>Expense Decrease/ Revenue Increase</b>	<b>Difference</b>
<b>Capital</b>	Administrative	-	-	-
	Stony Creek	15,800	-	-
	Lake Erie	-	15,800	-
	<b>Total</b>	<b>15,800</b>	<b>15,800</b>	<b>-</b>
<b>Major Maintenance</b>	Administrative	185	25,107	(24,922)
	Lake St. Clair	31,154	30,748	406
	Kensington	4,863	9,325	(4,462)
	Lower Huron/Willow/Oakwoods	25,633	21,450	4,183
	Hudson Mills	2,054	-	2,054
	Stony Creek	27,250	20,000	7,250
	Lake Erie	2,531	-	2,531
	Indian Springs	2,726	-	2,726
	Huron Meadows	3,033	-	3,033
<b>Total</b>	<b>99,429</b>	<b>106,630</b>	<b>(7,201)</b>	
<b>Operations</b>	Lake St. Clair	14,701	14,701	-
	Kensington	5,000	5,000	-
	Stony Creek	800	800	-
	Lake Erie	7,200	-	7,200
	Indian Springs	1,000	1,000	-
	Administrative	6,501	6,500	1
	<b>Total</b>	<b>35,202</b>	<b>28,001</b>	<b>7,201</b>
<b>Total General Fund Transfers</b>		<b>150,431</b>	<b>150,430</b>	<b>-</b>
<b>Capital Project Fund</b>	Administrative	-	27,728	(27,728)
	Lake St. Clair	1,305	-	1,305
	Kensington	3,492	-	3,492
	Lower Huron/Willow/Oakwoods	14,097	-	14,097
	Hudson Mills	2,739	-	2,739
	Stony Creek	5,899	-	5,899
	Lake Erie	196	-	196
	<b>Total</b>	<b>27,728</b>	<b>27,728</b>	<b>0</b>
<b>Tax Adjustment</b>	Current	7,265	-	(7,265)
	Prior	1,796	-	(1,796)
	<b>Total</b>	<b>9,061</b>	<b>-</b>	<b>(9,061)</b>



To: Board of Commissioners  
From: Rebecca Franchock, Chief of Finance  
Subject: Report – Monthly Capital Project Fund  
Date: August 6, 2021

**Action Requested: Motion to Receive and File**

That the Board of Commissioners receive and file the Capital Project Fund report as submitted by Rebecca Franchock 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 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 of Commissioners as well as the general public to stay up-to-date on the capital project work underway throughout the Metroparks.

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

- Stony Creek – Baypoint Beach Grinder Pump Installation
- Lake Erie – Shoreline Restoration

**Attachment: July 2021 Capital Project Fund Update**

## July 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.	253,000	160,000	In Design	2022
Lake St Clair	Accessible Kayak Launch & Power Installation		50,000			
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.	801,794		Scope Assessment Complete - Project specifications in development	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.	470,573	292,167	Under Contract	2023
Lake St Clair	Michigan Coastal Management Program-Accessible 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	1,096,578		Substantially Completed	2021
Kensington	Maple Beach - Universal Accessible Playground	Construction of a new playground at Maple Beach	553,872		Substantially 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.	316,345	154,000	In Design	2022
Kensington	Farm Center Sidewalk Replacement	Replacement of the looped walkway around the animal pens for the public	164,541		In Design	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.	97,859	5,000	Design Complete - Permitting Underway - Township Review	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.	297,125	144,400	Midway toward completion	2021

## July Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
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.	1,306,120		Contract awarded	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	93,722		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)	841,918	488,742	In Design	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
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		Cancel - funding available	
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	476,219	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		In Construction	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	385,500	192,700	Awaiting Grant Agreement	2022
Stony Creek	Baypoint Beach Site Improvements	Construction of restroom and site work for support of Baypoint Beach	1,361,585		Substantially Completed	2021
Stony Creek	Shelden Trails Redevelopment	Redevelopment of the multi-use natural surface Shelden Trails system	863,549	50,000	In Construction	2021

## July Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
Stony Creek	Boat Launch Building Redevelopment	Construction of a new restroom and shade structure at the boat launch facility	1,632,336	50,000	Out for Bid	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	176,369		In Design	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			
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	20,906		Design Complete - State is reviewing	2021
Stony Creek	Baypoint Beach Grinder Pump Installation	Installation of five septic tank filter systems to resolve the issue.	132,846		In Construction	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		Funded	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.	2,435,995		In Construction - Foundation work	2021
Willow	Main Park Road Culvert Replacements near Acorn Knoll	Replacement of failing culvert on main loop road.	40,000		Contract awarded	2021
Willow	Backup Internet Fiber Installation	Comcast to install new fiber network lines. Initial proposal - zero construction cost - now deemed unseverable - IT reviewing options with Comcast	-		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	507,183	250,000	Awaiting Grant Agreement	2023
Oakwoods	Nature Center Exhibit Design & lighting/electrical	Design, production and installation of interpretive exhibits. Includes updated flooring, lighting and electrical.	728,122		Nearing completion	2021
Oakwoods	Backup Internet Fiber Installation	Comcast to install new fiber network lines. Initial proposal - zero construction cost - now deemed unseverable - IT reviewing options with Comcast	-		In Review	2021



## July Capital Project Fund Report - Project Summary

Location	Original Project Title	Project Description	Amended Budget	Available Grant Funding	Project Status	Estimated Completion Year
Oakwoods	Accessible Nature Trail Development	Land and Water Conservation Fund grant funded project to develop an accessible nature trail and make associated site improvements	248,000	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.	1,619,263	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		Funded	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 deteriorated animal pen fencing	42,485		Complete	2021
Wolcott	Farm to Mill Trail Connector	Development of a connector trail from the Farm to the Mill. Multi year project design and construction	1,000,958		Funded	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		Cancel - funding available	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	-		In Review	2021
			<u>21,627,834</u>	<u>4,476,587</u>		

**Capital Project Status Report  
as of July 31, 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	\$ 421,477	\$ -	\$ 23,695	\$ -
Lake St Clair	Black Creek Marsh Wetland Filtration Enhancement	253,000	253,000	-	-	-	253,000	160,000
Lake St Clair	Accessible Kayak Launch & Power Installation	50,000	50,000	-	-	-	50,000	
Lake St Clair	Backup Internet Fiber Installation	40,000	40,000	-	-	30,815	9,185	
Lake St Clair	Electrical Grid Replacement - Design in 2020	802,216	801,794	15,982	15,982	95,634	690,178	
Lake St Clair	Beach Restoration	400,000	470,573	251,044	261,702	195,695	13,177	292,167
Lake St Clair	Michiagn Coastal Management Program-Accessible Launch	392,850	392,850	-	-	-	392,850	196,425
Kensington	Maple Beach Site Improvements	820,396	1,096,578	49,949	1,076,737	-	19,841	
Kensington	Maple Beach - Universal Accessible Playground	525,000	553,872	88,501	493,184	-	60,688	
Kensington	West Boat Launch - Accessible Kayak Launch	308,000	316,345	4,039	8,345	-	308,000	154,000
Kensington	Farm Center Sidewalk Replacement	150,000	164,541	14,541	14,541	142,803	7,197	
Dexter-Delhi	Relocating Concessionaire Canoe Livery Building	75,000	97,859	27,408	45,015	-	52,844	5,000
Lower Huron	North Fishing Site Redevelopment	288,800	297,125	210,865	238,243	48,196	10,687	144,400
Lower Huron	Backup Internet Fiber Installation	205,000	185,362	-	150,000	33,702	1,660	
Lower Huron	Woods Creek Playground Development	1,300,000	1,306,120	6,119	6,119	1,394,030	(94,029)	
Lower Huron	Toll Booth Replacement and Paving	30,000	30,000	-	-	21,840	8,160	
Lower Huron	Turtle Cove Crosswalk Path	90,000	93,722	3,722	3,722	-	90,000	
Lower Huron	Iron Bell Trail Project	716,700	841,918	22,610	22,610	49,577	769,731	488,742
Lower Huron	Walnut Grove Campground Improvements	784,600	784,600	-	-	-	784,600	450,000
Lower Huron	Off Leash Dog Area Development	330,800	330,800	-	-	-	330,800	165,400
Hudson Mills	Backup Internet Fiber Installation	40,000	7,994	-	-	-	7,994	
Hudson Mills	Rapids View area Development	453,800	476,219	18,119	22,419	-	453,800	226,900
Hudson Mills	Toll Booth Removal and Replacement	80,000	17,992	-	12,346	-	5,646	
Hudson Mills	Hike Bike Trail Reconstruction	-	-	205	205	-	(205)	
Hudson Mills	Picnic Area Development at Canoe Launch	385,500	385,500	-	-	-	385,500	192,700
Stony Creek	Baypoint Beach Site Improvements	847,736	1,361,585	76,460	1,158,897	110,599	92,089	
Stony Creek	Shelden Trails Redevelopment	182,689	863,549	153,043	478,496	29,500	355,553	50,000
Stony Creek	Boat Launch Building Redevelopment	1,750,000	1,632,336	52,531	146,153	1,668,221	(182,038)	50,000
Stony Creek	Development of Off Leash Dog Area	138,500	176,369	11,836	12,861	163,508	0	
Stony Creek	Backup Internet Fiber Installation	80,000	80,000	-	-	70,407	9,593	
Stony Creek	Shore Fishing Vault Latrine Replacement	-	411	411	411	-	-	
Stony Creek	26 Mile Rd. Connector - Bike Path	-	20,906	10,341	20,906	-	-	
Stony Creek	Baypoint Beach Grinder Pump Installation	150,000	132,846	103,646	103,646	-	29,200	
Stony Creek	Golf Course Pumphouse & Irrigation System Replacement	1,000,000	1,000,000	-	-	-	1,000,000	
Willow	Park Office Replacement	2,121,300	2,435,995	776,312	957,778	1,482,198	(3,981)	
Willow	Main Park Road Culvert Replacements near Acorn Knoll	40,000	40,000	-	-	-	40,000	
Willow	Backup Internet Fiber Installation	40,000	-	-	-	-	-	
Willow	Big Bend Shoreline Protection	501,593	507,183	5,590	5,590	-	501,593	250,000
Oakwoods	Nature Center Exhibit Design & lighting/electrical	720,000	728,122	107,729	725,393	5,806	(3,077)	
Oakwoods	Backup Internet Fiber Installation	40,000	-	-	-	-	-	
Oakwoods	Accessible Nature Trail Development	248,000	248,000	-	-	-	248,000	124,000
Lake Erie	Shoreline and Fish Habitat Restoration	1,600,000	1,619,263	23,418	139,325	58,358	1,421,580	1,404,353
Lake Erie	Boat Launch Fish Cleaning Station	45,000	45,000	-	-	-	45,000	
Lake Erie	Accessible Kayak Launch with Area Development	245,000	245,133	-	133	-	245,000	122,500
Wolcott	Phase Two - Animal Pen Fencing Replacement	30,000	42,485	6,981	12,485	-	30,000	
Wolcott	Farm to Mill Trail Connector	1,000,000	1,000,958	-	958	-	1,000,000	
Indian Springs	Backup Internet Fiber Installation	40,000	7,758	-	-	-	7,758	
Huron Meadows	Backup Internet Fiber Installation	80,000	-	-	-	-	-	
		<u>19,772,470</u>	<u>\$ 21,627,834</u>	<u>\$ 2,068,805</u>	<u>\$ 6,555,676</u>	<u>\$ 5,600,887</u>	<u>\$ 9,471,270</u>	<u>4,476,587</u>



To: Board of Commissioners  
From: Rebecca Franchock, Chief of Finance  
Subject: Report – Monthly Major Maintenance Project  
Date: August 6, 2021

**Action Requested: Motion to Receive and File**

That the Board of Commissioners receive and file the Major Maintenance report as submitted by Chief of Finance Rebecca Franchock and staff.

**Background:** Metroparks staff tracks 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 June, there has been a lot of work contracted or started and year-to-date expenses are 42.9 percent of the total budget.

**Attachment: July 2021 Major Maintenance Status Report**

**Major Maintenance Status Report**  
As of 7/31/2021

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	117,184	13,420	13,420	103,764	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	Funded as a carry-over 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.	150,000	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	20,128	20,128	5,675	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	Under contract - work to be completed prior during May
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)	Scheduled for June installation
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	211,191	195,130	195,130	0	16,061	Completed
Lake St Clair	Pool Slide Pump Conduit & Conductor Replacement	Replace pump on pool slide	-	4,969	4,969	4,969	0	0	Under Contract
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	0	0	0	0	0	Funded
Lake St Clair	Stormwater Drainage Repairs on Culverts	Replacement of deteriorated culverts throughout the park	45,000	0	0	0	0	0	Funded
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	0	0	0	0	0	Targeted to start after the season
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	0	0	0	0	0	Completed
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	980	980	980	0	0	Work targeted for the fall season when the waterlevels are lowered
Kensington	Maple Beach Irrigation Replacement	The project will install new irrigation lines and heads at Maple beach around the the restroom building.	100,000	39,544	44,074	44,074	0	(4,530)	Substantially Complete
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	17,385	17,705	17,705	0	(320)	Completed
Kensington	Hike Bike Trail Reconstruction - Nature Center to West Boat Launch	Replaces the existing failing asphalt surface on the bike trail	-	227,716	153,434	153,434	74,742	(460)	Completed
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 7/31/2021

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	Engineering is evaluating - anticipate fall construction
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 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	Funded
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	0	0	0	0	0	August Board for Approval
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	Funded
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	In construction
Lower Huron	Washago Pond Dam Repairs	Diver assessment of dam repair 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	In Evaluation
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	261,599	222,507	222,507	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	Funded
Stony Creek	Eastwood Beach Entrance Road Spot Repairs	Spot repairs to entrance drive	20,000	0	0	0	0	0	Getting Quotes
Stony Creek	Repaint Roadway & Hike Bike Paths	Address worst portions of trail and roadway	20,000	0	0	0	0	0	Funded
Stony Creek	Stormwater Drainage Repairs on Culverts	Replace existing deteriorated culverts	50,000	0	0	0	0	0	Funded
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	154,307	120,362	120,362	18,485	15,460	Completed
Willow	Carpenter Shop Siding Replacement	Carpenter Shop Siding Replacement	-	21,450	0	0	21,450	0	In construction
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	Funded - project may not be needed
Willow	Willow Replace Vinyl Siding at Carpenter Shop	Exterior siding replacement for the Carpenter shop building located at the Willow Maintenance Service yard.	20,000	0	0	0	0	0	Funded
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	In construction
Lake Erie	Replacement of Failing Culvert	Culvert repair/replacement located under the main park road between maintenance service drive and Cove Point area.	43,440	102,268	87,468	102,268	0	0	Funded

## Major Maintenance Status Report

As of 7/31/2021

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 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	0	0	28,000	2,000	In Design
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	2,531	2,531	2,531	0	0	August Board for Approval
Lake Erie	Boat Launch Road Culvert Replacements	Main culverts under the road to boat launch replaced. Road surfacing to be completed at a later date.	60,000	0	0	0	0	0	Completed
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	0	0	0	0	0	Funded - anticipate fall construction
Lake Erie	Golf Maintenance Building Repairs	Repair/replace a wall, window and exterior siding of the Lake Erie golf course maintenance building.	15,000	0	0	0	0	0	Funded
Wolcott	Replacement of Existing Pasture Fence	Replacement of animal pen fencing	23,792	82,832	23,792	82,832	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	In review
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 filling in the raceway beneath the Mill	80,000	0	0	0	0	0	Currently being evaluated
Indian Springs	Dome Polishing & Seal Replacement	Polishing and resealing of the interior and exterior surface of the underwater dome	89,235	256,351	121,016	247,657	6,703	1,991	Project substantially 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	11,243	11,243	11,243	0	0	In design
			<u>\$ 3,594,074</u>	<u>\$ 2,286,075</u>	<u>\$ 1,544,459</u>	<u>\$ 1,827,137</u>	<u>\$ 408,553</u>	<u>\$ 50,385</u>	



To: Board of Commissioners  
From: Mike Henkel Chief of Engineering Services  
Project No: 706-21-194  
Project Title: Bids – Slide Tower and Support Structure Painting  
Project Type: Major Maintenance  
Location: Lower Huron Metropark  
Date: August 6, 2021

Bids Opened: Tuesday August 3, 2021 at 2:00 p.m.

**Action Requested: Motion to Approve**

That the Board of Commissioners award Contract No. 706-21-194 to the low responsive, responsible bidder, Niles Construction Services in the amount of \$40,413 as recommended by Chief of Engineering Services Mike Henkel and staff.

**Fiscal Impact:** The project was budgeted at \$70,000 and is under budget in the amount of \$29,587.

**Scope of Work:** The work includes cleaning and coating metal surfaces of the existing slide tower structure, columns, stairs and stair structure, railings, bracing, support arms and slide support structure including support arms, bracing and other support members, and containing, storing and properly disposing of spent material and all incidental construction.

**Background:** The slide tower structure is exposed to large amounts of chlorinated water throughout the season. Minerals and chlorine build up on the steel structure and deteriorate the protective coating which then leads to rust on the steel structure. Periodic cleaning and painting are necessary to protect the structure. Turtle cove was competed in 2008 and this is the first time painting the slide support structure structure.

<u>Contractor</u>	<u>City</u>	<u>Amount</u>
1. Niles Construction Services DEI <input type="checkbox"/> Local <input type="checkbox"/> Wage <input type="checkbox"/>	Flint	\$40,413.00
2. Industrial Painting Contractors Inc. DEI <input type="checkbox"/> Local <input checked="" type="checkbox"/> Wage <input checked="" type="checkbox"/>	Taylor	\$66,200.00
Budget for Contract Services		
- Slide Tower and Support Structure Painting		\$70,000.00
Work Order Amount		
- Contract Amount		
- Niles Construction Services		\$40,413.00
- Contract Administration		<u>\$ 4,000.00</u>
o Total Proposed Work Order Amount (Rounded)		\$44,413.00

*This project was reported and publicly advertised in the following construction reporting outlets: Michigan Inter-governmental trade network, MITN; Construction Association of Michigan, Construction Connect, Washtenaw Contractors Association, Builders Exchange of Lansing and Central Michigan.*







To: Board of Commissioners  
From: Amy McMillan, Director  
Project Title: Update – Purchases over \$10,000  
Date: August 6, 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:

<u>Vendor</u>	<u>Description</u>	<u>Price</u>
1. Little Buildings, Inc.	One (1) new Toll Booth for each Lower Huron Metropark and Willow Metropark	\$21,840.00



To: Board of Commissioners  
From: Amy McMillan, Director  
Project Title: Purchases – Total Spent and Vendor Locations  
Date: August 6, 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 August 2021**

<b>Vendor</b>	<b>Vendor Location</b>	<b>Description</b>	<b>Park Location</b>	<b>Total Request</b>	<b>5-County Area</b>	<b>Greater Michigan</b>	<b>Outside Michigan</b>	<b>Effect of DEI, Living Wage &amp; Local Preference Policy</b>
PLM Lake and Land Management	Morrice, MI	Phragmites Control per ITB 2021-037 and ITB 2021-039	Indian Springs Kensington Lake St. Clair	\$23,000.00		\$23,000.00		None of the quotes were from Local vendors
Davey Resource Group	Kent, OH	Phragmites Control per ITB 2021-038 and ITB 2021-040	Lake Erie Lower Huron Willow	\$38,000.00			\$38,000.00	None of the quotes were from Local vendors
Weaver Wagons	Dalton, OH	One Horse-Drawn Hayride Wagon per ITB 2021-033	Wolcott	\$15,017.00			\$15,017.00	None of the quotes were from Local vendors
Gap Hill Farms	Gap, PA	Two Tractor-Drawn Hayride Wagons per ITB 2021-033	Wolcott	\$28,290.00			\$28,290.00	None of the quotes were from Local vendors
<b>Totals</b>				<b>\$104,307.00</b>	<b>\$0.00</b>	<b>\$23,000.00</b>	<b>\$81,307.00</b>	
<b>Percent of Total Award Request</b>					0.00%	22.05%	77.95%	



To: Board of Commissioners  
From: Heidi Dziak, Senior Buyer  
Project No: ITB 2021-033  
Project Title: Purchase – Hayride Wagons  
Location: Wolcott Metropark  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the purchase of three (3) new accessible hayride wagons for a total amount of \$43,307 to the vendors as indicated below for ITB 2021-033 as recommended by Senior Buyer Heidi Dziak and staff.

- Award of a purchase order in the amount of \$15,017 to Weaver Wagons of Dalton, Ohio for one (1) horse-drawn hayride wagon with a ramp.
- Award of a purchase order in the amount of \$28,290 to Gap Hill Farms of Gap, Pennsylvania for two (2) tractor-drawn hayride wagons with lifts.

**Fiscal Impact:** Funds for one horse-drawn and one tractor-drawn wagon will come from the Board approved 2021 Capital Equipment budget, which allowed \$27,000 for the purchase of the wagons. The purchases will total \$29,162 and is \$2,162 over budget. The additional \$2,162 will come from savings realized from capital equipment purchases. Funds totaling \$14,145 for one tractor-drawn wagon are available through the Foundation and donations.

**Scope of Work:** Furnish and deliver accessible hayride wagons.

**Background:** The proposed purchase was competitively bid and the ITB was posted on the Michigan Intergovernmental Trade Network (MITN) site, which provided notice to 29 vendors, of which eight vendors downloaded the ITB. However, no bids were received. Quotes were obtained from three vendors after the ITB closed.

<u>Item by Vendor</u>	<u>Location</u>	<u>Price</u>
<b>Horse-Drawn Hayride Wagon with Ramp</b>		
• Weaver Wagons	Dalton, OH	\$15,017.00*
<b>Tractor-Drawn Hayride Wagon with Lift</b>		
• Gap Hill Farms	Gap, PA	\$14,145.00*
• Weaver Wagons	Dalton, OH	\$14,572.00
• Stoltzfus	Honey Brook, PA	\$14,832.73

(\* Indicates recommended award.



To: Board of Commissioners  
From: Rebecca Franchock, Chief of Finance  
Subject: Report – July Financial Review  
Date: August 6, 2021

**Action Requested: Motion to Receive and File**

That the Board of Commissioners receive and file the July Financial Review as submitted by Chief of Finance Rebecca Franchock and staff.

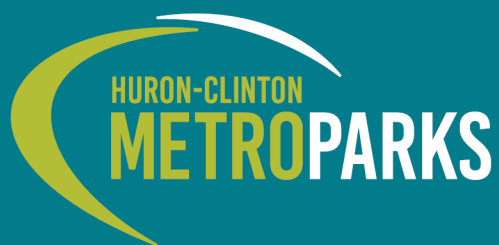
**Attachment: Financial Review**



# HURON-CLINTON METROPARKS JULY FINANCIAL RECAP

July 2021

Administrative Office  
13000 High Ridge Drive  
Brighton, MI 48814



[METROPARKS.COM](https://www.metroparks.com)

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# EXECUTIVE SUMMARY

## JULY 2021 FINANCIAL RESULTS

For the month of July 2021, vehicle entries declined again when compared to 2020. However, June park vehicle counts were higher than July of 2019 and the three-year average. And also, unlike June, park total park operating revenue for the month exceeded 2020. When we compare July 2021 to the pre-pandemic July 2019 the total revenue is remarkably similar. Within \$34,000 or less than one percent variance. Year-to-date, park operating revenue regained some of the ground lost in June and is well ahead of prior years. Up \$3.0 million when compared to 2020 and \$3.1 million when compared to 2019. No significant changes to administrative revenue took place during July.

Looking into why these changes have occurred, essentially, we are seeing a significant return of aquatic revenue, although still roughly half the pre-pandemic amounts. We are also seeing year to date increase in tolling in 2021, roughly up 3 percent from 2020. The increase from 2019 is more significant due to both increased quantities



but also related to a fee increase that took place in 2020. The other most significant factor boosting revenue has been the growth of golf. Golf was strong in 2020 once courses were opened, but for 2021 the demand by the public has continued and was not hindered by mandated course closings and other limitations.

As discussed, and reviewed in earlier updates, we continue to watch the trends with both annual and daily permits. At this point in the year, annual permit sales from January through the end of July are up by 4,200 from 2019 and 6,200 from 2020. Daily permit sales for the same time frame are down by 5,300 from 2020 but up from 2019 by nearly 31,800.

Comparing the daily trade-up program, 2021 numbers are lower than 2020 for both the month and year to date.



Overall, year-to-date general fund expenditures are up \$3.0 million or 10.3 percent higher than 2020. The largest growth is park operations where expense totals have increased by \$1.7 million or near 10 percent. When the comparison is made against 2019 numbers, overall general fund expenditures have increased by \$2.3 million (7.6 percent). These increases are not surprising as 2020 expenditures were significantly suppressed during the pandemic.



In summary, the Metroparks continue to find ourselves well positioned financially. Revenues are strong, and expenditures are within planned budgets. As we look around at this amazing park district it is a wonderful feeling to see the public enjoying the fruits of so many great people's efforts. In the continuous push to do more and be more it is not a bad time to take a quick break to reflect on this.

# 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 do expect to beat the budget of \$100,000.

The annual auction of surplus equipment and materials is planned for this fall and staff is expected to again use the on-line platform that was first used in 2020. We fully expect to hit budget target for both the sale of capital assets and the miscellaneous revenue associated with this event.

Finally, while we expect 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, we do not yet know the status of our renewal with BC/BS or if we will receive any funds related to a potential rate surplus.



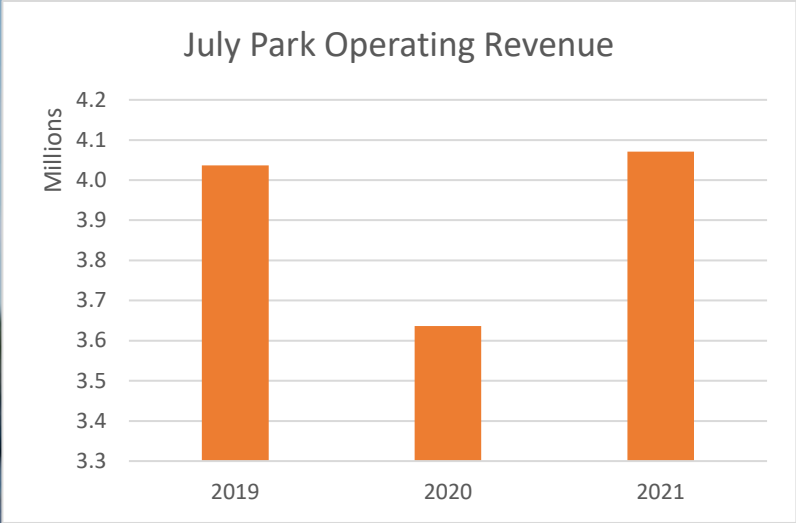


# PARK OPERATING REVENUE

## BY ACTIVITY

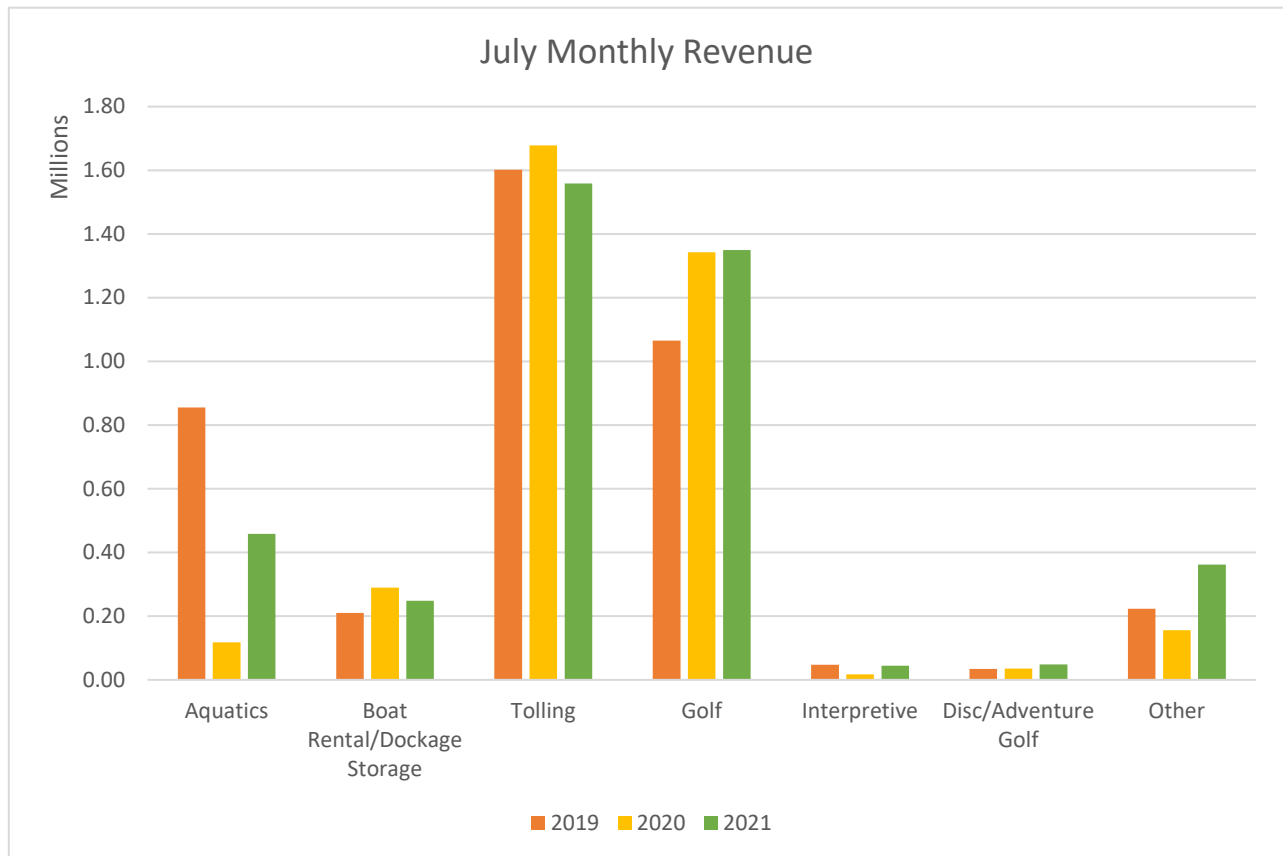
To make more sense of the data this month we will continue sharing comparisons for data from 2019, 2020 and 2021. This provides a pre-pandemic benchmark to compare to as well as comparing within different points of the pandemic between last year and this.

Parks generated over \$4.0 million revenue during July 2021 compared to \$3.6 million in 2020 and \$4.0 million in 2019.



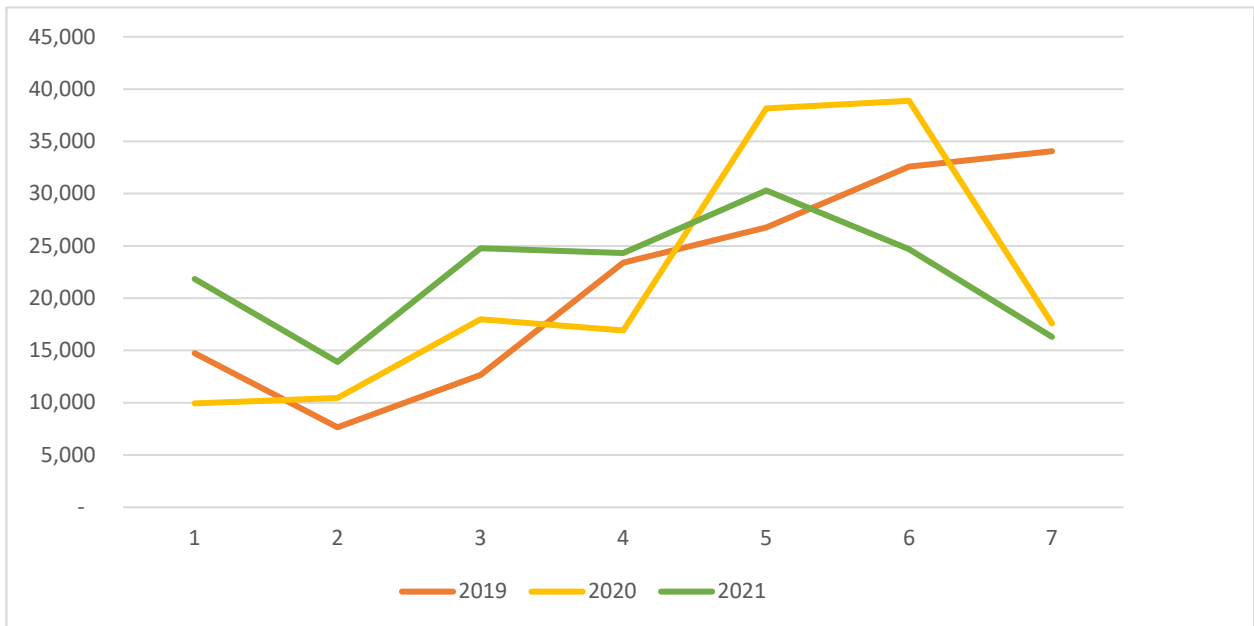
July 2021 revenue in total is just slightly ahead of July 2019 and a little under 12 percent below 2020. Digging into some of the major activities generating this revenue the most significant changes are reflected in the chart below:

Aquatic facilities were extremely limited during 2020 due to the pandemic. This year we are not experiencing mandated closures and limitations, but our facilities are being limited by difficulties in filling lifeguard positions as well as some facility maintenance issues. Boat rental and dockage use jumped 38% in July of 2020. 2021 revenue dropped from that peak but remains 18% higher than the pre-pandemic 2019.

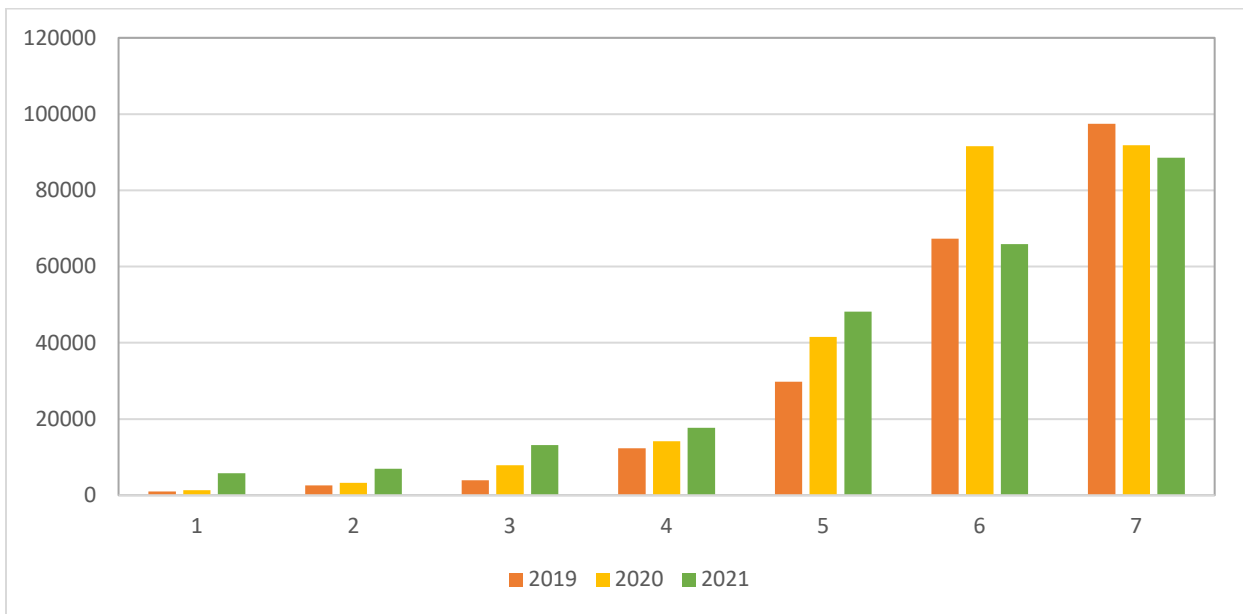


Tolling again produced the most revenue, however the \$1.6 million generated fell below both the 2020 and the 2019 numbers. It should be noted when comparing to 2019 toll revenue that there was a fee increase in 2020. The quantity of annual permits sold in July is close to the level sold in 2020 (down 7 percent) but only half the quantity sold in July of 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 percent from 2019 and 4 percent from 2020.

Looking at these sales by month we see that for 2021 annual permit sales have been more consistent month-to-month with the peak occurring in May (30,300) and less variance between the highest sales month and the lowest sales month (February). Both 2020 and 2019 have greater fluctuations from month-to-month. 2019 data reflects a fairly steady growth by month with July being the peak, whereas both 2020 and 2021 have annual sales dropping in July.



Looking at daily permit sales, there is a lot more consistency in the changes from month-to-month as well as the trend of increased growth through May. In June and July, we are seeing declines when compared to both 2020 and 2019.



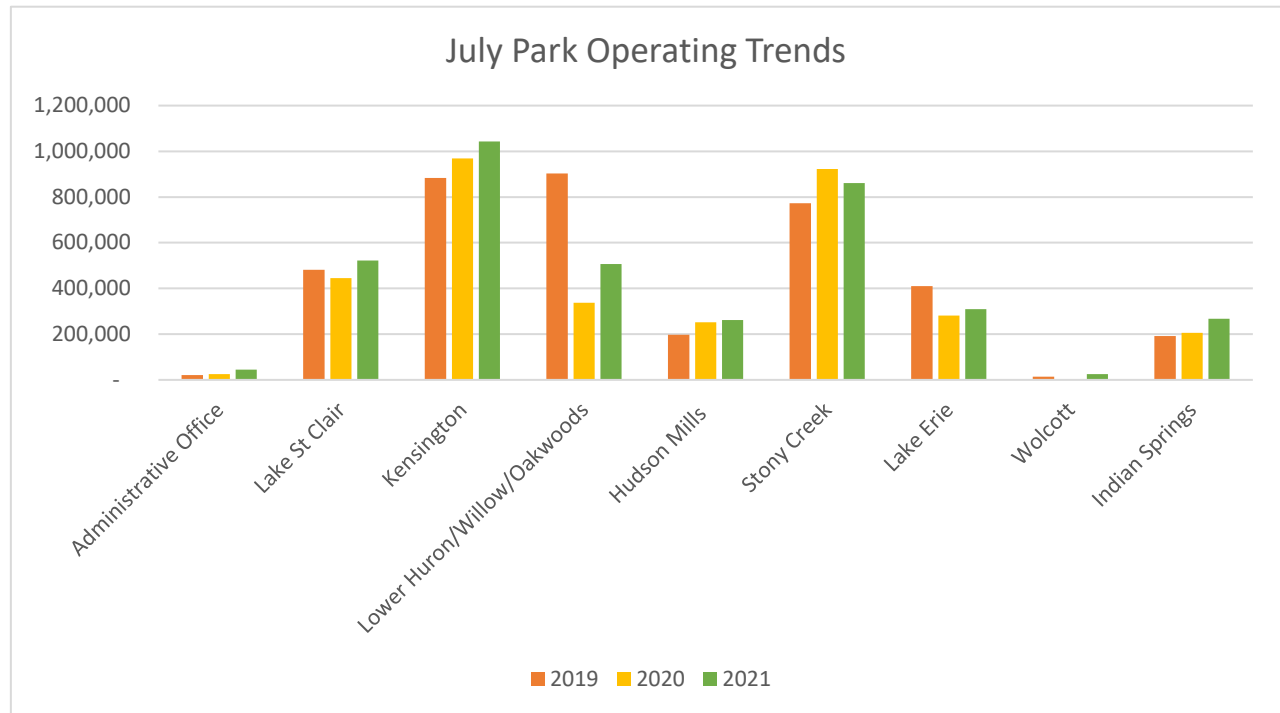
On plus side, our second most significant revenue source, golf, continues to be strong. June 2021 golf revenue exceeded \$1.3 million. This is marginally ahead of June 2020 and \$283,000 higher than 2019.

The only other significant change is in the “other” category. This category includes several smaller revenue activities. Some activities that are pushing this growth are beach, activity center rental and special events.

## BY LOCATION

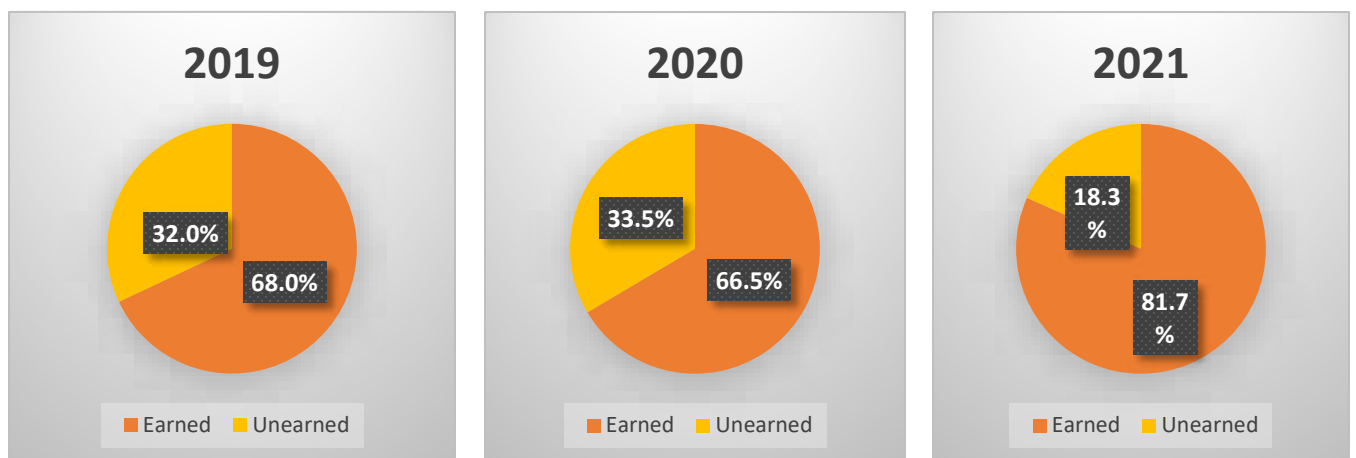
The impact of the public's response to the pandemic and its evolution are not just reflected in the story of how different activities have changed. Similarly, looking at park operating revenue by the location, we continue to see that just as the pandemic has had uneven impacts across each of the individual Metroparks locations differently as well.

In the chart below, for most locations July revenue increased from July 2020. The exception being Stony Creek. At Stony Creek July boat rental fell 34 percent, tolling fell 20 percent and the golf course declined by 7 percent.



Comparing attendance data between using vehicle counts for July we show overall declines of 7.6 percent. The exceptions are the Southern district parks which show net gains against the previous year and are even with their three-year averages.

Considering year-to-date revenue. As noted in last month's update, 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 June to the budgeted revenue not yet earned.



At the end of June in pre-pandemic 2019 and 2020 we were consistently around 67% of operating revenue earned. This year, even with the dip in June we have generated nearly 82% of budgeted operating revenue earned.

In March I noted that we were over \$1.0 million ahead of where we would typically expect to be for park operating revenue. April we were over \$2.0 million ahead. In May we were \$3.0 million ahead. Although June numbers declined against 2020 and 2019, year-to-date the system is still well ahead of prior years' revenue numbers. The July numbers have pushed us back to the level of being \$3.0 million ahead of previous years. There is nothing in the data so far that is worrisome, and I fully expect 2021 to be a very strong operating revenue year for the Metroparks.

# EXPENSES

Overall, year-to-date Administrative Office expenses are ahead of 2020 by \$346,000 but only marginally ahead of 2019. The increase is primarily in professional services in several areas, 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 portion of the rise.

## MAJOR MAINTENANCE AND CAPITAL

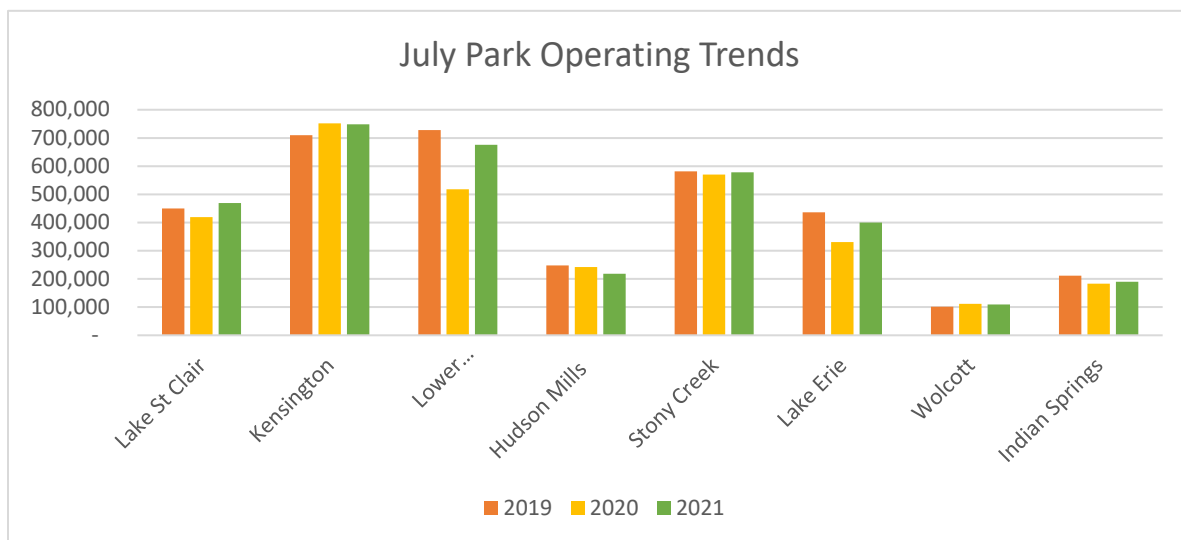
Over 94 percent of planned capital equipment and land acquisition purchases have been either paid for or encumbered. Payments during the month of July totaled just over \$186,000 or 6 percent of the budget.

As of the end of July, 53 percent major maintenance projects have been either received or contracted for. July payments for major maintenance totaled over \$626,000 or 17 percent of the annual major maintenance budget. It is typical for a large volume of major maintenance work to be scheduled for a post-Labor Day timeframe.

## PARK OPERATIONS

Overall, year-to-date park operation expense is less than one percent above the 2019 year-to-date level. When comparing to 2020, there is a more significant increase as the 2020 numbers were suppressed by the park's response to COVID-19. It is also interesting to note that 2021 year-to-date park operating expenditures are slightly below the 2018 numbers.

Looking at individual parks for the month of July, the variance between 2021 and 2019 (pre-COVID) numbers ranges from an increase of \$20,000 (4 percent) to a decrease of \$52,000 (7 percent).

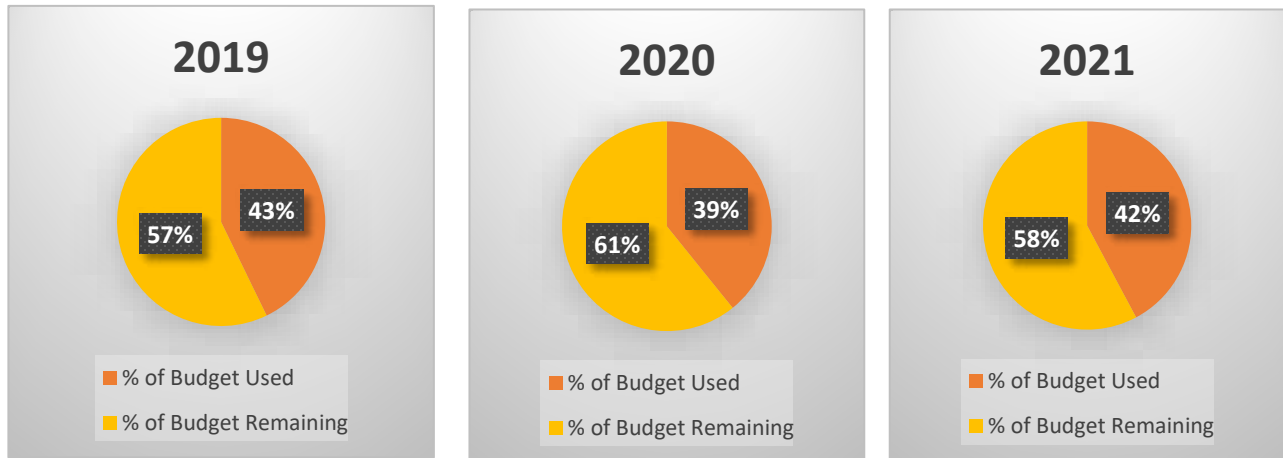




Looking at expense by activity, aquatic facility expenses are 39 percent below the 2019 level down by \$579,000 but have rebounded by \$150,000 from where we were in 2020. Golf expenditures are up just four percent from pre-pandemic levels but \$460,000 above 2020. General park maintenance is also increasing, up four percent from 2019 but nine percent from 2020, up \$492,000.

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. Actual growth in full-time expenses as of the end of July 2021 compared to July 2019 is just 1.7 percent and 0.6 percent.

At the end of July, we have used 48.2 percent of the annual budget, in 2020 the amount was 49.7 percent and in 2019 we were at in 47.3 percent. These results are consistent enough that I would expect to see a park operating budget surplus similar to what we have had in 2019, or at least \$1.0 million.



Finally, to conclude this final monthly financial report, I would like to express my deep and sincere appreciation to the entire Metroparks family. It has been my privilege and pleasure to work with you to support these parks.

We have always known in our hearts how important the work we do is. If the pandemic has taught us anything it is that this is true and that together we can do anything we put our minds to. We are stronger together. All voices are important. None of us can do it alone. I am stopping working alongside you every day, but I will never stop caring. Keep up the good work, build on what we have accomplished together, and I look forward to enjoying the fruits of our labor!





To: Board of Commissioners  
From: Rebecca L. Franchock, Chief of Finance  
Subject: Appointment – Pension Committee/Retiree Health Care Trust Board  
Date: August 6, 2021

**Action Requested: Motion to Approve Recommendation**

That the Board of Commissioners appoint a new “at large” Board member to the Authority’s Pension Committee and Retiree Health Care Trust Board as requested by the Pension Trustee and Retiree Health Care Trust Administrator, Rebecca Franchock.

**Fiscal Impact:** None

**Background:** There are seven (7) members required on the Pension Committee and the Retiree Health Care Trust Board. These members are listed in the plan documents as:

- Chairman of the Board of Commissioners
- Two (2) “at large” Board of Commissioners
- Metroparks Director
- POAM representative
- Employee Association representative
- Retiree representative

With the recent changes that have occurred in the Board of Commissioners, an “at large” Board of commissioner position is vacant. The term of service, once appointed, coincides with their service on the Board of Commissioners, up to a six-year term.

The next scheduled Pension Committee and Retiree Health Care Trust Board meeting will be held Nov. 11.



To: Board of Commissioners  
From: Rebecca L. Franchock, Chief of Finance  
Subject: Approval – 2021 Pension Plan Additional Contribution  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve an additional 2021 Pension contribution in the amount of \$1,975,878 as recommended by Chief of Finance Rebecca Franchock and staff.

**Fiscal Impact:** The 2021 General Fund Budget included \$3.2 million for funding of the defined contribution Huron-Clinton Metropolitan Authority Employees' Retirement Plan. In May, Gabriel Roeder, the Metroparks actuary, determined the actual annual required contribution (ARC) to be \$2,725,948. This amount was contributed to the Plan, which resulted in a \$454,052 savings.

In addition, the Retiree Health Care Trust contribution was budgeted at \$1.25 million. In May, the ARC for that Plan was determined to be \$248,174 and the contribution was made for that amount, which resulted in savings of \$1,001,826.

The proposed contribution is the remaining budgeted funds, which had not been spent earlier as well as \$500,000 of an anticipated operating surplus for 2021.

**Background:** It is anticipated that the Pension Committee will approve recommending this to the full Board of Commissioners at their meeting preceding the Board of Commissioners meeting on Aug. 12, 2021.

In July 2021, the minimum payment was made to both the Pension Plan and the Retiree Health Care Trust due to the financial uncertainties related to the pandemic. At this time, staff expects that the actual revenues and expenditures will result in a surplus in the general funds current year operations in excess of \$4 million.

The Pension Plan is currently funded at 76.5 percent and the Retiree Health Care Trust is currently funded at 104.5 percent. At this time, it seems prudent to contribute the unspent funds remaining after the May contribution to the Pension Plan as the percentage funded is lower in that Plan. It also seems to be prudent to use some of the surplus general fund monies to mitigate future liabilities associated with the Pension Plan putting funds to use within the more robust investment strategy available to improve percentage funding for the Plan.

For this reason, I am asking that the Pension Committee recommend to the full Board of Commissioners to contribute the entire \$1,475,878 of the unspent, budgeted funding for both the Retiree Health Care Trust and the Pension Plan to the Pension Plan. In addition, that \$500,000 of anticipated surplus be used to augment that contribution bringing the total supplemental contribution to \$1,975,878.



To: Board of Commissioners  
From: Rebecca Franchock, Chief of Finance  
Subject: Approval – Mackinac Policy Conference Sponsorship  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the recommended sponsorship amount of \$25,000 to be offset by potential sponsorship funding as recommended by Director Amy McMillan and staff.

**Background:** The annual Mackinac Policy Conference is generally considered one of the premier networking opportunities in Michigan and beyond. In addition to the opportunity to develop working relationships over conversations on the porch of the Grand Hotel and at events over the course of the conference, the Mackinac Policy Conference quite literally puts important and emerging issues on stage, in front of leaders from the private, public, and philanthropic world.

Since returning from the 2019 Mackinac Policy Conference, it has been my goal to put the Metroparks on one of those stages to demonstrate the power of strong public park systems to transform and sustain our communities. Presenting at conferences like NRPA and mParks are preaching to the choir of park professionals, presenting at the Mackinac Policy Conference is an entirely different opportunity.

The COVID-19 pandemic brought into sharp focus the critical role public park organizations such as the Metroparks play in the health of people, communities and the economy. There will perhaps be no better time to make the case and advance the cause of the Metroparks and public parks in Michigan than the 2021 Mackinac Policy Conference. At \$25,000 for the “silver” level sponsorship, it is not inexpensive to present at the conference; however, I firmly believe the long-term value to the Metroparks will exceed the cost. We have already secured a \$5,000 sponsorship from the Detroit Riverfront Conservancy and expect several other sponsors to come on board in the next two weeks. The balance will be paid from the Metroparks budget.

We have been able to secure a Mackinac Policy Conference session on September 20, 2021. Wayne County Parks and Recreation Director Alicia Bradford and DNR Director Dan Eichinger have agreed to join me as panel members (the Chamber allows only three people on panels). Our team at Truscott Rossman has secured Vickie Thomas, communications director for Detroit Mayor Mike Duggan, to moderate the panel. As one of the very first sessions of this year’s conference, the Chamber will be heavily marketing our session. A list of additional benefits at our level of participation are attached, as well as a summary of the 2021 Mackinac Policy Conference theme.

**Attachment: Scope of Sponsor Session**

## Sponsored Session Scope

**Date submitted:** 7/19/21; refined 8/01/21

**Sponsor host:** Huron-Clinton Metroparks

**Proposed session name/topic:**

The Pandemic and Parks – The Important Lessons COVID-19 Reinforced About the Value of and Need for Public Spaces and Outdoor Recreation Opportunities

**Target audience:**

**(Please include company size and industry, government or civic).**

50-75 policymakers and community leaders across industries and attendees.

**Description:**

Parks and recreation professionals at the local, regional, state and national level have been plugging the benefits of spending time in the outdoors for decades. When a global pandemic kept us home from our offices, schools, businesses, and vacations, millions of Michiganders “re-discovered” their public parks, where they could safely hang with friends and family and, just maybe, save their sanity.

While Michiganders were turning to their parks like never before, people were buying bicycles, paddle boards and boats, kayaks and canoes, running shoes, water bottles, cameras, tents, golf clubs, and more faster than local (and virtual) merchants could re-stock their shelves. They were improving their health and, ultimately, lowering their health care costs every time they set foot on a trail or put an oar in the water. And, while all of this was going on, parks were also benefiting their communities in other ways – going about the work of promoting tourism, managing storm water, improving air quality, and increasing property values.

How do public parks provide a return on the investment of private and public support required to sustain them? How are local, regional, and state officials working together to connect, develop, sustain, and steward the infrastructure of public parks that are so critical to the future our communities? Join DNR Director Dan Eichinger, Huron-Clinton Metroparks Director Amy McMillan, and Alicia Bradford, Office of Wayne County Executive to find out.

**Proposed Speakers: (Maximum panel size three speakers and one moderator).**

*Speakers:*

Dan Eichinger, Director, Michigan Department of Natural Resources

Amy McMillan, Director, Huron-Clinton Metroparks

Alicia Bradford, Parks Director, Office of Wayne County Executive

*Moderator:* Vickie Thomas, Communications Director, Detroit Mayor Mike Duggan, and former long-time WWJ Radio reporter

**Will there be audience participation?**

Yes, Qs from audience will be taken by moderator – collected on note cards during the session.

**How does this session provide content relevant to vision/pillars?**

While the session most directly relates to the Invest pillar, it also spans the other two in various ways, and underscores an important opportunity to meet the conference’s 2021 vision of “Reimagining a Healthy Michigan.”



Invest: Research shows that access to parks and nature is a potent force for physical and mental health and wellbeing and can be anchors for our communities – and that was long before the pandemic when we collectively needed these outlets more than ever.

Accelerate: Numerous studies also demonstrate the tremendous economic benefit and impact parks play in our communities – focus and investment in this kind of infrastructure will bolster our economic recovery and sustainability as well as increase quality of life and talent attraction and retention.

Advance: Our nature, parks, playgrounds, public lands and outdoor recreation opportunities are part of what defines us as a people and a state. They connect us and make us better, stronger and healthier – whether you are black, brown or white, whether you live in an urban city, suburb or rural area and no matter your age, background, creed, ethnicity, or socio-economic status. We can and must do better to ensure universal, equitable access.

**Key take away for attendees:**

1. 2021 and transformational American Rescue Plan funding provide the perfect opportunity to reflect on, support and invest in supporting and creating these invaluable public spaces – now and in the future.
2. Becoming a champion for public parks and outdoor spaces will help us all live, work and play in a strong, thriving and healthy Michigan.

Please Return to:  
Andrea Rayburn  
Specialist, Signature Events  
Detroit Regional Chamber  
[arayburn@detroitchamber.com](mailto:arayburn@detroitchamber.com)  
(313) 596-0340  
Please cc: [jconnarn@detroitchamber.com](mailto:jconnarn@detroitchamber.com)





To: Board of Commissioners  
 From: Tyler Mitchell, Chief of Natural Resources and Regulatory Compliance  
 Projects: ITB 2021-037 Phragmites Control at Kensington and Indian Springs Metroparks  
 ITB 2021-038 Phragmites Control at Lake Erie Metropark  
 ITB 2021-039 Phragmites Control at Lake St. Clair Metropark  
 ITB 2021-040 Phragmites Control at Lower Huron and Willow Metroparks  
 Location: Lake Erie, Lake St. Clair, Lower Huron, Kensington, Indian Springs, Willow Metroparks  
 Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners award ITBs 2021-037, 038, 039, and 040 for Phragmites control to the low responsive, responsible bidders as indicated below for a total not to exceed an amount of \$61,000 as recommended by the Chief of Natural Resources and Regulatory Compliance Tyler Mitchell and staff. Recommendations are made in consideration of bidders’ capacity to complete this time sensitive work in an efficient and effective manner.

- Award a contract to PLM Lake and Land Management of Morrice, Michigan for a not to exceed amount of \$23,000.00 for treatment of Phragmites at Indian Springs, Kensington, and Lake St. Clair Metroparks.
- Award a contract to Davey Resource Group of Kent, Ohio for a not to exceed amount of \$38,000 for treatment of Phragmites at Lake Erie, Lower Huron, and Willow Metroparks.

**Fiscal Impact:** This project is a 2021-budgeted item; funds are available in the Major Maintenance Outside Services account.

**Scope of Work:** Work will consist of spraying re-sprouts of non-native Phragmites in areas previously sprayed and addressing satellite populations. Work will take place at Lake St. Clair, Kensington, Indian Springs, Lower Huron, Willow and Lake Erie Metroparks and has been an annual management activity since 2013.

**Background:** In 2013, the Metroparks began to control invasive Phragmites (*Phragmites australis ssp. australis*) by spraying annual growth with systemic herbicide. To execute this method properly, it is essential to treat any regrowth of this invasive species with herbicide the following year. Funding allocated for herbicide treatment of Phragmites will be used on areas that had previously been treated.

Removing Phragmites will promote the establishment of native species and increase native biological diversity in the Metroparks system enhancing recreation and education opportunities while promoting sound stewardship of our resources.

The ITBs were competitively bid and posted on the Michigan Intergovernmental Trade Network (MITN) site, which provided notice of the solicitations to 130 vendors, of which 14 downloaded the ITBs.

The Metroparks received bids from four vendors that offered the following hourly rates per Metropark:

<b>Location</b>	<b>PLM Lake &amp; Land Management Morrice, MI</b>	<b>Chop Grand Rapids, MI</b>	<b>Davey Resource Group Kent, OH</b>	<b>Wildlife &amp; Wetland Solutions South Boardman, MI</b>
Kensington	\$70.00*	\$235.00	No Bid	No Bid
Indian Springs	\$70.00*	\$235.00	No Bid	No Bid
Lake St. Clair	\$70.00*	No Bid	\$87.22	\$425.00
Lake Erie	\$70.00	\$235.00	\$83.01*	\$700.00
Lower Huron	\$70.00	No Bid	\$87.37*	\$450.00
Willow	\$70.00	No Bid	\$87.37*	\$450.00

*(\*) Indicates recommended award.*



To: Board of Commissioners  
From: Tyler Mitchell, Chief of Natural Resources and Regulatory Compliance  
Subject: Report – Monthly Natural Resources Update  
Date: August 6, 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

AUGUST 2021

Administrative Office  
13000 High Ridge Drive  
Brighton, MI 48814



[METROPARKS.COM](https://www.metroparks.com)

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# SYSTEM-WIDE

## ADMINISTRATIVE

Permitting for Shoreline Grant work at Lake Erie and St. Clair Metroparks

Rouge Park – Prairie restoration planning for fall 2021

NPDES Permit administration continues

Volunteer day planning – invasive shrub removal

Deer management plan review

Washago area restoration planning

Groundwater monitoring study in partnership with USGS

SEMIwild committee meetings – to create pathways for diverse youth in natural resources





# SOUTHERN DISTRICT

## LAKE ERIE METROPARK

Natural Shoreline project preliminary work beginning

Marsh dredging planning

Phragmites control upcoming in August and September

## WILLOW METROPARK

Heavy storm damage throughout park, cleanup ongoing

Washago area planning, presenting in September





# WESTERN DISTRICT

## KENSINGTON METROPARK

Contracted invasive shrub control continues

Oak Wilt survey and staff training

## INDIAN SPRINGS METROPARK

Swallow-wort podding and spraying in sensitive areas

Right-of-Way utility permitting for Winter 2021 work

## DELHI METROPARK

Contracted Invasive Shrub Removal beginning in Oak Barrens and Floodplain Forest



# EASTERN DISTRICT

## STONY CREEK METROPARK

Storm damage clean up continues

Lake Treatment and assessment in August

## LAKE ST. CLAIR METROPARK

Upcoming Phragmites treatment in Black Creek Marsh in August and September

## WOLCOTT MILL METROPARK

Storm damage cleanup

Annual Survey of restored prairie



# WHAT'S NEXT?

## SYSTEM-WIDE

Volunteer Natural Resources workdays – Invasive Shrub Removal

Phragmites treatment at several parks

Washago Area restoration plan

## SOUTHERN DISTRICT

Shoreline project at Lake Erie Metropark

Big Bend Fish Electrofishing Study - preliminary results

## WESTERN DISTRICT

Oak Wilt training and survey with International Society of Arboriculture Michigan

## EASTERN DISTRICT

Lake St. Clair shoreline work begins

Prairie enhancement at Wolcott Mill and annual survey of restored areas



To: Board of Commissioners  
From: Danielle Mauter, Chief of Marketing and Communications  
Subject: Report – Marketing Update  
Date: August 6, 2021

**Action Requested: Motion to Receive and File**

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

**Attachment: Marketing Report**





# HURON-CLINTON METROPARKS MARKETING REPORT

July 2021

Administrative Office  
13000 High Ridge Drive  
Brighton, MI 48814



[METROPARKS.COM](https://www.metroparks.com)

# JULY 2021

## July Recap

### *Summer Campaigns, Park Maps, Park Brochures & Website Update*

During the month of July, summer campaigns continued to run across local broadcast TV, cable and online video placements, radio, billboards, digital and social media, email and print. At the July Board meeting the details of a large print insert campaign in local publications was presented to the Board. Those inserts were placed in publications the last week in July.

Chief of Marketing and Communications has been working with communications staff at the Detroit Riverfront Conservancy on co-branded advertising that is taking place throughout the summer. To this point it has included co-branded print ads in Detroit River Living magazine, Michigan Chronicle, a Michigan Chronicle insert and some social media posts. In August it will also include co-branded billboards in Detroit neighborhood surface streets and digital billboards along major expressways. Co-branded communication pieces will continue to come out this fall.

Marketing staff are working closely with Factory Detroit and staff throughout the system to complete a few large projects. One is the update and redesign of all park brochures/maps. All park maps/brochures will be complete by the end of the year. All the park maps/brochures are in some stage of review and tweak at this point. The five-county map will be started this fall and completed by the end of the year.

The other large on-going project is the website redesign project. Marketing staff are working closely with IT on the build-out of the design Factory Detroit provided. Marketing staff are also working closely with staff throughout the park system to review and proof content as we move closer to a launch sometime this fall.

## 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% 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 June, total car count YTD was 1,736,300.

# JULY 2021

3. ***Increase 2021 annual pass sales by 5% to a total of 199,511 2021 annual passes sold.***
  - Sales of all Annual Pass types was at 125,743 at the end of April. This is a large increase compared to the same time period in 2020 = 78,536 and 2019 = 76,735.
  - May and June annual pass sales were lower this year than May and June of 2020. June 2021 sales were lower than June 2019 (pre-pandemic) monthly sales by 8,000 passes. However, overall sales of annual vehicle passes from Nov. 2020 through Jun. 2021 are still up about 24,000 compared to Nov. 2019 through Jun. 2020.
  
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 at the end of summer that overlays marketing placements with attendance data. In between, 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 as well as evaluations from children and incentives to encourage survey completion are being discussed in July and August 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***
  - The results in the scanning data report are being monitored for changes in annual pass usage from city of Detroit visitors as well as daily pass visit information.



# JULY 2021

**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. The first look at that was in the first quarter scan data report that Planning presented to the board in June.

**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.***

- See zip code report included in packet as put together by Planning and Development department. 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.

**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 summer season attendance numbers and demographics at Interpretive programs as well as annual passes, daily passes, event rentals and golf. Setting baselines is something that needs to happen seasonally and after the full system RecTrac implementation in Apr/May.

**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)***

- Campaign pieces for this communication effort began running on March 22. Our campaign thus far has been split into three main arms: Weddings, Family gatherings (reunions, etc.), and half off weekday rentals. Our new TV/Video commercial about gatherings began running on July 19 to catch some late season rentals. At the end of April, event rental revenue was approximately \$191,463. Year-to-date rental revenue at the end of June was \$449,760 if including the Thomas Welsh Activity Center and EDC rentals, and was \$359,260 if only calculating shelters. Goal is on track with a little way left to go.
- Shelter Rental revenues are up over the three-year average in most parks. Lake St. Clair is up 40 percent from the three-year average; Stony Creek is up 61 percent from the three-year average; Hudson Mills is up 79 percent from the three-year average; Kensington is up 38 percent from the three-year average.

# JULY 2021

10. ***Maintain at least 20% 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 June, golf rounds were up 53 percent over the three year average and were up 59 percent compared to 2020. It has not taken a big push for golf to perform well this year.
11. ***Increase attendance at aquatic facilities through use of consistent messaging, special promotions, pop-up pricing and dynamic pricing (feasibility dependent on pandemic restrictions)***
  - Will be reported on during summer season. Use of promotions and discounts depends on capacities and operating details this summer. So far, limited capacities have not allowed us to leverage pop-up and special pricing. As restrictions have lifted, staff will continue monitoring if special promotions are needed to increase pool attendance.
12. ***Increase Instagram followers by 50% over 2020 to 4,120 total***
  - Currently at 3,459 followers and growing.
13. ***Increase Facebook followers by 20% over 2020 followers from 17,573 to 21,088 followers by end of 2021***
  - Currently at 20,888 followers and growing.
14. ***Increase average Facebook engagement by 100% to 494,592 engagements by end of 2021***
  - Year to date we have had 125,242 daily engaged users. This has led to approximately 233,467 engagements through July 16.
15. ***Increase Instagram engagement by 20% to 19,033 engagements by end of 2021***
  - 11,385 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.

# JULY 2021

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

- In July we continued coordinating with media on summer topics. The major press releases sent to our full media contact list included:
  - Announcement of the regional swimming program plan creation and call for public participation in our survey
  - DEI Speaker Series
  - Opening and closing of Lake Erie Pool
  - Opening of Turtle Cove and other water facilities along with interpretive centers
- In addition to press releases, we fielded several media calls and requests throughout July including a request from Selby-Utica C&G paper to write a story about our grant projects at Stony Creek; morning live shots about paddling with Fox 2; and fireworks coverage from Fox 2 and WDIV.

**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. Staff were in parks multiple days in July to build library and are working on details for a professional photographer in August. By the end of summer, we will have a decently sized library of summer images from the majority of parks. Work still needs to be done 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 began visiting the Detroit Riverfront as part of events with the partnership agreement with DRFC.
- Director met on-site with Belle Isle Conservancy team.

# JULY 2021

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 summer hiring as parks continue to fill open positions as well as full time positions as they are posted. Made another push for lifeguards at Lake Erie Metropark as part of a press release about water facility changes and openings.
  
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 July summary at the front end of report.



# JULY 2021





To: Board of Commissioners  
From: Jennifer Jaworski, Chief of Interpretive Services  
Subject: Report Interpretive Services Department Monthly Update  
Date: August 6, 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

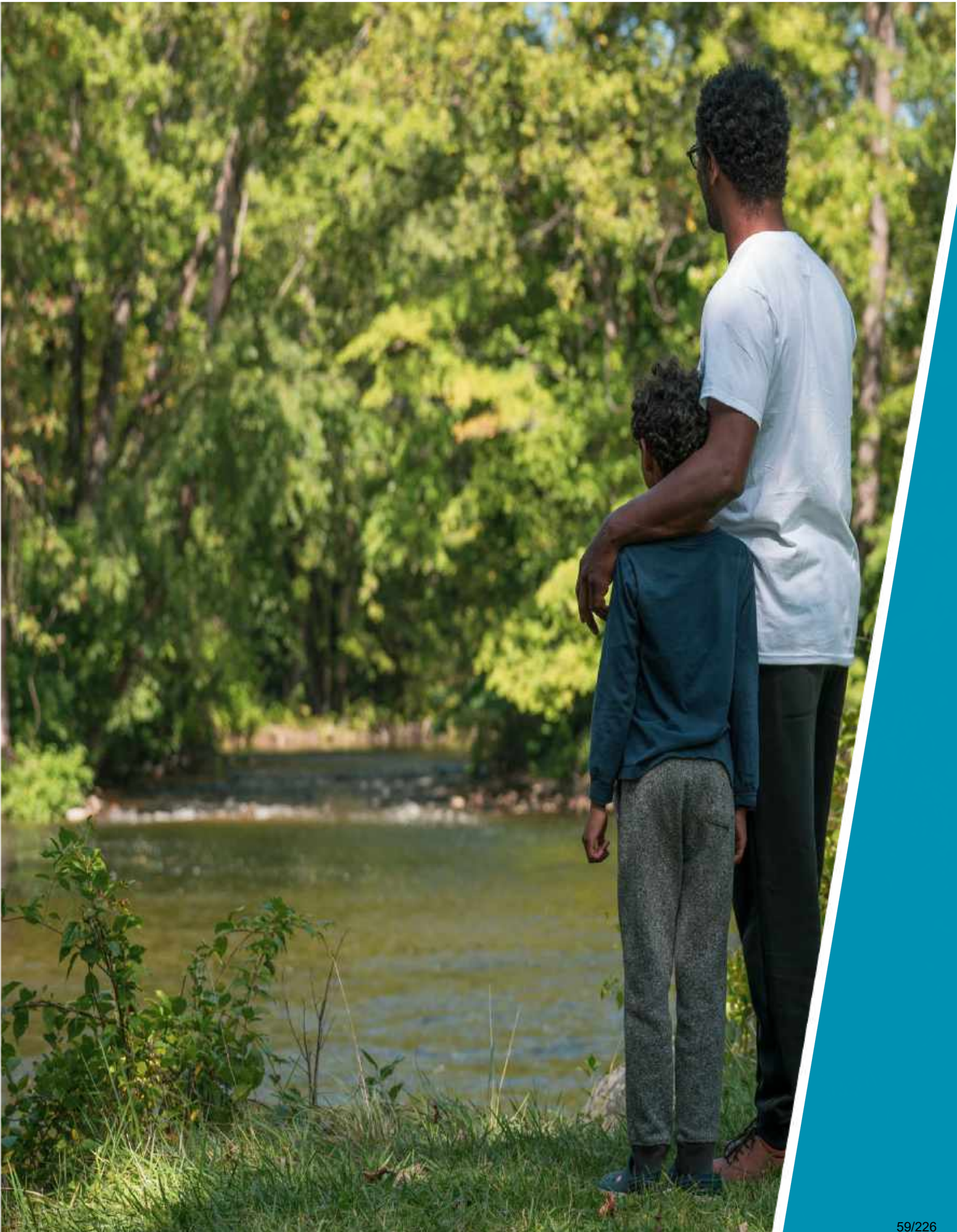
## INTERPRETIVE SERVICES MONTHLY REPORT

July 2021

Administrative Office  
13000 High Ridge Drive  
Brighton, MI 48814



[METROPARKS.COM](https://www.metroparks.com)





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# PROGRAM/INITIATIVE IMPLEMENTATION

## Project/Initiative Implementation

- New:
  - Sensory Friendly backpacks available at Interpretive centers starting in September thanks to DEI department.
  - Alliance of Downriver Watersheds and Huron River Watershed partnership for stormwater education to Wayne County Greenschools
- Ongoing:
  - Michigan Activity Pass
  - ADA benchmarking to evaluate program accessibility
  - Wildlife Management Plan proposal: working in coordination with Natural Resources and Regulatory Compliance to review and update current plan.
  - 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

- New:
  - Belle Isle Conservancy discussion on potential partnership with programming
- Ongoing:
  - UM Public Design Corp: Social Stories and Sensory Maps
  - DPSCD discussion for engagement for Get Out and Learn and Get Out and Play
  - Detroit Riverfront Conservancy: virtual programming and 2021 program schedule developed.



# PROGRAMMING

## Programming

- Ongoing:
  - Get Out and Play 2021
  - 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

**GET OUT  
AND LEARN  
SCHOLARSHIPS  
AVAILABLE**





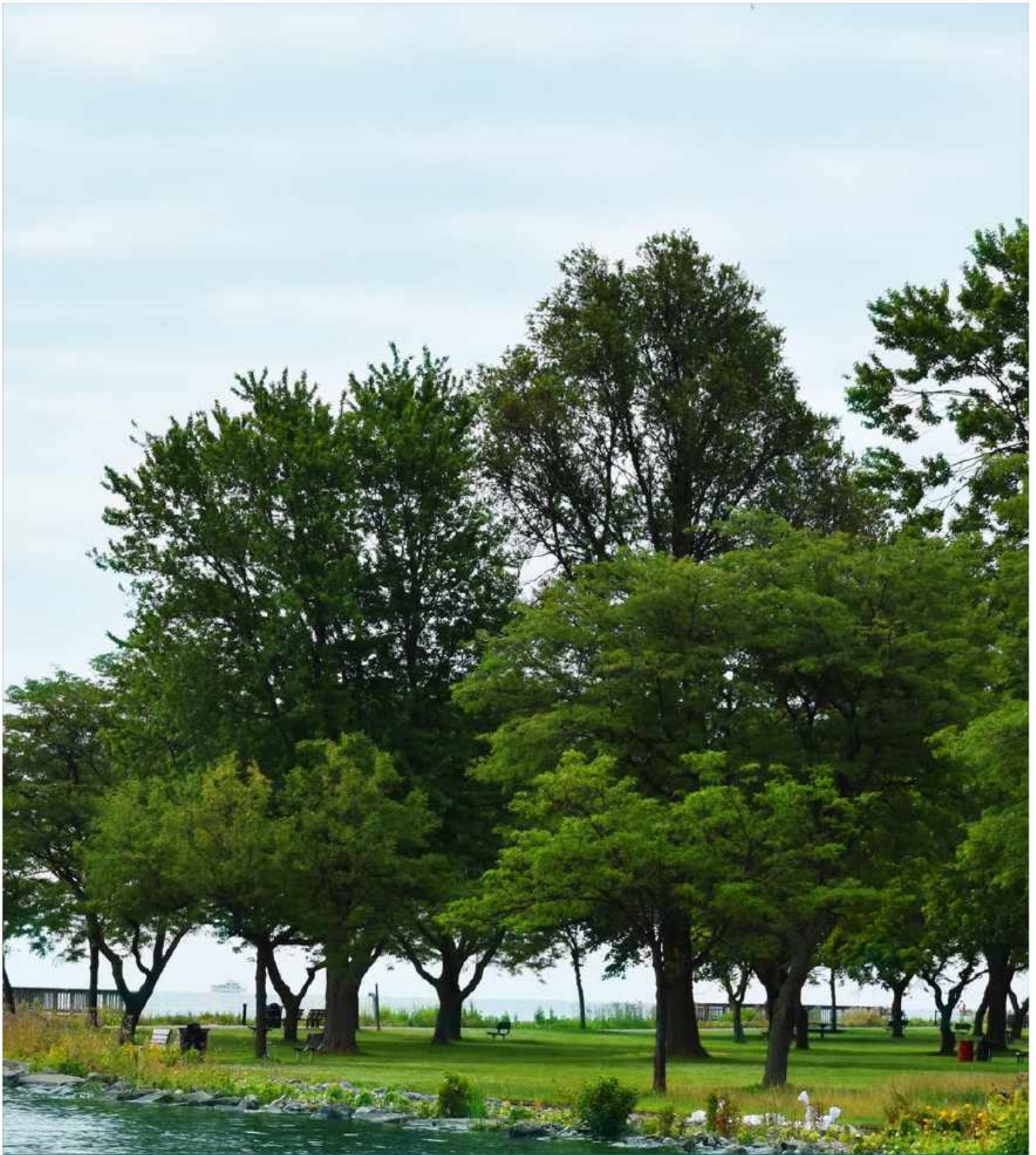
# GRANTS

## Grants

- New:
  - 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 Lk. Erie Marshlands Museum
- Ongoing:
  - PNC Early Childhood grant for the Western District Mobile Learning Center
  - CMU and EPA grant partnership engaging students in water quality monitoring at Lk. Erie Marshlands Museum
  - Lk. 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









To: Board of Commissioners  
From: Artina Carter, Chief of Diversity, Equity and Inclusion  
Subject: Report – DEI Monthly Update  
Date: August 6, 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 Sadler and staff.

**Attachment: DEI Update**





# DEI BOARD REPORT

August 2021



[METROPARKS.COM](https://www.metroparks.com)

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# OVERVIEW

Greeting Commissioners,

The month of July in the DEI Department serves as our annual wrap-up. It is the time when we close out and evaluate the work of the past eight months (October-May) to prepare for the next cycle (October-May). *Some* of the close out activities include: finalizing the 2021 DEI Speaker Series, reviewing training evaluations and revisiting the DEI plan to ensure we are on schedule. *Some* of the activities for “next” are: 2022 DEI Speaker Series, training components, relaunch of the Climate Survey and budgeting. Neither of these lists are exhaustive but hopefully they provide a strong example of the ongoing work that is DEI.

## **DEI-FYI**

In July, we launched what we call DEI-FYI. DEI-FYI is a new series of “Boost” (ways of staying in touch and keeping DEI top of mind with our Metroparks family between trainings). It is our way of uplifting historical moments that are significant to DEI and connecting them to local events and activities. It is “bite-sized” so it is easily digestible (pun intended 😊), easy to read and easy for Marketing to use for social media (if they like). I have included the last two on page 6 of this report.

## **ACKNOWLEDGEMENT**

I want to acknowledge the work of my Assistant, Maria Tejada. She has really hit the ground running and has done an extraordinary job! Among the many things she does, she coordinates the Advisory Team outings and writes the DEI-FYI Boosts. She helps manage the crazy, dynamic pace of DEI and does it with a smile.

Thank you, Maria ... you are truly awesome!

With Gratitude,

Artina

# DEI DEPARTMENT

## MISCELLANEOUS

- Launched a new series titled DEI-FYI (see page 6)
- Participated in multiple interviews
  - Chief of Finance
  - Southern District Superintendent
  - Eastern District Interpretative Services Supervisor
  - Kensington Maintenance
- DEI Speaker Series
  - Event preparation and hosting
  - Hosted Dr. Perry
  - Finalizing 2021 speakers list
  - Pre-work for next speaker(s)
    - Secure verbal agreement with speaker
    - Identify dates, times and number of sessions
    - Provide the information to Shawn for polling
    - Set date
  - Researching speakers for 2022
- Hosted first Advisory Team Meeting Outing
  - Holocaust Memorial Center in Farmington Hills
- Pulling information for the 2022 Budgeting process
- Participated in the Stoney Creek Master Plan update work session
- Continued working on the Strategic Initiative Building Sustaining Collaborations work group
- Presented at the Wayne State University/ AmeriCorps Roots to Rock session Career Panel
- Participated on the HCMA/DRFC programming/marketing call
- Working with Lisa Perez (U.S Forestry Service) to schedule the first work session of the  
*Natural Resources Professional Development Alliance*
- Attended District Operations and All Employee Meetings
- Attended Detroit Association of Black Organizations (DABO) events at Willow Metropark

## PROFESSIONAL DEVELOPMENT

- None for July

## TRAINING

- Collecting and inventorying training iPads and equipment in preparation for the Fall training cycle.

# DEI - FYI

**Eid al-Adha** is an Islamic festival celebrated on the 10th day of the final month of the Islamic lunar calendar (this year celebration begins today, July 19 at sundown). This festival of sacrifice commemorates the willingness of Ibrahim (also known as Abraham) to follow Allah's command to sacrifice his son, Ishmael, and coincides with completing **Hajj**, the annual Islamic pilgrimage to Mecca.

All able-bodied adults of the Islamic faith are expected to complete Hajj at least once in their lifetimes.

Traditionally, the day is spent celebrating with family, friends and loved ones, often wearing new or best attire and the giving of gifts. Ibrahim's sacrifice to Allah is remembered with a sacrifice of meat (goat, sheep, cow or camel) that is divided into three equal portions. This sacrifice is known as **Qurbani**. One third of the **meat** is for you and your family, one-third is for friends, and the final third is to be donated to those in need as an act of charity.

If you'd like to try your hand at making a dish to celebrate, here is a collection of recipes [https://www.bbc.co.uk/food/collections/recipes\\_for\\_eid\\_al-adha](https://www.bbc.co.uk/food/collections/recipes_for_eid_al-adha)

Eid Mubarak and have a wonderful day!

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## July 26: Disability Independence Day

July 26, 2021 was the **31<sup>st</sup> anniversary** of the signing of the Americans with Disabilities Act.

**The Americans with Disabilities Act (ADA)** was signed into law by George H.W. Bush in 1990. The ADA is a civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life, including jobs, schools, transportation, and all public and private places that are open to the general public. The purpose of the law is to make sure that people with disabilities have the same rights and opportunities as everyone else.

The ADA gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, color, sex, national origin, age, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications.

The ADA is divided into five titles (or sections) that relate to different areas of public life. Title I-Employment, Title II-State and Local Government, Title III-Public Accommodations, Title IV-Telecommunications and Title V-Miscellaneous Provisions.

For more information and perspectives from people with disabilities, please see <https://disabilityvisibilityproject.com/> which houses Alice Wong's 100 episode podcast featuring conversations on politics, culture and media with people with disabilities. **Check out Episodes 82 and 82a on the American Disabilities Act with Alice Wong and Conchita Hernandez Legorreta.**

Finally, here's an article about the many definitions of "ableism" and the ways it manifests in policy and social interaction. <https://www.forbes.com/sites/andrewpulrang/2020/10/25/words-matter-and-its-time-to-explore-the-meaning-of-ableism/?sh=9e63def7162d>

# CROSS-DEPARTMENTAL

DEI work is not done in a vacuum. The majority of the work coming from the DEI department is done in collaboration with other departments. In fact, removing silos and finding equitable ways of working together are critical to successful and sustainable DEI efforts. Likewise, DEI is an important part of the work of other departments. The following is a list of DEI initiatives across departments; again, some of these initiatives will also be covered in Departmental Updates.

## ADMINISTRATION

- Met with Belle Isle Conservancy staff (on Belle Isle) to discuss possible future partnerships
- Secured representation from Wayne County Parks (Alicia Bradford) on upcoming Mackinac Policy Conference Panel Presentation

## HUMAN RESOURCES

- Interviews
- Building and Sustaining Collaborative Relationships team member

## INTERPRETATIVE SERVICES

- Sensory Friendly Committee proposal for Sensory Friendly Backpacks sponsored by DEI department
- Many staff attended virtually DEI Speaker series- Dr. Elizabeth Perry – Climate Change and its impact on parks and NR management
- Kevin and Paul sat in on Volunteer Training Session at the Detroit River Hawk Watch Annual Meeting – DEI in National Park Service was a topic
- Kevin sat in on DEI discussion as part of monthly HMANA Board Meeting
- In collaboration with Park Operations, I.T., Marketing and the Community Outreach Interpreters they continue to schedule Get Out and Play 2021
- Victoria Taylor-Sluder attended the DEI Advisory Committee Holocaust Memorial Museum field trip

## MARKETING AND COMMUNICATIONS

- Promotion of DEI Speaker Series
- Working with DEI to develop content calendars
- Website restage updates

## NATURAL RESOURCES

- Working with DEI to develop opportunities to connect underrepresented young people to the work and careers in natural resources.

## PLANNING AND DEVELOPMENT

- Swim in the D has begun!
- CAPRA (On-going)
- Continuing to support the outreach project with DABO

## PURCHASING

- Working with Artina on Speaker Series contracts







To: Board of Commissioners  
From: Nina Kelly, Chief of Planning and Development  
Project Title: Planning and Development Department Monthly Update  
Date: August 6, 2021

**Action Requested: Receive and file**

That the Board of Commissioners receive and file the Planning and Development Department Monthly Update as recommended by Chief of Planning and Development Nina Kelly and staff.

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

*Project/Initiative Implementation*

- Volunteering has entered phase 3 of the re-engagement strategy as of July 8; This phase allows volunteer activities that engage with the public, minor construction projects, and activities indoors. In addition, this includes all activities allowed in phase 1 and 2.
- Open house-style community input opportunity held at Willow for the Big Bend Restoration project (funded by the National Fish and Wildlife Foundation SE Michigan Resilience Fund)
- Visitor count program had permanent counter installed at Lake St. Clair for bicycle and pedestrian counts along hike-bike trail.
- Nonpoint source pollution grant beach restoration at Lake St. Clair near completion.
- Construction began mid-July on the Woods Creek playground at Lower Huron.

*Planning & Community Engagement*

- SMART officials proposed pilot micro transit service in partnership with Metroparks
- 10-Year Master Plan updates will include public engagement efforts prior to movie in the park events at Kensington, Lake St. Clair, Stony Creek, and Lower Huron.
- Kick-off meeting held with PEA Group for the Huron Meadows Trail Connections Feasibility Study project (funded through the Ralph C. Wilson, Jr. Design/Access Fund through the Community Foundation for SE Michigan).
- Kensington Nature Center conceptual planning began with staff engagement in late July.

*Programming*

- DIA Inside/Out program installed 6 art pieces at Kensington, Lake Erie, and Stony Creek through the end of October.
- Movies in the Parks began early August.

*Grants*

- 2021 Great Lakes Restoration Initiative (GLRI-EPA) Nonpoint Source grant application development in partnership with Wyandot of Anderdon Nation to perform ecological restoration at Six Points and green infrastructure improvements at Lake Erie.

**Attachment: Planning and Development Report**





# PLANNING AND DEVELOPMENT MONTHLY REPORT

August 2021

Administrative Office  
13000 High Ridge Drive  
Brighton, MI 48114



[METROPARKS.COM](https://www.metroparks.com)

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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

## METRICS FOR ACTIONS UNDER WAY, COMPLETED OR ONGOING

**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	August 2021 Actions
SYSTEMWIDE	Planning and Development monthly reports	Report		Monthly	Staff time	Report assembly
	Foundation administrative tasks	Various		Ongoing	Staff time	Administrative tasks, 2020 audit complete, 990 complete
	Sign request processing/signage transition plans	Infrastructure/ Small Facilities		Ongoing	Actual cost	Administrative tasks
	CAPRA accreditation preparation	Report	Various	Ongoing	Staff time	Sustainable Policy being developed for CAPRA standard 7.8 and 7.9.1; support provided for all Chapter Chairs
	SEMTAT participation	Report		Ongoing	Staff time	Meeting attendance for Capacity Building & Planning/Mapping committees
	FAIR Play Coalition maintenance and development	Various		Ongoing	Volunteers	Consultations on projects
	Agency/org partnership maintenance and development	Various	Various	Ongoing	Staff time	Ongoing coordination with DRFC and City of Detroit, supplies purchased for Swim in the D
	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	August 2021 Actions
Volunteer Management	Plan		Spring 2021	Staff time	Phase three re-engagement as of July 8th; Volunteer activities that engage with the public, minor construction projects, and activities indoors
Sustainability Plan projects coordination	Various		Ongoing	Various	CAPRA Sub-Committee working on sustainability policy standards
Trail Ambassador program	Report		summer 2021	Staff time	Program will utilize Survey 123 as an option for capturing data, and partner with HWPI for B2B trail segments; soft rollout early August
ADA Transition Plan	Plan		Ongoing	Staff time	Facility updates being collected from parks systemwide.
Visitor count program	Various		Ongoing	Staff time	3 temporary pedestrian/bicycle counters installed at Willow, Kensington, Dexter-Huron. Permanent counter installed at LSC with contractor; parking lot counts continue.
Park Master Plan Updates	Various		Ongoing	Staff time	Steering committee meeting #1 for Stony Creek Master Plan Update; public outreach strategies discussed
Visitation data documentation and analysis	Report		Ongoing	Staff time	Monthly reporting on scan data obtained from annual and daily passes
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	August 2021 Actions
REI Grant Rouge Park	Plan		Ongoing	Staff time	2021 grant received for \$8000, for continuing work for prairie restoration and access. Signs completed, delivered.
Mobile Learning Center- State Farm, Early Education Grant	Plan		August 2021	Staff time	Program that provides grants to top vote-getting projects. Finalists notified in mid-August.
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	August 2021 Actions
2021 Recreation Programming	Various		On going	Staff time	Planning and implementing 2021 work plan and Swim in the D
DIA's Inside/Out program	Various		On going	Staff time	6 art installations completed at KEN, LER, and SCr until end of October
Programming Evaluation	Various		On going	Staff time	Ongoing
Swim program development plan (SE Michigan region)	Plan & Program		Fall 2021	Consultant Report	Survey has been distributed via marketing dept. messaging on yard signs and social media

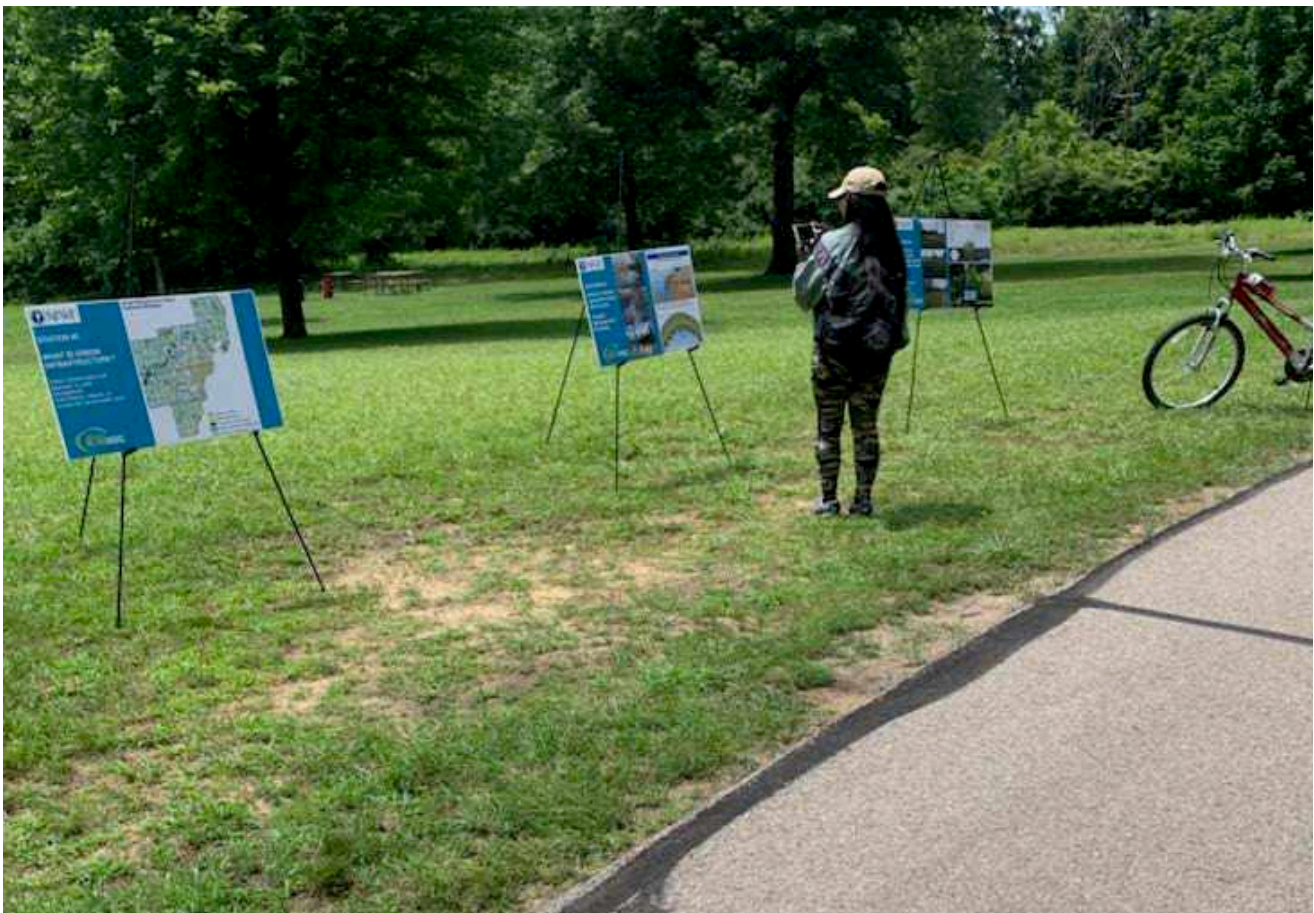
## Project Implementation/Oversight

Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
PNC Grant	Documentation		Ongoing	Staff time	Received grant approval in June; waiting on grant agreement and receipt of check
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	Angle Oar and hand/wrist adaptations installed at SCr and KEN, available for public use
Nature trail wayfinding sign development	Implementation	Various	Ongoing	Staff time	GPS existing signage complete, met with Nature Center staff to discuss, trafox ped counter place between NC and trail start for collection of ped traffic data
ESRI ArcGIS User Conference	Documentation	Various	Ongoing	Staff time	Participated in online sessions related to new technologies and apps
Park maps in ArcGIS	Documentation	Various	Ongoing	Staff time	HMills, KEN, LHu, SCr and Will in progress

# SOUTHERN DISTRICT





Community Open House Meeting at Willow Metropark






# SOUTHERN DISTRICT

## Grants/Fundraising



	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
LER	2021 TF- Accessible Trail Development	Large Facilities		April 2021	Staff	Submitted DNR Trust Fund application for improvements to the Cherry Island Trail.
	2021 GLRI-EPA Nonpoint Source Grant	Large Facilities		August	Staff time	Partnering with Wyandot to perform ecological restoration at Six Points and SWMP green infrastructure improvements at LER.
LHu	2020 TF - LHu Iron Belle Trail Connector	Documentation	Various	2021.	Staff time	Project agreement complete. Ready for design engineering, to be coordinated with 2019 DNR IBT grant
	2020 LWCF - Walnut Grove Campground	Documentation	Various	2021	Staff time	LWCF grant recommended for funding. Entering Project Agreement, additional documentation provided
	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	August 2021 Actions
LHu	2018 LWCF - LH North Fishing Site	Large Facilities		Ongoing	Staff time	Nearing completion; waiting for minor items (striping, bike repair station, etc.) to be completed prior to seeking reimbursement.
	2019 IBT funding	Design		Sept 2021	Completed design engineering	Design engineering with PEA Inc. underway for aforementioned Iron Belle Trail section as well as Huron River Drive crossing
	Woods Creek Playground	Large Facilities	Various	2021 Completion	Construction	Construction started on 7/15. Equipment delivery scheduled for 7/20.
	Accessible Restroom Improvements Project	Small Facilities	Ops/ Maint.	Completed	Staff time	Improvements to Woods Creek, Tulip Tree, and Walnut Grove Campground restrooms recently completed.
	Iron Belle Trail Improvements Project	Large Facilities		August	Construction	Project is nearing completion. Pedestrian crosswalk improvements, trailhead structures, and bike repair station installations are complete.

# SOUTHERN DISTRICT

## Project Implementation/Oversight, cont.

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
WII	SE Michigan Resilience Fund- Big Bend Area Restoration	Large Facilities	Eng/NR	Ongoing	Staff	NFWF survey open with messaging on yard signs within park and local community. RFP issued for engineering design for site improvements.
Oak	2019 LWCF - Oakwoods Accessible Nature Trail	Large Facilities		Waiting on Project Agreement Execution	Staff time	SHPO submittals have received clearance letter. Awaiting project agreement for execution.
LEr	2019 LWCF - Lake Erie Accessible Boat/Kayak Launch	Large Facilities		1 month	Staff time	SHPO response requested State file review (archaeological study by Commonwealth Heritage Group and submitted to SHPO for review.) Awaiting project agreement for execution.

## Facility Concept Planning

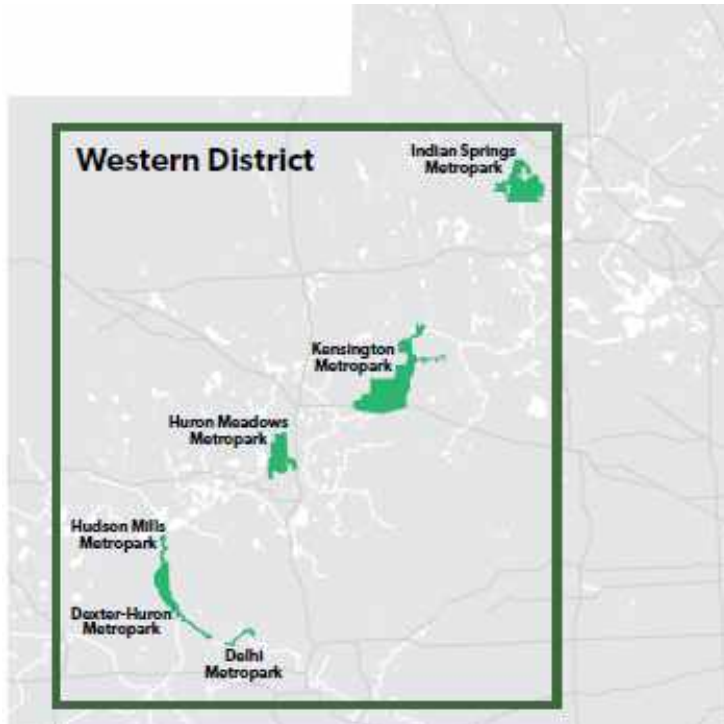
	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
WII	Willow Acorn Knoll Disc Golf Course	Small Facilities	Ops / Maint.	August	Staff time	Concept design completed to convert the course from a short 24 hole course to a longer 18 hole course with 6 additional practice baskets.

## HCMA Studies/Initiatives

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
LHu	South Fishing Site Erosion Control and Accessibility Study	Large Facilities		July	Staff time	Concept design completed.
LEr	Marina building study	Large Facilities		2021	Consultant	Kick-off meeting with consultant on July 8; follow up scheduled for August 11







# WESTERN DISTRICT





# WESTERN DISTRICT

## Administrative





	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 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	Skip's Livery relocation site plan administrative review comments addressed and re-submitted.
Ken	Public art initiative for Maple Beach	Large Facilities		Ongoing	Staff time	Internal review for staff to be scheduled for summer 2021
MISC	Livingston County Parks and Open Space Advisory Committee	Partnership		Ongoing	Staff time	Attendance at regular POSAC meetings

## Grants/Fundraising

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
Del	2021 TF – Accessible Takeout Development	Large Facilities		2021	Staff time	Submitted DNR Trust Fund application.
Ken	Consumers Energy Foundation- Artwork at Maple Beach	Plan		August	Staff time	Letter of intent submitted in June; notification for full proposal selection extended to August.

# WESTERN DISTRICT

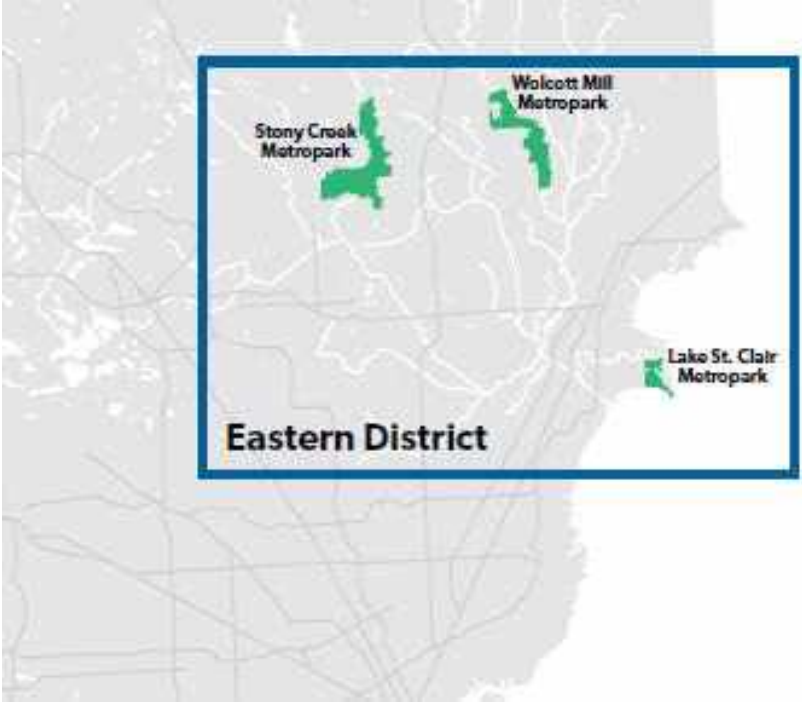
## Project Implementation/Oversight

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
Ken	2019 TF West Boat Launch Accessible Launch Project	Large Facilities		Ongoing	Staff time	Project agreement executed; design underway
HMIlls	2019 TF Rapids View Accessible Launch Project	Large Facilities		Ongoing	Staff time	Project agreement executed; design underway
DHu	2020 TF – Dex-Huron Accessible Launch	Large Facilities		Ongoing	Staff time	Project agreement executed; design underway
HMe	Feasibility study for connection between Huron Meadows & Island Lake Rec Area	Plan		June 2021	Staff time	Contract executed with PEA, kickoff meeting on August 5

## Facility Concept Planning

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
Ken	Kensington Nature Center Parking Lot and Accessibility Improvement Study	Large Facilities		August	Staff time	Concept design reviewed onsite with staff at end of July.

# EASTERN DISTRICT





## Beach Restoration at Lake St. Clair Metropark




# EASTERN DISTRICT







## Administrative

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
WMIII	Schmidt Property Acquisition	Land Acquisition		Fall 2020	Acquisition	Working on demolition of deteriorated barns and other structures on site.
LSC	Nona (S. River Road) Potential Property Acquisition	Land Acquisition		Fall 2020	Consultant fees	Strategy in progress

## Grants/Fundraising

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
SCR	2021 LWCF- Accessible Trail Development	Small Facilities		April 2021	Staff time	Submitted DNR Trust Fund application for improvements to the Reflection Trail.
LSC	Michigan Coastal Management Program Grant – Accessible Kayak Launch	Large Facilities	Various	Ongoing	Staff time	Application submitted late 2020; submitted Section 106 to SHPO with no adverse impacts to cultural resources.


## Project Implementation/Oversight

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
LSC	Transit Planning for Access to LSC	Large Facilities		2021 Completion	Consultant/Staff	SMART officials proposed pilot micro transit service in partnership with HCMA under review with operations staff.
	LSC Beach Restoration Project- Nonpoint Source Pollution Project	Large Facilities		2023 Completion	Staff time	Project walkthrough and punch list complete, project is wrapping up, signage installed. Ongoing bird counts, and USGS monitoring to begin soon
	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	Permit for bridge received, contractor to return in July
	2019 TF – Off-leash Dog Area Development	Large Facilities		Ongoing	Staff time	PSB documents submitted and approved, project is currently out to bid
	Urban Community Forestry Grant	Application	Various	2021 Completion	Staff time	Grant received for 13 trees to be planted near the Stony Creek Starter Building.
WMIII	Wolcott Farm Center Ford Volunteer Corps	Small Facilities		Ongoing	Staff time	Grant received for renovation of 40 garden beds; Volunteer days scheduled for late October.



# EASTERN DISTRICT


## Project Implementation/Oversight, Cont.

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
SCR	Shelden Trails Signage Plan	Small Facilities	Mkting	3 months	Staff time	Will implement additional signage as project progresses throughout 2021
	26 Mile Connector Trail TAP Grant	Large Facilities		2021 Completion	Staff time	Grade inspection meeting held with MDOT, bid package released by MDOT soon

## Recreation Programming

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
	Meet me on the Trail day planning committee	Programming		September	Staff time	Coordination and planning with interpretive and volunteers for participation at the Macomb County Metroparks

## Facility Concept Planning

	Description	Action Type	Dept. Input	Timing	Implementation Indicator	August 2021 Actions
SCR	Banquet tent area at Boat Launch	Conceptual Plan		June-July	Staff time	Concept design complete. Project estimate to be completed by Engineering Dept.

# WHAT'S NEXT?

	Description	Action Type
SYSTEM WIDE	CAPRA documentation assembly	Staff time
	Swim Program Development Plan	Consultant/Staff time
	RFP issuance for 5-Year Community Recreation Plan survey	Staff time
	Eco Counter Monthly Reports	Staff time
EASTERN DISTRICT	LSC transit access plan	Consultant/Staff time
	Programming Evaluations	Staff time
	Stony Creek Master Plan update	Staff time
	Concept development for small playground at Stony Creek Baypoint Beach	Staff time
	Concept development for accessible camp store at Stony Creek Ridgewood Campground	Staff time
WESTERN DISTRICT	Programming Evaluations	Staff time
	Huron Meadows Trail Connections Feasibility Study	Consultant/Staff time
SOUTHERN DISTRICT	Programming Evaluations	Staff time
	LHU Iron Belle Trail design engineering	Consultant/Staff time
	Washago concept revisions	Staff time





To: Board of Commissioners  
 From: Nina Kelly, Chief of Planning and Development  
 Subject: Report – Visitation/Permit Scanning Update  
 Date: August 6, 2021

**Action Requested: Motion to Receive and File**

That the Board of Commissioners receive and file the June/July 2021 Visitation Report as recommended by the Chief of Planning and Development Nina Kelly and staff.

**Fiscal Impact:** None

**Maps:** [Click here to view the Park Visitation report for August](#)

**Background:** The following is a summary of permit scanning activity in the Metroparks for June 16 through July 15, 2021. During this time, there were a total of 227,085 permit scans, which is a 12 percent decrease from last month’s reporting period (257,881 scans system-wide in May/June 2021) and compared to 171,743 barcode scans system-wide during the same period in 2020 (a 32 percent increase in total scans year-over-year). However, in 2020 only seven parks had implemented permit scanning, whereas this year, 11 parks have implemented permit scanning.

June/July			
Park	Vehicle Entries*	Barcode Scans	Annual Passes
Stony Creek	86,223	55,857	4,735
Kensington	101,048	60,157	4,992
Lake St. Clair	60,694*	45,921	3,091
Lower Huron	27,752*	19,237	945
Willow	19,954*	12,575	726
Hudson Mills	16,434	8,166	667
Indian Springs	9287*	8,031	660
Lake Erie	25,040	11,713	804
Oakwoods	2,616*	1,990	115
Dexter-Huron	6,492	1,568	265
Delhi	5,333	1,619	220
<b>Total</b>	<b>240,570</b>	<b>226,834</b>	<b>17,220</b>
Huron Meadows	12,793	23	35
Wolcott Mill	N/A	228	N/A
<b>Grand Total</b>	<b>253,363</b>	<b>227,085</b>	<b>17,255</b>

There were 240,570 vehicle entries and 226,834 permit scans from the 11 parks that have both technologies deployed, equaling a scan rate of 94 percent for the current reporting period. The chart to the left contains vehicle counts, barcode scans and annual passes sold as reported by each park.

For the May/June 2021 reporting period, barcode scans (257,881) represented approximately 61 percent of the total vehicle entries (419,617) in 11 parks which both technologies.

For the June/July 2020 period, the scan rate was 38 percent for seven parks.

\*denotes parks that have started reporting vehicle entry totals for only times the tollbooths are staffed for better comparison to barcode scanning.

**Data Caveats:** Some things to note about the system-wide scan data are that Wolcott Mill does not have a scanner in the Farm Center tollbooth, nor at the Historic Center, Camp Rotary or the North Branch Trails. Huron Meadows does not have a tollbooth.

**Oakwoods, Delhi and Dexter-Huron:** now have scanners when the tollbooths are staffed, and they are now included in the scan totals. Stony Creek, Lake St. Clair, Indian Springs, Lower Huron,



Oakwoods, and Willow have begun reporting vehicle entry counts during times when the toll booth is staffed to more accurately reflect the percentage of vehicles scanned.

**Kensington:** Scanning was halted for a time on June 19, 20, July 2, 3, 4, 5 and 10, due to high traffic volume.

**Lake St. Clair:** Tollbooth #1 Vehicle Entry counter stopped working on July 9; however, park staff included estimated numbers that would average a 75 percent scan rate for those days where Vehicle Entries were not attainable from tollbooth 1.

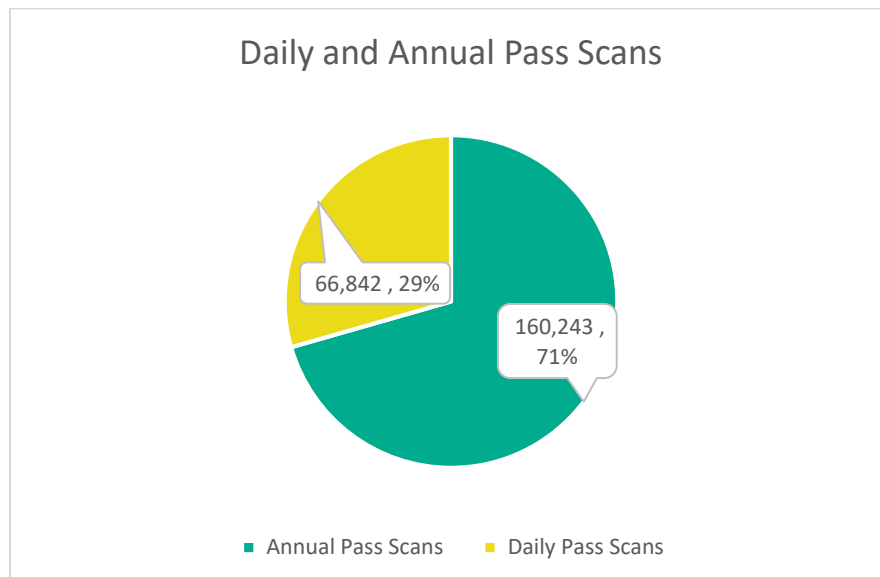
**Stony Creek:** Noted that they had power outages most of the day June 16 and 17. Tollbooth #2 scanner was not functioning well for most of the month: June 18, 19, 20, 21, 26, 27, 28, 29 and July 5-15. There was no scanning on June 30 from 7:30pm-9:30pm. June 25 was rainy, and no scanning was done. Also, there was no scanning (due to high traffic) during a majority of the day during the July 4 holiday.

**Lower Huron:** Staff reported that tollbooth #2 was frequently not staffed, but that this entrance is closed during these times, so it should not affect scanning numbers. Lower Huron also experienced intermittent equipment failures at all booths on June 19, 27, 28 and tollbooth #1 only on June 29 and July 7.

**Willow:** Staff reported that the North Entrance at S. Huron Rd. had a mostly dead scanner battery July 4-14, until a replacement battery was received. Staff continued to attempt to scan every vehicle during that time, but the unreliable battery likely affected scan totals during that time.

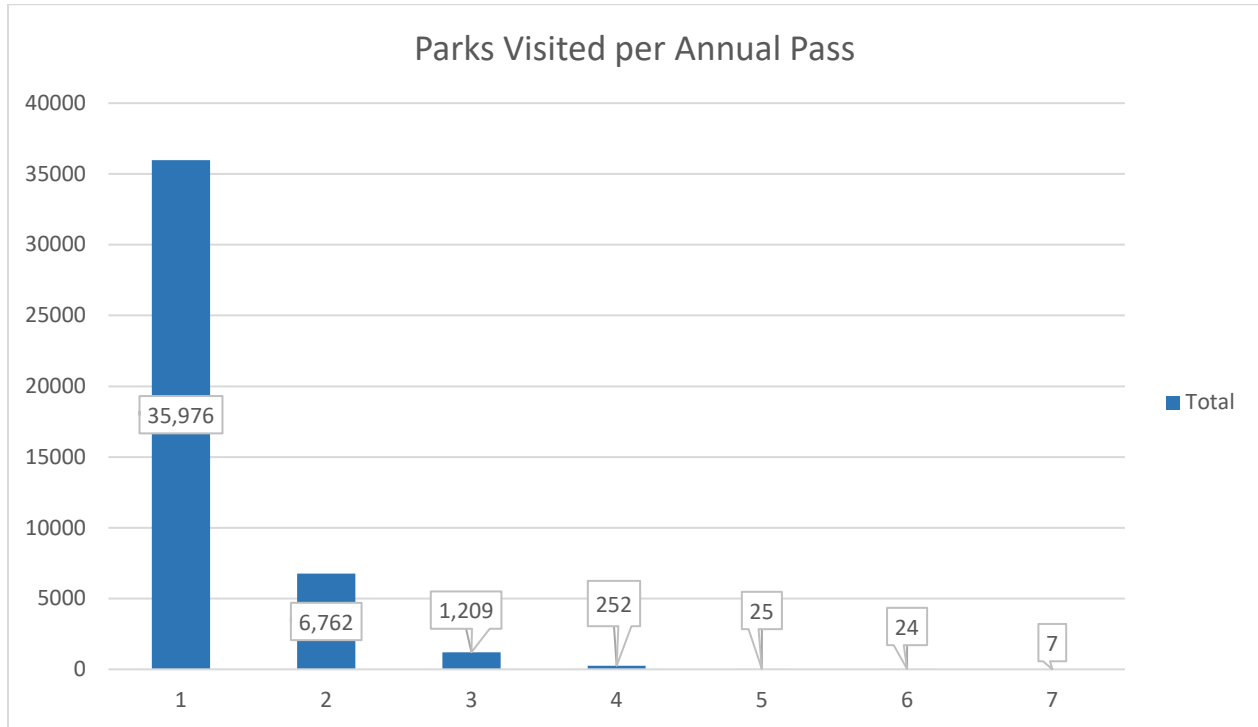
**ZIP Codes:** Of the total permit scans, 94 percent (213,661) had a valid zip code attached and 93 percent (211,119) of those came from within Michigan. Of these Michigan scans, 207,461 or 98 percent (91 percent of all permit scans) came from zip codes within the Metroparks five-county jurisdiction.

The below pie chart shows the breakdown of daily passes and annual passes. Annual passes made up 71 percent (compared to last month's 70 percent) of scans, while daily passes accounted for 29 percent (last month was 30 percent). Last year's breakdown for the May/June period was 92 percent annual, 8 percent daily passes, when RecTrac was not yet implemented and fewer parks were scanning.





**Park Visitation:** The below chart shows how many parks were visited by each annual pass.



A total of 61,090 unique annual passes were scanned during this reporting period. This is a 2 percent decrease in the number of unique annual passes scanned last month (62,257). These passes made 69,200 (down from 71,416 last month) scan visits to unique parks (each park was counted only once per pass, regardless of number of scans by each pass), meaning that on average, annual pass holders visited 1.13 parks during the reporting period. There were total of 159,262 (179,275 in the last reporting period) scans by these passes, including multiple scans into the same park. On average, each annual pass was scanned 2.6 times during this reporting period which is a slight decrease from the 2.9 times reported at last month's board.

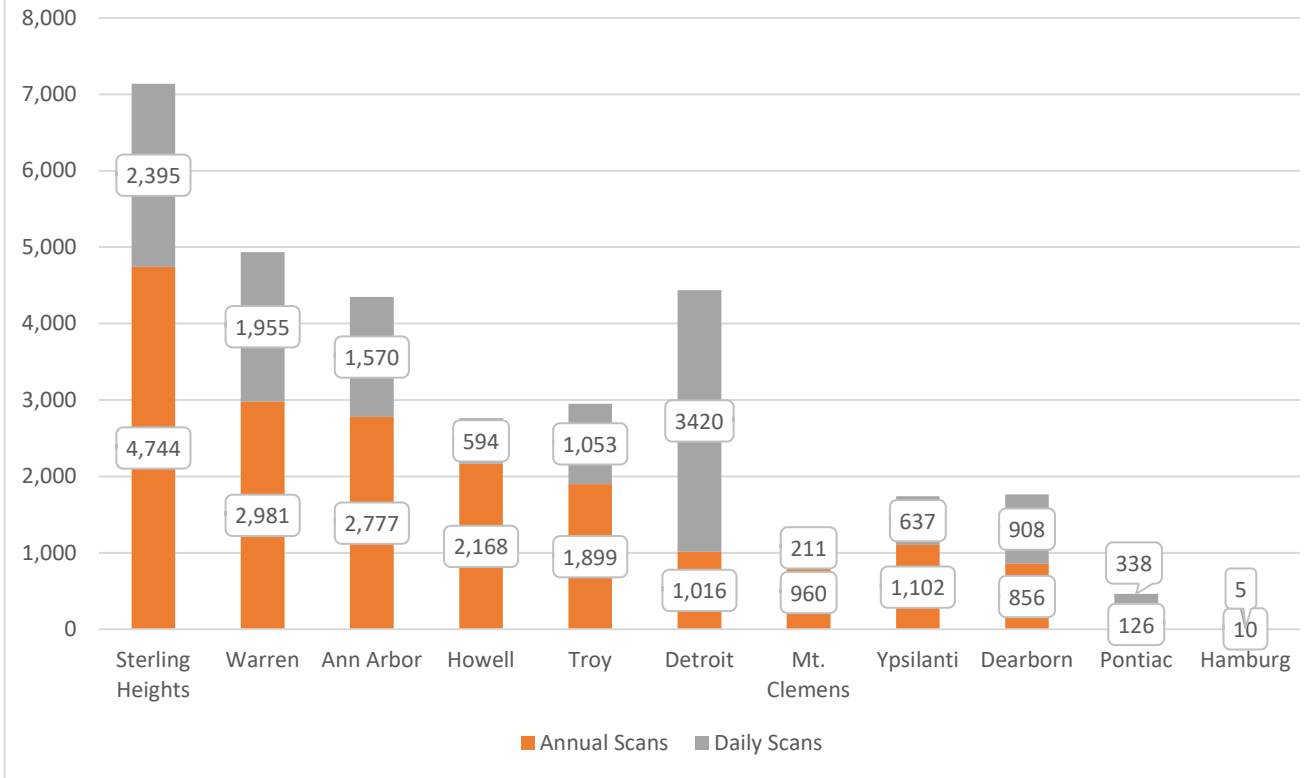
**Year-over-year Comparison:** A year-over-year comparison of the total number of barcode scans for this period shows a 13 percent increase in barcode scanning in 2020 over 2019.

- 2019: 152,039 scans
- 2020: 171,743 scans
- 2021: 227,085 scans

**Pass Use by Population Centers:** The population centers and county seats listed in the below chart, make up 34% of the total population of the five-county area. In this time frame, however, residents from these locales account for just 11 percent of the total scans.

Below is a breakdown of total scans this month by population centers and county seats.

Pass Use by Population Centers and Pass Type



**Livingston County:** During this reporting period, approximately 8 percent of barcode scans came from zip codes within Livingston County. Livingston County does not have any zip codes that have high or very high concentrations of equity populations.

Place	Zip Code	Annual Pass	Daily Pass	Total Scans	Place Total
BRIGHTON	48114	8,286	1139	9,425	13,141
	48116	3,313	403	3,716	
HOWELL	48843	1,673	371	2,044	2,762
	48855	495	223	718	
PINCKNEY	48169	1079	291	1370	1370
FENTON	48430	417	146	563	563
HARTLAND	48353	297	145	442	442
GREGORY	48137	239	27	266	266
FOWLerville	48836	161	67	228	228
HAMBURG	48139	10	5	15	15
<b>Grand Total</b>		<b>15,970</b>	<b>2,817</b>	<b>18,787</b>	<b>18,787</b>

**Washtenaw County:** During this reporting period, approximately 5 percent of barcode scans came from zip codes within Washtenaw County. Washtenaw County does not have any zip codes that have high or very high concentrations of equity populations.

Place Name	Zip Code	Annual Pass	Daily Pass	Total Scans	Place Total
ANN ARBOR	48103	1,737	613	2,350	4,347
	48104	294	144	438	
	48105	558	563	1,121	
	48108	187	232	419	
	48109	1	18	19	
CHELSEA	48118	451	125	576	576
CLINTON	49236	10	9	19	19
DEXTER	48130	2,552	859	3,411	3,411
MANCHESTER	48158	39	24	63	63
MILAN	48160	103	42	145	145
SALINE	48176	196	104	300	300
WHITMORE LAKE	48189	699	130	829	829
WILLIS	48191	122	31	153	153
YPSILANTI	48197	708	367	1,075	1,739
	48198	394	270	664	
<b>Grand Total</b>		<b>8,051</b>	<b>3,531</b>	<b>11,582</b>	<b>11,582</b>

**Oakland County:** During this reporting period, approximately 23 percent of barcode scans came from zip codes within Oakland County. Oakland County has eight zip codes where most of the zip code falls into one of SEMCOG's traffic analysis zones (TAZ) that has a high concentration of equity populations. These zip codes are highlighted in orange below. There is one zip code in Oakland County that has very high concentrations of equity populations, which is highlighted in red.

Place Name	Zip Code	Annual Pass	Daily Pass	Total Scans	Place Total
AUBURN HILLS	48326	413	275	688	688
BERKLEY	48072	203	144	347	347
BIRMINGHAM	48009	176	113	289	289
BLOOMFIELD HILLS	48301	118	80	198	674
	48302	161	93	254	
	48304	143	79	222	
CLARKSTON	48346	263	65	328	593
	48348	179	86	265	
CLAWSON	48017	198	104	302	302
COMMERCE TWP	48382	1,298	213	1,511	1,511
DAVISBURG	48350	161	36	197	197
FARMINGTON	48331	409	161	570	2,305
	48334	312	97	409	
	48335	478	175	653	
	48336	428	245	673	
FERNDALE	48220	275	205	480	480
FRANKLIN	48025	207	115	322	322
HAZEL PARK	48030	208	174	382	382
HIGHLAND	48356	660	83	743	1,627
	48357	775	109	884	
HOLLY	48442	277	166	443	443
HUNTINGTON WOODS	48070	80	60	140	140
KEEGO HARBOR	48320	18	24	42	42
LAKE ORION	48359	118	70	188	604
	48360	143	70	213	
	48362	106	97	203	
LEONARD	48367	81	41	122	122
MADISON HEIGHTS	48071	398	297	695	695
MILFORD	48380	2,352	154	2,506	6,618
	48381	3,959	153	4,112	
NEW HUDSON	48165	1,953	190	2,143	2,143
NOVI	48374	692	164	856	2,598
	48375	831	244	1075	
	48377	514	153	667	
OAK PARK	48237	179	204	383	383
OAKLAND	48363	168	90	258	258
ORTONVILLE	48462	49	33	82	82
OXFORD	48370	14	12	26	258
	48371	125	107	232	
PLEASANT RIDGE	48069	47	29	76	76

PONTIAC	48340	49	156	205	464
	48341	48	75	123	
	48342	29	107	136	
ROCHESTER	48306	1,430	345	1,775	7,295
	48307	2,412	739	3,151	
	48309	2,071	298	2,369	
ROYAL OAK	48067	444	206	650	1,388
	48073	471	267	738	
SOUTH LYON	48178	4,644	623	5,267	5,267
SOUTHFIELD	48033	64	104	168	996
	48034	112	110	222	
	48075	98	171	269	
	48076	155	182	337	
TROY	48083	473	303	776	2,952
	48084	347	182	529	
	48085	692	382	1074	
	48098	387	186	573	
WALLED LAKE	48390	705	249	954	954
WATERFORD	48327	474	172	646	1,729
	48328	342	241	583	
	48329	388	112	500	
WEST BLOOMFIELD	48322	312	170	482	1,132
	48323	198	118	316	
	48324	226	108	334	
WHITE LAKE	48383	2,591	698	3,289	5,158
	48386	1,553	316	1,869	
WIXOM	48393	597	187	784	784
<b>Grand Total</b>		<b>40,481</b>	<b>11,817</b>	<b>52,298</b>	<b>52,298</b>



**Wayne County:** During this reporting period, 23.5 percent (up from 22 percent last reporting period) of barcode scans came from zip codes within Wayne County. Wayne County has 13 zip codes where most of the zip code falls into one of SEMCOG's traffic analysis zones (TAZ) that has a high concentration of equity populations. These ZIP Codes are highlighted in orange below. There are 26 zip codes in Wayne County that have very high concentrations of equity populations, which are highlighted in red below.

Place Name	Zip Code	Annual Pass	Daily Pass	Total Scans	Place Total
ALLEN PARK	48101	491	230	721	721
BELLEVILLE	48111	7,425	1622	9,047	9047
CANTON	48187	684	425	1109	2,095
	48188	642	344	986	
DEARBORN	48120	70	92	162	1764
	48124	438	258	696	
	48126	255	474	729	
	48128	93	84	177	
DEARBORN HEIGHTS	48125	197	231	428	1045
	48127	273	344	617	
DETROIT	48201	35	74	109	4436
	48202	36	97	133	
	48204	10	105	115	
	48205	59	243	302	
	48206	19	83	102	
	48207	30	65	95	
	48208	8	49	57	
	48209	64	277	341	
	48210	68	288	356	
	48211	32	36	68	
	48213	13	84	97	
	48214	33	59	92	
	48215	26	76	102	
	48216	20	54	74	
	48217	6	52	58	
	48219	82	226	308	
	48221	89	194	283	
	48223	30	127	157	
	48224	102	202	304	
	48226	40	56	96	
	48227	45	165	210	
	48228	79	270	349	
	48234	29	179	208	
48235	31	231	262		
48238	30	122	152		
48242			6	6	
ECORSE	48229	51	70	121	121
FLAT ROCK	48134	4,074	968	5,042	5042
GARDEN CITY	48135	336	204	540	540
GROSSE ILE	48138	241	29	270	270
GROSSE POINTE	48230	143	75	218	725
	48236	364	143	507	
HAMTRAMCK	48212	249	590	839	839
HARPER WOODS	48225	230	128	358	358
HIGHLAND PARK	48203	53	126	179	179

INKSTER	48141	133	196	329	329
LINCOLN PARK	48146	481	283	764	764
LIVONIA	48150	302	216	518	1,958
	48152	426	261	687	
	48154	456	297	753	
MELVINDALE	48122	111	92	203	203
NEW BOSTON	48164	5,588	385	5,973	5973
NORTHVILLE	48167	726	214	940	1638
	48168	537	161	698	
PLYMOUTH	48170	552	192	744	744
REDFORD	48239	180	222	402	700
	48240	182	116	298	
RIVER ROUGE	48218	10	49	59	59
RIVERVIEW	48193	478	91	569	569
ROCKWOOD	48173	1491	498	1,989	1989
ROMULUS	48174	1623	533	2,156	2156
SOUTHGATE	48195	1,606	274	1,880	1880
TAYLOR	48180	1080	488	1568	1568
TRENTON	48183	2,109	819	2,928	2928
WAYNE	48184	448	138	586	586
WESTLAND	48185	400	323	723	1394
	48186	410	261	671	
WYANDOTTE	48192	552	182	734	734
<b>Grand Total</b>		<b>37,206</b>	<b>16,148</b>	<b>53,354</b>	<b>53,354</b>

**Macomb County:** During this reporting period, approximately 29.5 percent (down from 35 percent of barcode scans last reporting period) came from zip codes within Macomb County. Macomb County has seven zip codes where most of the zip codes falls into one of SEMCOG’s traffic analysis zones (TAZ) that has a high concentration of equity populations. These zip codes are highlighted in orange below. There are no zip codes in Macomb County that have very high concentrations of equity populations.

Place Name	Zip Code	Annual Pass	Daily Pass	Total Scans	Place Total
ARMADA	48005	281	57	338	338
CENTER LINE	48015	205	88	293	293
CLINTON TOWNSHIP	48035	2,967	544	3,511	8,107
	48036	1,817	315	2,132	
	48038	1,924	540	2,464	
EASTPOINTE	48021	734	292	1,026	1,026
FRASER	48026	736	209	945	945
HARRISON TOWNSHIP	48045	8,068	983	9,051	9,051
MACOMB	48042	1,989	543	2,532	6,277
	48044	2,558	1,187	3,745	
MOUNT CLEMENS	48043	960	211	1,171	1,171
NEW BALTIMORE	48047	1,163	480	1,643	2,559
	48051	668	248	916	
NEW HAVEN	48048	445	161	606	640
	48050	23	11	34	
RAY	48096	163	48	211	211
RICHMOND	48062	104	72	176	176
ROMEO	48065	573	288	861	861
ROSEVILLE	48066	1,825	947	2,772	2,772
SAINT CLAIR SHORES	48080	1,004	282	1,286	3,541
	48081	946	214	1,160	
	48082	958	137	1,095	
STERLING HEIGHTS	48310	1,139	727	1,866	7,139
	48312	1,220	779	1,999	
	48313	1,634	583	2,217	
	48314	751	306	1,057	
UTICA	48315	2,334	567	2,901	12,093
	48316	6,157	720	6,877	
	48317	1,796	519	2,315	
WARREN	48088	985	449	1,434	4,936
	48089	529	437	966	
	48091	316	454	770	
	48092	505	349	854	
	48093	646	266	912	
WASHINGTON	48094	3,945	344	4,289	4,887
	48095	490	108	598	
<b>Grand Total</b>		<b>52,558</b>	<b>14,465</b>	<b>67,023</b>	<b>67,023</b>



To: Board of Commissioners  
From: Nina Kelly, Chief of Planning and Development  
Project Title: Approval/Resolution – Accessible Nature Trail Development Project  
Project Type: Capital Improvement  
Location: Oakwoods Metropark  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the resolution and authorize staff to execute the Project Agreement for the Michigan Department of Natural Resources Land and Water Conservation Fund (LWCF) grant for the Oakwoods Metropark – Accessible Nature Trail Development project as recommended by Chief of Planning and Development Nina Kelly and staff.

**Fiscal Impact:** This is a reimbursement grant. The total cost of the project is estimated at \$248,000, of which the Metroparks will be responsible for 50 percent. This amounts to \$113,000 in cash outlay and \$11,000 in workforce labor for a match total of \$124,000. Staff recommends this be included in the capital project fund budget for 2022.

**Background:** In March 2019, the Board authorized staff to apply for a LWCF grant to assist in the development of an accessible nature trail at Oakwoods Metropark. The project was recommended for award in December 2019, and staff received the project agreement on July 28, 2021.

The project will comprise the following elements to redevelop the Split Log Trail, Oakwoods Nature Center, and associated amenities at the site:

- parking lot improvements with eight barrier free space additions in two locations
- resurfacing of the asphalt walkway from the parking lot to the Nature Center
- building entry and restroom modifications
- replacement of the existing Split Log Trail surface with an 8-foot wide compacted aggregate surface
- upgraded observation deck
- various amenities including picnic tables, drinking station, benches, bike rack, and dog waste station
- interpretive and locational signage

To move forward with accepting the grant funding, Metroparks staff must submit the executed Project Agreement, Resolution, Boundary Map and Property Description. The project must be completed by February 29, 2024, with final reimbursement request submitted no later than May 31, 2024.

**Attachments: Resolution  
Project Agreement**

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

**RESOLUTION APPROVING SUBMISSION OF GRANT AGREEMENT  
FOR OAKWOODS METROPARK – ACCESSIBLE NATURE TRAIL DEVELOPMENT PROJECT**

**Resolution No. 2021-07**

Motion made by: Commissioner \_\_\_\_\_

Supported by: Commissioner \_\_\_\_\_

**AT A MEETING OF THE BOARD OF COMMISSIONERS OF THE HURON-CLINTON METROPOLITAN AUTHORITY HELD ON AUGUST 12, 2021, THE BOARD ADOPTED THE FOLLOWING RESOLUTION:**

**WHEREAS** the Huron-Clinton Metropolitan Authority, does hereby accept the terms of the Agreement for NPS 26-01821 as received from the Michigan Department of Natural Resources (DEPARTMENT), and that 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 \$124,000 dollars (\$113,000 in cash outlay, \$11,000 in workforce labor) 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 August 12, 2021.

\_\_\_\_\_  
Shawn M. Athayde, Recording Secretary





LAND AND WATER CONSERVATION FUND
DEVELOPMENT PROJECT AGREEMENT

This information is required by authority of Part 5 of Act 451, P.A. 1994 as amended, to receive funds.
CFDA 15.916, Outdoor Recreation, Acquisition, Development & Planning

This Agreement is between Huron-Clinton Metropolitan Authority in the county of Livingston County, hereinafter referred to as the "GRANTEE," and the MICHIGAN DEPARTMENT OF NATURAL RESOURCES, an agency of the State of Michigan, hereinafter referred to as the "DEPARTMENT."

The purpose of this Agreement is to provide funding in exchange for completion of the project named below. This Agreement is subject to the terms and conditions specified herein.

Project Title: Oakwoods Metropark - Accessible Nature Trail Development Project Number: 26-01821

Amount of grant: \$124,000.00 50% PROJECT TOTAL: \$248,000.00

Amount of match: \$124,000.00 50%

Start Date: Date of Execution by DEPARTMENT End Date: 02/29/2024

As a precondition to the effectiveness of the Agreement, the GRANTEE is required to sign the Agreement and return it to the DEPARTMENT with the required attachments by 09/26/2021, or the Agreement may be cancelled by the DEPARTMENT. This Agreement is not effective until the GRANTEE has signed it, returned it, and the DEPARTMENT has signed it.

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.

GRANTEE

SIGNED

By [Print Name]:

Title:

Organization:

DUNS Number

SIGMA Vendor Number

SIGMA Address ID

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

SIGNED

By:

Grants Section Manager

Date of Execution by DEPARTMENT

1. This Agreement shall be administered on behalf of the DEPARTMENT by the Grants Management Section within the Finance and Operations Division. All notices, reports, documents, requests, actions or other communications required between the DEPARTMENT and the GRANTEE shall be submitted through the department's online grant management system, MiRecGrants, which is accessed through [www.michigan.gov/dnr-grants](http://www.michigan.gov/dnr-grants), unless otherwise instructed by the DEPARTMENT. Primary points of contact pertaining to this agreement shall be:

**GRANTEE CONTACT**

**DEPARTMENT CONTACT**

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Name/Title

---

Organization

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Address

---

Address

---

Telephone Number

---

E-mail Address

---

LWCF Grant Program Manager

---

Name/Title

---

Grants Management/DNR Finance & Operations

---

Organization

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525 W. Allegan Street, Lansing, MI 48933

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Address

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P.O. Box 30425, Lansing, MI 48909

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Address

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517-284-7268

---

Telephone Number

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[DNR-Grants@michigan.gov](mailto:DNR-Grants@michigan.gov)

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E-mail Address

2. The legal description of the project area, boundary map of the project area, the development grant application bearing the number **26-01821** uploaded to MiRecGrants and the Land and Water Conservation Fund Project Agreement General Provisions (APPENDIX D) are by this reference made part of this Agreement. The Agreement together with the referenced documents in MiRecGrants and Appendices constitute the entire Agreement between the parties and may be modified only in writing and executed in the same manner as the Agreement is executed.
3. Grant funds are made available to the GRANTEE through a grant by the SERVICE to the DEPARTMENT. Commitments made by the DEPARTMENT to the SERVICE in APPENDIX D are binding upon the GRANTEE. In such cases where a provision of this AGREEMENT is in conflict with APPENDIX D, the provisions in APPENDIX D will prevail.
4. The time period allowed for project completion is from **07/28/2021** through **02/29/2024**, hereinafter referred to as the "project period." Requests by the GRANTEE to extend the project period shall be submitted in MiRecGrants before the expiration of the project period. Extensions to the project period are at the discretion of the DEPARTMENT and may only be extended by an amendment to this Agreement.
5. The words "project area" shall mean the land and area described in the uploaded legal description and boundary map already referenced as being a part of the project file.
6. The words "project facilities" shall mean the following individual components, as further described in the application.

- Access Pathway 6' wide or more
- Bench(es)
- Bike Rack(s)
- Boardwalk
- Drinking Fountain(s)
- Landscaping
- Nature Center Building Improvements

Overlook or Observation Deck  
Paved ADA Parking Space(s)  
Pet Waste Station  
Picnic Table(s)  
Signage  
Permit Fees

7. The DEPARTMENT will:

- a. grant to the GRANTEE a sum of money equal to **Fifty Percent (50%) of Two Hundred and Forty-Eight Thousand dollars (\$248,000.00)**, which is the total eligible cost of construction of the project facilities including engineering costs, but in any event not to exceed **One Hundred and Twenty-Four Thousand dollars (\$124,000.00)**.
- b. grant these funds in the form of reimbursements to the GRANTEE for eligible costs and expenses incurred as follows:
  - i. Payments will be made on a reimbursement basis at **Fifty Percent (50%)** of the eligible expenses incurred by the GRANTEE up to 90% of the maximum reimbursement allowable under the grant.
  - ii. Reimbursement will be made only upon DEPARTMENT review and approval of a complete reimbursement request submitted by the GRANTEE through the MiRecGrants website which includes an expenditure list supported by documentation as required by the DEPARTMENT, including but not limited to copies of invoices, cancelled checks, EFTs and/or list of volunteer labor and/or force account time and attendance records.
  - iii. The DEPARTMENT shall conduct an audit of the project's financial records upon approval of the final reimbursement request by DEPARTMENT engineering staff. The DEPARTMENT may issue an audit report with no deductions or may find some costs ineligible for reimbursement.
  - iv. Final payment will be released pending satisfactory project completion as determined by the DEPARTMENT and completion of a satisfactory audit.

8. The GRANTEE will:

- a. immediately make available all funds required to complete the project and to **One Hundred and Twenty-Four Thousand dollars (\$124,000.00)** in local match. This sum represents **Fifty Percent (50%)** of the total eligible cost of construction including engineering costs. Any cost overruns incurred to complete the project facilities called for by this Agreement shall be the sole responsibility of the GRANTEE.
- b. with the exception of section 106 consultation and engineering costs as provided for in Section 9 incur no costs toward completion of the project facilities before execution of this Agreement and before DEPARTMENT approval of plans, specifications, and bid documents.
- c. complete construction of the project facilities to the satisfaction of the DEPARTMENT and to comply with the development project procedures set forth by the DEPARTMENT in completion of the project, including but not limited to the following:
  - i. Retain the services of a professional architect, landscape architect, or engineer, registered in the State of Michigan to serve as the GRANTEE'S Prime Professional. The Prime Professional shall prepare the plans, specifications and bid documents for the project and oversee project construction.
  - ii. Within 180 days of execution of this Agreement and before soliciting bids or quotes or incurring costs other than costs associated with the development of plans, specifications, or bid documents, provide the DEPARTMENT with plans, specifications, and bid documents for the project facilities, sealed by the GRANTEE'S Prime Professional.
  - iii. Upon DEPARTMENT approval of plans, specifications and bid documents, openly advertise and seek written bids for contracts for purchases or services with a value equal to or greater than \$50,000 and accept the lowest qualified bid as determined by the GRANTEE'S Prime Professional.
  - iv. Upon DEPARTMENT approval of plans, specifications and bid documents, solicit three (3) written quotes for contracts for purchases or services between \$5,000 and \$50,000 and accept the lowest qualified bid as determined by the GRANTEE'S Prime Professional.
  - v. Maintain detailed written records of the contracting processes used and to submit these records to the DEPARTMENT upon request.
  - vi. Complete construction to all applicable local, state and federal codes, as amended; including but not

limited to the federal Americans with Disabilities Act (ADA) of 2010, as amended; the Persons with Disabilities Civil Rights Act, Act 220 of 1976, as amended; the Playground Equipment Safety Act, P.A. 16 of 1997, as amended; the Utilization of Public Facilities by Physically Limited Act, P.A. 1 of 1966, as amended; the Elliott-Larsen Civil Rights Act, Act 453 of 1976, as amended; and the 2013 Access Board's Final Guidelines for Outdoor Developed Areas.

- vii. Bury all overhead utility lines.
  - viii. Correct any deficiencies discovered at the final inspection within 90 days of written notification by the DEPARTMENT. These corrections shall be made at the GRANTEE'S expense and are eligible for reimbursement at the discretion of the DEPARTMENT and only to the degree that the GRANTEE'S prior expenditures made toward completion of the project are less than the grant amount allowed under this Agreement.
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- d. operate the project facilities for a minimum of their useful life as determined by the DEPARTMENT , and as appropriate the SERVICE, to regulate the use thereof to the satisfaction of the DEPARTMENT , and as appropriate the SERVICE, and to appropriate such monies and/or provide such services as shall be necessary to provide such adequate maintenance.
  - e. provide to the DEPARTMENT for approval, a complete tariff schedule containing all charges to be assessed against the public utilizing the project area and/or any of the facilities constructed thereon, and to provide to the DEPARTMENT for approval, all amendments thereto before the effective date of such amendments . Membership or annual permit systems are prohibited, except to the extent that differences in admission and other fees may be instituted based on residence. Nonresident fees shall not exceed twice that charged residents. If no resident fees are charged, nonresident fees may not exceed the rate charged residents at other comparable state and local public recreation facilities
  - f. adopt ordinances and/or resolutions necessary to effectuate the provisions of this Agreement ; certify copies of all ordinances and/or resolutions adopted for these purposes shall be forwarded to the DEPARTMENT before the effective date thereof.
  - g. separately account for any revenues received from the project area which exceed the demonstrated operating costs and to reserve such surplus revenues for the future maintenance and/or expansion of the GRANTEE'S park and outdoor recreation program.
  - h. furnish the DEPARTMENT, upon request, detailed statements covering the annual operation of the project area and/or project facilities, including income and expenses and such other information the DEPARTMENT may reasonably require.
  - i. maintain the premises in such condition as to comply with all federal, state, and local laws which may be applicable and to make any and all payments required for all taxes, fees, or assessments legally imposed against the project area.
  - j. erect and maintain a sign on the park entry sign of the property which designates this project as one having been constructed with assistance from the Land and Water Conservation Fund . The size, color, and design of this sign shall be in accordance with DEPARTMENT and SERVICE specifications.
  - k. conduct a dedication/ribbon-cutting ceremony as soon as possible after the project is completed and the LWCF signs erected within the project area. At least 30 days prior to the dedication/ribbon-cutting ceremony, the DEPARTMENT must be notified in writing of the date, time, and location of the dedication/ribbon-cutting ceremony. GRANTEE shall provide notice of ceremony in the local media. Use of the grant program logo and a brief description of the program are strongly encouraged in public recreation brochures produced by the GRANTEE. At the discretion of the DEPARTMENT , the requirement to conduct a dedication/ribbon-cutting ceremony may be waived.
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9. Only eligible costs and expenses incurred toward completion of the project facilities during the project period shall be considered for reimbursement under the terms of this Agreement . Eligible section 106 consultation expenses incurred prior to the issue of this agreement and eligible engineering costs incurred toward completion of the project facilities in the six months preceding the project period are also eligible for reimbursement. Any costs and expenses incurred after the project period shall be the sole responsibility of the GRANTEE.
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10. To be eligible for reimbursement, the GRANTEE shall comply with DEPARTMENT requirements. At a minimum, the GRANTEE shall:
- a. Submit a progress report every 180 days during the project period.
  - b. Submit complete requests for partial reimbursement when the GRANTEE is eligible to request at least 25 percent of the grant amount and construction contracts have been executed or construction by force account labor has

begun.

- c. Submit a complete request for final reimbursement within **90 days of project completion and no later than 5/31/2024**. If the GRANTEE fails to submit a complete final request for reimbursement by this date, the DEPARTMENT may audit the project costs and expenses and make final payment based on documentation on file as of that date or may terminate this Agreement and require full repayment of grant funds by the GRANTEE .
11. During the project period, the GRANTEE shall obtain prior written authorization from the DEPARTMENT before adding, deleting or making a significant change to any of the project facilities as proposed. Approval of changes is solely at the discretion of the DEPARTMENT. Furthermore, following project completion, the GRANTEE shall obtain prior written authorization from the DEPARTMENT before implementing a change that significantly alters the project facilities as constructed and/or the project area, including but not limited to discontinuing use of a project facility or making a significant change in the recreational use of the project area. Changes pursuant to this Section may also require prior approval of the SERVICE.
  12. All project facilities constructed or purchased by the GRANTEE under this Agreement shall be placed and used at the project area and solely for the purposes specified in the application and this Agreement .
  13. The project area and all facilities provided thereon and the land and water access ways to the project facilities shall be open to the general public at all times on equal and reasonable terms. No individual shall be denied ingress or egress thereto or the use thereof on the basis of sex, race, color, religion, national origin, residence, age, or disability.
  14. Unless an exemption has been authorized by the DEPARTMENT , and as appropriate the SERVICE , pursuant to this Section, the GRANTEE hereby represents that it possesses fee simple title, free of all liens and encumbrances, to the project area. The fee simple title acquired shall not be subject to: (a) any possibility of reversion or right of entry for condition broken or any other executory limitation which may result in defeasance of title or (b) to any reservation or prior conveyance of coal, oil, gas, sand, gravel or other mineral interests.
  15. The GRANTEE shall not allow any encumbrance, lien, security interest, mortgage or any evidence of indebtedness to attach to or be perfected against the project area or project facilities included in this Agreement .
  16. None of the project area nor any of the project facilities constructed under this Agreement shall be wholly or partially conveyed during the life of the project, either in fee or otherwise or leased for a term of years or for any other period, nor shall there be any whole or partial transfer of the lease title, ownership, or right of maintenance or control by the GRANTEE except with the written approval and consent of the DEPARTMENT and the SERVICE .
  17. The assistance provided to the GRANTEE as a result of this Agreement is intended to have a lasting effect on the supply of outdoor recreation, scenic beauty sites, and recreation facilities beyond the financial contribution alone and permanently commits the project area to Michigan's outdoor recreation estate , therefore:
    - a. The GRANTEE agrees that the project area or any portion thereof will not be converted to other than public outdoor recreation use without prior written approval by the DEPARTMENT and the SERVICE and implementation of mitigation approved by the DEPARTMENT and the SERVICE, including, but not limited to, replacement with land of equal or greater recreational usefulness and market value.
    - b. Approval of a conversion shall be at the sole discretion of the DEPARTMENT and the SERVICE .
    - c. Before completion of the project, the GRANTEE, the DEPARTMENT and the SERVICE may mutually agree to alter the project area through an amendment to this Agreement to provide the most satisfactory public outdoor recreation area.
  18. Should title to the project area or any portion thereof be acquired from the GRANTEE by any other entity through exercise of the power of eminent domain, the GRANTEE agrees that the proceeds awarded to the GRANTEE shall be used to replace the lands and project facilities affected with outdoor recreation lands and project facilities of at least equal or greater market value, and of equal or greater usefulness and locality. The DEPARTMENT and the SERVICE shall approve such replacement only upon such conditions as it deems necessary to assure the substitution of GRANTEE of other outdoor recreation properties and project facilities of at least equal or greater market value and of equal or greater usefulness and location. Such replacement shall be subject to all the provisions of this Agreement .
  19. The GRANTEE acknowledges that:



- a. The GRANTEE has examined the project area and that it has found the property to be safe for public use or that action will be taken by the GRANTEE before beginning the project to assure safe use of the property by the public, and
  - b. The GRANTEE is solely responsible for development, operation, and maintenance of the project area and project facilities, and that responsibility for actions taken to develop, operate, or maintain the property is solely that of the GRANTEE, and
  - c. The DEPARTMENT'S involvement in the premises is limited solely to the making of a grant to assist the GRANTEE in developing the project site.
- 20.** The GRANTEE assures the DEPARTMENT that the proposed State-assisted action will not have a negative effect on the environment and, therefore, an Environmental Impact Statement is not required.
- 21.** The GRANTEE hereby acknowledges that this Agreement does not require the State of Michigan or the federal government to issue any permit required by law to construct the outdoor recreational project that is the subject of this Agreement . Such permits include, but are not limited to, permits to fill or otherwise occupy a floodplain, and permits required under Parts 301 and 303 of the Natural Resources and Environmental Protection Act, Act 451 of the Public Acts of 1994, as amended. It is the sole responsibility of the GRANTEE to determine what permits are required for the project, secure the needed permits and remain in compliance with such permits.
- 22.** Before the DEPARTMENT will approve plans, specifications, or bid documents; or give approval to the GRANTEE to advertise, seek quotes, or incur costs for this project, the GRANTEE must provide documentation to the DEPARTMENT that indicates either:
- a. It is reasonable for the GRANTEE to conclude, based on the advice of an environmental consultant, as appropriate, that no portion of the project area is a facility as defined in Part 201 of the Michigan Natural Resources and Environmental Protection Act, Act 451 of the Public Acts of 1994, as amended; or
  - b. If any portion of the project area is a facility, documentation that Department of Environment, Great Lakes and Energy-approved response actions have been or will be taken to make the site safe for its intended use within the project period, and that implementation and long-term maintenance of response actions will not hinder public outdoor recreation use and/or the resource protection values of the project area.
- 23.** If the DEPARTMENT determines that, based on contamination, the project area will not be made safe for the planned recreation use within the project period, or another date established by the DEPARTMENT in writing, or if the DEPARTMENT determines that the presence of contamination will reduce the overall usefulness of the property for public recreation and resource protection, the grant may be cancelled by the DEPARTMENT with no reimbursement made to the GRANTEE.
- 24.** The GRANTEE shall acquire and maintain, or cause to be acquired or maintained, insurance which will protect the GRANTEE from claims which may arise out of or result from the GRANTEE'S operations under this Agreement , whether performed by the GRANTEE, a subcontractor or anyone directly or indirectly employed by the GRANTEE, or anyone for whose acts any of them may be liable. Such insurance shall be with companies authorized to do business in the State of Michigan in such amounts and against such risks as are ordinarily carried by similar entities, including but not limited to public liability insurance, worker's compensation insurance or a program of self-insurance complying with the requirements of Michigan law. The GRANTEE shall provide evidence of such insurance to the DEPARTMENT at its request.
- 25.** Nothing in this Agreement shall be construed to impose any obligation upon the DEPARTMENT or the SERVICE to operate, maintain or provide funding for the operation and/or maintenance of any recreational facilities in the project area.
- 26.** The GRANTEE hereby represents that it will defend any suit brought against either party which involves title, ownership, or specific rights, including appurtenant riparian rights, of any lands connected with or affected by this project.
- 27.** The GRANTEE is responsible for the use and occupancy of the premises, the project area and the facilities thereon. The GRANTEE is responsible for the safety of all individuals who are invitees or licensees of the premises. The GRANTEE will defend all claims resulting from the use and occupancy of the premises, the project area and the facilities thereon. The DEPARTMENT is not responsible for the use and occupancy of the premises, the project area and the facilities thereon.
- 28.** Failure by the GRANTEE to comply any of the provisions of this Agreement shall constitute a material breach of this Agreement.

- 29.** Upon breach of the Agreement by the GRANTEE, the DEPARTMENT, in addition to any other remedy provided by law, may:
- a. Terminate this Agreement; and/or
  - b. Withhold and/or cancel future payments to the GRANTEE on any or all current recreation grant projects until the violation is resolved to the satisfaction of the DEPARTMENT; and/or
  - c. Withhold action on all pending and future grant applications submitted by the GRANTEE under the Land and Water Conservation Fund, the Michigan Natural Resources Trust Fund and the Recreation Passport Grant Program; and/or
  - d. Require the GRANTEE to pay penalties or perform other acts of mitigation or compensation as directed by the DEPARTMENT or the SERVICE; and/or
  - e. Require repayment of grant funds paid to GRANTEE; and/or
  - f. Require specific performance of the Agreement.
- 30.** This Agreement may be canceled by the DEPARTMENT, 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 DEPARTMENT and GRANTEE. The DEPARTMENT 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 DEPARTMENT and the DEPARTMENT will no longer be liable to pay the GRANTEE for any further charges to the grant.
- 31.** The GRANTEE agrees that the benefit to be derived by the State of Michigan from the full compliance by the GRANTEE with the terms of this Agreement is the preservation, protection and net increase in the quality of public recreation facilities and resources which are available to the people of the State and of the United States and such benefit exceeds to an immeasurable and unascertainable extent the amount of money furnished by the State of Michigan by way of assistance under the terms of this Agreement. The GRANTEE agrees that after final reimbursement has been made to the GRANTEE, repayment by the GRANTEE of grant funds received would be inadequate compensation to the State for any breach of this Agreement. The GRANTEE further agrees therefore, that the appropriate remedy in the event of a breach by the GRANTEE of this Agreement after final reimbursement has been made shall be the specific performance of this Agreement
- 32.** The GRANTEE shall return all grant money if the project area or project facilities are not constructed, operated or used in accordance with this Agreement.
- 33.** The GRANTEE agrees not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of religion, race, color, national origin, age, sex, sexual orientation, height, weight, marital status, partisan considerations, or a disability or genetic information that is unrelated to the person's ability to perform the duties of a particular job or position. The GRANTEE further agrees that any subcontract shall contain non-discrimination provisions which are not less stringent than this provision and binding upon any and all subcontractors. A breach of this covenant shall be regarded as a material breach of this Agreement.
- 34.** The DEPARTMENT shall terminate this Agreement and recover grant funds paid if the GRANTEE or any subcontractor, manufacturer, or supplier of the GRANTEE appears in the register compiled by the Michigan Department of Licensing and Regulatory Affairs pursuant to Public Act No. 278 of 1980.
- 35.** The GRANTEE may not assign or transfer any interest in this Agreement without prior written authorization of the DEPARTMENT, and as appropriate, the SERVICE.
- 36.** The rights of the DEPARTMENT under this Agreement shall continue in perpetuity.



## APPENDIX D

### LAND AND WATER CONSERVATION FUND PROJECT AGREEMENT GENERAL PROVISIONS

#### Part I - Definitions

- A. The term "NPS" or "Service" as used herein means the National Park Service, United States Department of the Interior.
- B. The term "Director" as used herein means the Director of the National Park Service, or any representative lawfully delegated the authority to act for such Director.
- C. The term "Manual" as used herein means the Land and Water Conservation Fund State Assistance Program Manual .
- D. The term "project" as used herein means a Land and Water Conservation Fund grant which is subject to the project agreement and/or its subsequent amendments.
- E. The term "State" as used herein means the State or Territory which is a party to the project agreement , and, where applicable, the political subdivision or public agency to which funds are to be transferred pursuant to this agreement. Wherever a term, condition, obligation, or requirement refers to the State, such term, condition, obligation, or requirement shall also apply to the recipient political subdivision or public agency, except where it is clear from the nature of the term, condition, obligation, or requirement that it is to apply solely to the State. For purposes of these provisions, the terms "State," "grantee," and "recipient" are deemed synonymous.
- F. The term "Secretary" as used herein means the Secretary of the Interior, or any representative lawfully delegated the authority to act for such Secretary.

#### Part II - Continuing Assurances

The parties to the project agreement specifically recognize that the Land and Water Conservation Fund project creates an obligation to maintain the property described in the project agreement and supporting application documentation consistent with the Land and Water Conservation Fund Act and the following requirements .

Further, it is the acknowledged intent of the parties hereto that recipients of assistance will use monies granted hereunder for the purposes of this program, and that assistance granted from the Fund will result in a net increase, commensurate at least with the Federal cost-share, in a participant's outdoor recreation.

It is intended by both parties hereto that assistance from the Fund will be added to, rather than replace or be substituted for, State and local outdoor recreation funds.

- A. The State agrees, as recipient of this assistance, that it will meet the following specific requirements and that it will further impose these requirements, and the terms of the project agreement, upon any political subdivision or public agency to which funds are transferred pursuant to the project agreement. The State also agrees that it shall be responsible for compliance with the terms of the project agreement by such a political subdivision or public agency and that failure by such political subdivision or public agency to so comply shall be deemed a failure by the State to comply with the terms of this agreement.
- B. The State agrees that the property described in the project agreement and the signed and dated project boundary map made part of that agreement is being acquired or developed with Land and Water Conservation Fund assistance , or is integral to such acquisition or development, and that, without the approval of the Secretary, it shall not be converted to other than public outdoor recreation use but shall be maintained in public outdoor recreation in perpetuity or for the term of the lease in the case of leased property. The Secretary shall approve such conversion only if it is found to be in accord with the then existing comprehensive statewide outdoor recreation plan and only upon such conditions deemed necessary to assure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location pursuant to Title 36 Part 59.3 of the *Code of Federal Regulations*. This replacement land becomes subject to Section 6(f)(3) protection. The approval of a conversion shall be at the sole discretion of the Secretary, or his designee.

Prior to the completion of this project, the State and the Director may mutually alter the area described in the project agreement and the signed and dated project boundary map to provide the most satisfactory public outdoor recreation unit, except that acquired parcels are afforded Section 6(f)(3) protection as Fund reimbursement is provided.

In the event the NPS provides Land and Water Conservation Fund assistance for the acquisition and /or development of property with full knowledge that the project is subject to reversionary rights and outstanding interests, conversion of said property to other than public outdoor recreation uses as a result of such right or interest being exercised will occur. In receipt of this approval, the State agrees to notify the Service of the potential conversion as soon as possible and to seek approval of replacement property in accord with the conditions set forth in these provisions and program regulations. The provisions of this paragraph are also applicable to: leased properties acquired and/or developed with Fund assistance where such lease is terminated prior to its full term due to the existence of provisions in such lease known and agreed to by the Service; and properties subject to other outstanding rights and interests that may result in a conversion when known and agreed to by the Service.

- C. The State agrees that the benefit to be derived by the United States from the full compliance by the State with the terms of this agreement is the preservation, protection, and the net increase in the quality of public outdoor recreation facilities and resources which are available to the people of the State and of the United States, and such benefit exceeds to an immeasurable and unascertainable extent the amount of money furnished by the United States by way of assistance under the terms of this agreement. The State agrees that payment by the State to the United States of an amount equal to the amount of assistance extended under this agreement by the United States would be inadequate compensation to the United States for any breach by the State of this agreement.

The State further agrees, therefore, that the appropriate remedy in the event of a breach by the State of this agreement shall be the specific performance of this agreement or the submission and approval of a conversion-of-use request as described in Section II.B above.

- D. The State agrees to comply with the policies and procedures set forth in Manual. Provisions of said Manual are incorporated into and made a part of the project agreement.
- E. The State agrees that the property and facilities described in the project agreement shall be operated and maintained as prescribed by Manual requirements and published post-completion compliance regulations ( Title 36 Part 59 of the *Code of Federal Regulations*).
- F. The State agrees that a permanent record shall be kept in the participant's public property records and available for public inspection to the effect that the property described in the scope of the project agreement , and the signed and dated project boundary map made part of that agreement, has been acquired or developed with Land and Water Conservation Fund assistance and that it cannot be converted to other than public outdoor recreation use without the written approval of the Secretary of the Interior.
- G. Nondiscrimination
1. By signing the LWCF agreement, the State certifies that it will comply with all Federal laws relating to nondiscrimination as outlined in the Civil Rights Assurance appearing at Part III -I herein.
  2. The State shall not discriminate against any person on the basis of residence, except to the extent that reasonable differences in admission or other fees may be maintained on the basis of residence as set forth in the Manual .

### **Part III - Project Assurances**

A. Applicable Federal Circulars

The State shall comply with applicable regulations, policies, guidelines and requirements as they relate to the application, acceptance and use of Federal funds for this federally assisted project, including:

-OMB Circular A-102, Uniform Administrative Requirements for Grants and Cooperative Agreements with State and Local Governments;

-43 CFR Part 12, Administrative and Audit Requirements and Cost Principles for Assistance Programs , Department of



the Interior;

-A-87, Cost Principles for State, Local, and Indian Tribal Governments; and

-A-133, Audits of States, Local Governments, and Non-Profit Organizations.

B. Project Application

1. The Application for Federal Assistance bearing the same project number as the agreement and associated documents is by this reference made a part of the agreement.
2. The State possesses legal authority to apply for the grant, and to finance and construct the proposed facilities. A resolution, motion or similar action has been duly adopted or passed authorizing the filing of the application, including all understandings and assurances contained herein, and directing and authorizing the person identified as the official representative of the State to act in connection with the application and to provide such additional information as may be required.
3. The State has the capability to finance the non-Federal share of the costs for the project. Sufficient funds will be available to assure effective operation and maintenance of the facilities acquired or developed by the project .

C. Project Execution

1. The project period shall begin with the date of approval of the project agreement or the effective date of a waiver of retroactivity and shall terminate at the end of the stated or amended project period unless the project is completed or terminated sooner in which event the project shall end on the date of completion or termination.
2. The State shall transfer to the project sponsor identified in the Application for Federal Assistance or the Description and Notification Form all funds granted hereunder except those reimbursed to the State to cover eligible administrative expenses.
3. The State will cause work on the project to be commenced within a reasonable time after receipt of notification that funds have been approved and assure that the project will be prosecuted to completion with reasonable diligence.
4. The State will require the facility to be designed to comply with the Architectural Barriers Act of 1968 (Public Law 90-480) and DOI Section 504 Regulations (43 CFR Part 17). The State will be responsible for conducting inspections to insure compliance with these specifications by the contractor.
5. The State shall secure completion of the work in accordance with approved construction plans and specifications, and shall secure compliance with all applicable Federal, State, and local laws and regulations.
6. In the event the project covered by the project agreement, cannot be completed in accordance with the plans and specifications for the project; the State shall bring the project to a point of recreational usefulness agreed upon by the State and the Director or his designee.
7. The State will provide for and maintain competent and adequate architectural/engineering supervision and inspection at the construction site to insure that the completed work conforms with the approved plans and specifications; that it will furnish progress reports and such other information as the NPS may require.
8. The State will comply with the terms of Title II and Title III, the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646), 94 Stat. 1894 (1970), and the applicable regulations and procedures implementing such Act for all real property acquisitions and where applicable shall assure that the Act has been complied with for property to be developed with assistance under the project agreement.
9. The State will comply with the provisions of: Executive Order 11988, relating to evaluation of flood hazards; Executive Order 11288, relating to the prevention, control, and abatement of water pollution, and Executive Order 11990 relating to the protection of wetlands.
10. The State will comply with the flood insurance purchase requirements of Section 102(a) of the Flood Disaster

Protection Act of 1973, Public Law 93-234, 87 Stat. 975, approved December 31, 1976. Section 102(a) requires the purchase of flood insurance in communities where such insurance is available, as a condition for the receipt of any Federal financial assistance for construction or acquisition purposes, for use in any area that has been identified as an area having special flood hazards by the Flood Insurance Administration of the Federal Emergency Management Agency. The phrase "Federal financial assistance" includes any form of loan, grant, guaranty, insurance payment, rebate, subsidy, disaster assistance loan or grant, or any other form of direct or indirect Federal assistance.

11. The State will assist the NPS in its compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (16 U.S.C. 470), Executive Order 11593, and the Archaeological and Historic Preservation Act of 1966 (16 U.S.C. 469a-1 et seq.) by (a) consulting with the State Historic Preservation Officer on the conduct of investigations, as necessary, to identify properties listed in or eligible for inclusion in the National Register of Historic Places that are subject to effects (see CFR Part 800.8) by the activity, and notifying the Federal grantor agency of the existence of any such properties, and by (b) complying with all requirements established by the Federal grantor agency to avoid or mitigate adverse effects upon such properties .
12. The State will comply with "Minority Business Enterprises" and "Women's Business Enterprises" pursuant to Executive Orders 11625 and 12138 as follows:
  - (1) Place minority and women business firms on bidder's mailing lists.
  - (2) Solicit these firms whenever they are potential sources of supplies, equipment, construction, or services.
  - (3) Where feasible, divide total requirements into smaller needs, and set delivery schedules that will encourage participation by these firms.
  - (4) The Department of the Interior is committed to the objectives of this policy and encourages all recipients of its grants and cooperative agreements to take affirmative steps to ensure such fairness .

The National Park Service Regional Offices will work closely with the States to ensure full compliance and that grant recipients take affirmative action in placing a fair share of purchases with minority business firms.

13. The State will comply with the intergovernmental review requirements of Executive Order 12372.

D. Construction Contracted for by the State Shall Meet the Following Requirements:

1. Contracts for construction shall comply with the provisions of 43 CFR Part 12 (Administrative and Audit Requirements and Cost Principles for Assistance Programs, Department of the Interior).
2. No grant or contract may be awarded by any grantee, subgrantee or contractor of any grantee or subgrantee to any party which has been debarred or suspended under Executive Order 12549. By signing the LWCF agreement, the State certifies that it will comply with debarment and suspension provisions appearing at Part III-J herein.

E. Retention and Custodial Requirements for Records

1. Financial records, supporting documents, statistical records, and all other records pertinent to this grant shall be retained in accordance with 43 CFR Part 12 for a period of three years; except the records shall be retained beyond the three-year period if audit findings have not been resolved.
2. The retention period starts from the date of the final expenditure report for the project.
3. State and local governments are authorized to substitute copies in lieu of original records.
4. The Secretary of the Interior and the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the State and local governments and their subgrantees which are pertinent to a specific project for the purpose of making audit, examination, excerpts and transcripts.

F. Project Termination

1. The Director may temporarily suspend Federal assistance under the project pending corrective action by the State or pending a decision to terminate the grant by the Service.
2. The State may unilaterally terminate the project at any time prior to the first payment on the project. After the initial payment, the project may be terminated, modified, or amended by the State only by mutual agreement.
3. The Director may terminate the project in whole, or in part, at any time before the date of completion, whenever it is determined that the grantee has failed to comply with the conditions of the grant. The Director will promptly notify the State in writing of the determination and the reasons for the termination, together with the effective date. Payments made to States or recoveries by the Service under projects terminated for cause shall be in accord with the legal rights and liabilities of the parties.
4. The Director or State may terminate grants in whole, or in part at any time before the date of completion, when both parties agree that the continuation of the project would not produce beneficial results commensurate with the further expenditure of funds. The two parties shall agree upon the termination conditions, including the effective date and, in the case of partial termination, the portion to be terminated. The grantee shall not incur new obligations for the terminated portion after the effective date, and shall cancel as many outstanding obligations as possible. The NPS may allow full credit to the State for the Federal share of the noncancelable obligations, properly incurred by the grantee prior to termination.
5. Termination either for cause or for convenience requires that the project in question be brought to a state of recreational usefulness agreed upon by the State and the Director or that all funds provided by the National Park Service be returned.

G. Lobbying with Appropriated Funds

The State must certify, for the award of grants exceeding \$100,000 in Federal assistance, that no Federally appropriated funds have been paid or will be paid, by or on behalf of the State, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding, extension, continuation, renewal, amendment, or modification of this grant. In compliance with Section 1352, title 31, U.S. Code, the State certifies, as follows:

*The undersigned certifies, to the best of his or her knowledge and belief, that:*

*(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.*

*(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.*

*(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.*

*This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.*

H. Provision of a Drug-Free Workplace

In compliance with the Drug-Free Workplace Act of 1988 (43 CFR Part 12, Subpart D), the State certifies, as follows:

*The grantee certifies that it will or continue to provide a drug-free workplace by:*

*(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;*

*(b) Establishing an ongoing drug-free awareness program to inform employees about:*

- (1) The dangers of drug abuse in the workplace;*
- (2) The grantee's policy of maintaining a drug-free workplace;*
- (3) Any available drug counseling, rehabilitation, and employee assistance programs; and*
- (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;*

*(c) Making it a requirement that each employee to be engaged in the performance of a grant be given a copy of the statement required by paragraph (a);*

*(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:*

- (1) Abide by the terms of the statement; and*
- (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;*

*(e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;*

*(f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted;*

- (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or*
- (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;*

*(g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).*

The State must include with its application for assistance a specification of the site(s) for the performance of work to be done in connection with the grant.

I. Civil Rights Assurance

*The State certifies that, as a condition to receiving any Federal assistance from the Department of the Interior, it will comply with all Federal laws relating to nondiscrimination. These laws include, but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d-1), which prohibits discrimination on the basis of race, color, or national origin; (b) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), which prohibits discrimination on the basis of handicap; (c) the Age Discrimination Act of 1975, as amended (42 U.S.C. 6101 et. seq.), which prohibits discrimination on the basis of age; and applicable regulatory requirements to the end that no person in the United States shall, on the grounds of race, color, national origin, handicap or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity conducted by the applicant. THE APPLICANT HEREBY GIVES ASSURANCE THAT it will immediately take any measures necessary to effectuate this agreement. THIS ASSURANCE shall apply to all aspects of the applicant's operations including those parts that have not received or benefited from Federal financial assistance.*

*If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant by the Department, this assurance shall obligate the Applicant, or in the case of any transfer of such property, any transferee, for the period during which it retains ownership or possession of the property. In all other cases, this assurance shall obligate the Applicant for the period during which the Federal financial assistance is extended to it by the Department.*

*THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Applicant by the Department, including installment payments after such date on account of applications for Federal financial assistance which were approved before such date.*

*The Applicant recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United State shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant, its successors, transferees, assignees, and subrecipients and the person whose signature appears on the grant agreement and who is authorized to sign on behalf of the Applicant.*

J. Debarment and Suspension

**Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions**

(1) *The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:*

*(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;*

*(b) Have not within a three-year period preceding this proposal 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; violation of Federal or State antitrust statutes or commission or embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statement, or receiving stolen property;*

*(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.*

(2) *Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.*

The State further agrees that it will include the clause "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions" appearing below in any agreement entered into with lower tier participants in the implementation of this grant. Department of Interior Form 1954 (DI-1954) may be used for this purpose.

**Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion - Lower Tier Covered Transactions**

(1) *The prospective lower tier participant certifies, by submission of this application that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.*

(2) *Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this application.*

Revised 10/01/2008



To: Board of Commissioners  
From: Nina Kelly, Chief of Planning and Development  
Project Title: Report – Green Infrastructure at Lake Erie and Wyandot Six Points Grant Proposal  
Location: Lake Erie Metropark  
Date: August 6, 2021

**Action Requested: Motion to Receive and file**

That the Board of Commissioners receive and file the report on the Green Infrastructure at Lake Erie Metropark and Wyandot Six Points grant proposal to the Great Lakes Restoration Initiative (GLRI) Nonpoint Source Runoff and Nutrient Reduction Projects program as recommended by Chief of Planning and Development Nina Kelly and staff.

**Background:** This project will implement seventeen site specific green infrastructure projects within Lake Erie Metropark to capture storm water and improve the water quality and resiliency of this important coastal wetland. As part of the development of the Stormwater Management Plan (approved in 2019, available at [Lake Erie Metropark Storm Water Management Plan](#), water quality issues in each park were identified through community outreach and GIS data analysis. Green infrastructure concept plans were then created to address these issues. Sites were initially chosen based on existing drainage patterns and infrastructure, land use, field reconnaissance, soil type, impact on water quality improvement, and input and approval from Metroparks staff. In our prioritization chart of well over a hundred identified projects, two of Lake Erie Metropark’s proposed naturalized swales are at the very top of the list, and the majority of Lake Erie’s proposed projects, that are identified in this application, are of very high priority to the entire Metroparks system.

Additionally, the Metroparks is proposing to address the removal of invasive species from areas identified by the Detroit River International Wildlife Refuge on the Six Points property owned and operated by the Wyandot of Anderdon, which is situated immediately adjacent to the park. The management of these areas for invasive species would continue over a period of two years, followed by restoration with native plants in the third year.

- Green infrastructure at Lake Erie Metropark
  - (16) Naturalized Swales totaling 197,892 square feet
  - (1) Rain Garden totaling 2,980 square feet, near the Marshlands Museum
- Invasive species removal and restoration at the Wyandot Six Points property
- Five (5) Interpretive signs for Lake Erie Metropark and the Six Points property

The total budget for these activities is estimated at \$483,500. There is no cash match requirement for this funding source, but Metroparks staff will develop estimates for staff time for implementation. If funded, the grant period would begin in late 2021 and end in December 2024.





To: Board of Commissioners  
From: Nina Kelly, Chief of Planning and Development  
Project Title: Report – Transit Connectivity Project  
Location: Lake St. Clair Metropark  
Date: August 5, 2021

**Action Requested: Motion to Receive and File**

That the Board of Commissioners receive and file the report on the Lake St. Clair Metropark Transit Connectivity Project as recommended by Chief of Planning and Development Nina Kelly and staff.

**Background:** An update on the Lake St. Clair Metropark Transit Connectivity Project will be presented at the meeting.



To: Board of Commissioners  
From: Nina Kelly, Chief of Planning and Development  
Project Title: Approval – 26 Mile Road Connector Trail Project Cost Sharing Agreement  
Project Type: Capital Improvement  
Location: Stony Creek Metropark  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the Cost Sharing Agreement in coordination with Macomb County for the 26 Mile Road Connector Trail project at Stony Creek Metropark as recommended by Chief of Planning and Development Nina Kelly and staff.

**Fiscal Impact:** The Macomb County Department of Roads applied for a Transportation Alternatives Program (TAP) grant for \$181,660 through the Michigan Department of Transportation for this project, and the construction estimate has since been revised to total \$227,660. A total of \$17,756 is currently budgeted in the Capital Project Fund to cover matching costs, meaning that an additional \$35,074 (which is inclusive of in-kind design and engineering costs) may be needed at the time a contract is awarded. The County anticipates bidding this project in by late fall 2021. When bids come in, a formal request to allocate any additional match funding will be brought before the Board of Commissioners.

**Background:** Metroparks staff have been working with the Macomb County Department of Roads since summer 2019 to develop a connector trail from 26 Mile Road to the hike-bike trail in Stony Creek Metropark. This 0.2-mile segment will serve as another connection point between the loop within Stony Creek and the Macomb Orchard Trail, accessible via 26 Mile Road.

The Metroparks is unable to apply for TAP funds directly, and so Macomb County offered to serve as the primary applicant. The Macomb County Department of Roads has provided a cost-sharing agreement to outline responsibilities for funding the construction of this new trail segment. Metroparks Engineering staff designed the project and, once built, the Metroparks will be responsible for the maintenance of this new asset.

**Attachment: Cost Sharing Agreement**

**COST SHARING AGREEMENT  
26 MILE CONNECTOR TRAIL**

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THIS AGREEMENT is entered into this 12<sup>th</sup> day of August 2021, by and between the County of Macomb ("MACOMB") and the Huron-Clinton Metropolitan Authority ("HCMA").

WHEREAS, MACOMB and HCMA are mutually desirous of constructing a non-motorized trail connection located on HCMA property and extending from Stony Creek Metropark to the 26 Mile Trail (PROJECT), and

WHEREAS, it is the mutual desire of HCMA and MACOMB that the PROJECT be completed as expeditiously as possible, and to accomplish this purpose it is appropriate for HCMA to share in the cost of the PROJECT, and

WHEREAS, it is mutually agreed that a portion of the PROJECT costs shall be borne by a Transportation Alternatives Program (TAP) Grant.

WHEREAS, it is further mutually agreed that HCMA and MACOMB, in accordance with Section 13(8) of Act 51 of the Public Acts of 1951, as amended, and after grant funds are applied, that HCMA shall pay for One Hundred Percent (100%) of all project costs, as outlined in Exhibit A, and

WHEREAS, it shall be understood that the PROJECT shall be constructed in accordance with the plans and specifications provided, and said construction shall conform to the current guidelines of the Federal Highway Administration and the Michigan Department of Transportation.

NOW, THEREFORE, COUNTY and HCMA agree to carry out this project under a single contract according to the following terms and conditions:

1. The project scope is:
  - Construction of a non-motorized trail connection consisting of 0.2 miles and extending on the north side of 26 Mile Road from the Stony Creek Metropark to the 26 Mile Trail
2. The work for this project shall be defined as, but not necessarily include:
  - Required material
  - Construction contract cost
  - Survey, engineering plans, testing and field staking
  - Overhead and fringe benefits
  - Right of way acquisition
  - Preliminary and construction engineering
  - Signing and pavement marking
  - Other labor, materials, etc. to provide a complete design for project
3. The following cost sharing proportions have been agreed to (Exhibit A):
  - HCMA share: One Hundred Percent (100%) of all project costs after grant funding is applied.
4. Funds provided by HCMA shall be paid in full to COUNTY prior to the start of construction.

5. COUNTY, upon completion of said project, will furnish HCMA with a statement of actual costs of the project and will remit all collected monies exceeding the total cost of the project including overhead and fringe benefits or collect any additional monies necessary to meet the total cost of the project.
6. Overhead and fringe benefits applied shall be at a rate as determined on an annual basis. This rate is subject to change annually based upon actual costs incurred from the prior year and shall be applied to those costs incurred for that particular period.
7. HCMA, COUNTY, the County of Macomb, their officers, agents, employees and consultants will be listed as additional insureds on the Contractor's insurance policy for general liability, automobile liability, excess coverage and worker's compensation.
8. COUNTY agrees to obtain authorization for additional expenditures beyond the limits of the Construction Contract from HCMA prior to committal of same.
9. HCMA and COUNTY agree that upon completion of PROJECT, HCMA shall retain jurisdiction, including all required maintenance, over the non-motorized trail constructed. It is expressly understood, that HCMA and COUNTY reserve the right to assign all or any portion or interest in this Agreement; if by doing so it is deemed in the best interest of the public.

[THIS SPACE LEFT INTENTIONALLY BLANK]

IN WITNESS WHEREOF, the parties hereto executed this Agreement on the date set forth above.

**WITNESS**

\_\_\_\_\_

**MACOMB COUNTY**

\_\_\_\_\_  
Mark F. Deldin  
Chief Deputy County Executive

**WITNESS**

\_\_\_\_\_

**HURON-CLINTON METROPOLITAN AUTHORITY**

\_\_\_\_\_  
Jaye Quadrozzi  
Chairperson

\_\_\_\_\_

\_\_\_\_\_  
Bernard Parker  
Vice Chair

**EXHIBIT A  
ESTIMATED COST – WORK ORDER #934 26  
MILE CONNECTOR TRAIL**

<b><u>WORK ORDER SUFFIX</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>AMOUNT</u></b>	<b><u>COST SHARE</u></b>
A	Preliminary Engineering	0	N/A
B/G	Right of Way Costs	0	N/A
C	Construction Engineering & Inspection (10%)	0	N/A
D	Sign & Pavement Markings	0	N/A
E	Construction Estimate (as bid)	\$227,660	100% HCMA
E	Administration Fee (3%)	6,830	100% HCMA
F	Design Contract & Testing Costs		
M	Signal Costs		
	Total Cost of Project	\$234,490	
	Less TAP Monies Expected Total	181,660	
	Cost to be paid by HCMA	\$52,830*	

***\*Please note that this amount will be due at the time of the execution and return of this agreement to the Department of Roads prior to the start of construction. Again, this is just an estimate and you will be responsible for your share of the actual costs incurred.***





To: Board of Commissioners  
From: Mike Henkel Chief of Engineering Services  
Project No: 900-21-024  
Project Title: Bids – As Needed Surveying Services  
Project Type: Professional Services  
Location: System Wide  
Date: August 6, 2021

Bids Opened: Wednesday August 4, 2021 at 2:00 p.m.

**Action Requested: Motion to Approve**

That the Board of Commissioners award as needed services per the Request for Proposal (RFP) 900-21-024 to the responsive, responsible bidders, for each of the three park districts as listed below as recommended by Chief of Engineering Services Mike Henkel and staff.

- Southern District – UMLOR, Alpine, PEA
- Western District – MEGA, NFE, HRC
- Eastern District – AEW, Fleis Vandenbrink, Giffels Webster

**Fiscal Impact:** Cost will be charged on an as needed basis with the associate project or scope of work at the proposed hourly rates and fees as submitted in the request for proposal. Contractors are not listed in any particular order. Hourly rates were similar between firms.

**Scope of Work:** The object for the RFP was to provide staff the opportunity to develop as list of three firms for each district to aid and support engineering staff in addressing a multitude of items and include any surveying to Metroparks properties, gathering of data to aid in the development of capital and major maintenance projects, GIS data collection, property boundary surveys, construction layout, writing and filing of property descriptions for easements and grant applications, land sales and procurement, review of existing easements and land records to verify existing property boundaries, delineate property lines for encroachment issues, collection of topographical data and line work for inclusion into AutoCAD drawings, collection of as built information, provide miscellaneous survey tasks as requested, attend meetings as required, and to work with multiple departments to accomplish stated project goals and objectives.

Work will be under the supervision of a licensed registered land surveyor in the state of Michigan. The firms shall have the ability to respond to requests for services within a reasonable amount of time as determined by the Metroparks. Also, the Metroparks may procure services through separate firms at any time. All documents and data prepared by the consultant shall become the property of the Metroparks without any limits or restrictions on their use.

The Metroparks reserves the right to terminate and/or cancel the agreement (or any part thereof) at any time during the term, any renewal, or any extension of the agreement, upon thirty (30) days written notice to the consultant, for any reason, including convenience without incurring obligation or penalty of any kind.

**Background:** The Metroparks has maintained an inhouse survey crew that has aided in its daily function and development over the years. The existing Metroparks crew is comprised of a licensed registered Survey Chief and an Engineering Technician. Due to upcoming retirements, both positions will be vacant. Staff will evaluate the cost and efficiency of using outside services moving forward.

All the firms were qualified to perform the work. The hourly rates and charges were similar for the firms and are good for a two-year period. Many of the firms have multiple offices located throughout southeast Michigan which can provide services. The following firms submitted responses and are listed in no particular order.

- 1. AEW ..... Shelby Township
- 2. Giffels Webster ..... Detroit
- 3. NFE ..... Pontiac
- 4. UMLOR ..... Wixom
- 5. HRC ..... Bloomfield Hills
- 6. MEGA ..... Fowlerville
- 7. PEA ..... Brighton
- 8. ALPINE ..... Novi
- 9. Fleis & Vandenbrink ..... Grand Blanc

*This project was reported and publicly advertised in the following construction reporting outlets: Michigan Inter-governmental trade network, MITN.*



To: Board of Commissioners  
From: Mike Henkel Chief of Engineering Services  
Project No: P-900-21-1150  
Project Title: Dam Study  
Subject: Approval – Dam Study Request  
Location: Stony Creek, Kensington, Flat Rock  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners (1) approve the proposal from GZA dated July 1, 2021 in the amount of \$165,200; and (2) approve a transfer of \$125,200 from the Kensington Major Maintenance Unallocated account to cover the cost of the project as recommended by Mike Henkel Chief of Engineering Services and staff

**Fiscal Impact:** \$40,000 was included in the Engineering Professional Services account in the 2021 budget to start the project. Additional funding is available in the Kensington Major Maintenance Unallocated account due to rescheduling a trail project originally budgeted for 2021.

**Background:** The purpose of this project is to accomplish two main categories of work. The first is to develop and implement an in-depth engineering investigation of the dam components and structure. The second is to look at possible modes of failure, update existing inundation maps, working with state, local, and county agencies to facilitate hazard mitigation planning and response. The items of work for the proposal are outlined below. The estimated timeline to complete the work is two years from approval.

Since the original construction of the Metroparks dams there has been a lot development on the downstream side of the structures. While the Metroparks dams have been maintained in good condition, it is out of an abundance of caution that staff looks to take an in depth look at the structures and facilitate the use of new technology to develop and work with other agencies to update the existing inundation maps, emergency management plans, and develop hazard mitigation coordination associated with each of the locations.

This will be a multi-year effort that will involve state and local agencies. In order to move this work forward staff publicly published a request for proposal to look for qualified experienced firms. Three firms responded to staff's request – GZA (Livonia, MI), DLZ (Waterford, MI), and Geosyntec (Ann Arbor, MI). After reviewing their submitted material, staff held a meeting with GZA to verify the project scope, experience, and capability of the firm to address the goals and objectives of the work.

GZA is a full-service firm and was founded in 1964. GZA employs in-house engineers, scientists, planners, and technical specialists that can address community outreach, emergency preparedness, permitting, and engineering expertise. Their dam experience has been primarily in the Midwest and northeast.

## ***Proposed Items of Work***

### **Category 1: Evaluation of existing dams**

The primary focus of this category is to establish existing conditions and to assist the Metroparks in developing a plan for completing any necessary actions resulting from a thorough evaluation of four dams.

- Review all historical drawings, past projects and work documentation
- Work with Metroparks staff to develop drawings and specifications for a project to provide a detailed inspection of structural components and controls.
- Apply for all necessary permits in conjunction with the Metroparks necessary to facilitate inspection work.
- Provide inspection services as identified in the drawing and specifications developed previously.
- Provide a final report on all findings, to include:
  - Summary report, cost estimate, and priority ranking for any proposed items of work to be addressed
  - Drawings and specifications to facilitate any items of work to be addressed
  - Realistic timeline for completing any items of work to be addressed
  - Recommend and develop a template for future evaluations
- Develop project documentation to address report findings
- Provide engineering oversight services in conjunction with Metroparks staff to complete identified work from project to address report findings
- Meet with Metroparks's staff as necessary to complete work

### **Category 2: Development of updated inundation maps and scenarios for different failure modes and response options**

The primary focus of this category of work is to develop updated inundation studies for the four dams, which look at multiple failure modes and identify impacts to the environment and downstream communities. The vendor will work with the Metroparks, local, and state agencies to evaluate and provide recommendations in coordination with all agencies in the following areas:

- Review of multiple failure modes and resulting inundation and the effects of such scenarios.
- Help facilitate and formulate hazard mitigation plans with the Metroparks, local, and state agencies to identify response actions, warning systems and evacuation routes.
- Provide cost estimates and a prioritized list of response actions, equipment and implementation components.
- Provide realistic recommended timelines for implementation.
- Review current set of Dam Emergency Action Plans (based on state-identified criteria) and provide a revised set of Dam Emergency Action Plans based on any recommended improvements.
- Provide a revised checklist of recommended items (including frequency) for onsite inspections for the owner to complete.

## Metroparks Dams

Regulated dams are inspected at frequency that is based on the hazard classification. **High** hazard dams are required to have inspections every three years, **significant** every four years, and low every five years. The result of those inspection assigns a condition rating based on the inspection as satisfactory, fair, poor, unsatisfactory or not rated. The last inspections conducted for the dams at Stony Creek (2020), Kent Lake (2019) were given a satisfactory assessment and Flat Rock (2020) fair.

The Metroparks owns and operates four regulated dams. Dams are regulated if they are over six feet in height and impound more than five acres during a flood. Dams are classified as high hazard, significant hazard, low hazard, and not classified. The upper and lower dams at Stony Creek, constructed in 1961, and the Flat Rock dam, constructed in 1924, are classified as having a high hazard potential. The Kent Lake dam, constructed in 1946, is classified as a significant hazard potential.

The classification ratings are based on the following general guidelines.

### ***Dam Hazard Classifications:***

***High Hazard:*** Dams assigned the high hazard potential classification are those where failure or mis-operation will probably cause loss of human life.

***Significant Hazard:*** Dams assigned the significant hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be in areas with population and significant infrastructure.

***Low Hazard:*** Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.

## Condition Assessments

### **Satisfactory**

- No existing or potential dam safety deficiencies are recognized.
- Acceptable performance is expected under all loading conditions.

### **Fair**

- No existing dam safety deficiencies are recognized for normal loading conditions.
- Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency.

### **Poor**

- A dam safety deficiency is recognized for loading conditions that may realistically occur.
- Remedial action or further investigations and studies are necessary to determine risk.

### **Unsatisfactory**

- A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

### **Not rated**

- The dam has not been inspected, is not under state jurisdiction, or the dam has not been inspected, is not under State jurisdiction, or has been inspected but, for whatever reason, has not been rated.

## Dam Details

### Upper Stony Lake Dam

The Upper Stony Lake Dam was constructed in 1961 to create a recreational lake. The dam is owned by the Metroparks and is located in Stony Creek Metropark. It consists of a 1,550-foot long earthen embankment and a 56-foot wide concrete overflow spillway. The embankment has an approximate crest width of 42 feet and approximate upstream and downstream slopes of three horizontal to one vertical (3H:1V). Impoundment levels are controlled by the 56-foot wide fixed crest principal spillway. Drawdown of the impoundment is achieved via two 24-inch drawdown gates located in each spillway abutment. The dam has a structural height of 24 feet, a hydraulic height of 19.1 feet, and maintains 6.6-feet of head with 8 feet of freeboard, creating a 90-acre impoundment under normal flow conditions.



*Upper Stony Lake Dam*



### **Lower Stony Lake Dam**

The Lower Stony Lake Dam was constructed in 1961 to create a recreational lake. The dam is owned by the Metroparks and is located in Stony Creek Metropark. The dam consists of a 3,500-foot long earthen embankment and a 60-foot wide gated principal spillway. The embankment has an approximate crest width of 42 feet and approximate upstream and downstream slopes of three horizontal to one vertical (3H:1V). Impoundment levels are controlled by a 60-foot wide drum gate located within the principal spillway structure.

Drawdown below the drum gate sill elevation is achieved via two 30-inch diameter drawdown gates located in concrete spillway abutments. The dam has a structural height of 32 feet, a hydraulic height of 30.1 feet, and maintains 26 feet of head with four-feet of freeboard, creating a 590-acre impoundment under normal flow conditions.



*Lower Stony Lake Dam*

## **Flat Rock Dam**

The current Flat Rock Dam was constructed in 1924 by Henry Ford to generate hydroelectric power. The dam consists of a 492-foot wide concrete spillway with an abandoned lock system immediately to the right of the spillway. The abandoned locks now serve to control flow to a fish ladder constructed downstream of the head gates. The former powerhouse structure is located approximately 250 feet right of the spillway.

The former powerhouse building now houses Flat Rock Metal, Incorporated, a local metal manufacturing plant. The dam has a structural height of 16.5 feet, a hydraulic height of 15.9 feet, and maintains nine feet of head with 4.5 feet of freeboard, creating a 188-acre impoundment under normal flow conditions. The dam is flanked by very short earthen abutments at each end.



*Flat Rock Dam*



## **Kent Lake Dam**

The Kent Lake Dam was originally constructed in 1946. The dam is owned by the Metroparks and is located in the Island Lake State Recreation Area. The dam consists of 102-foot long right and 102-foot long left earthen embankments, and a 90-foot wide principal spillway structure. The earthen embankments have approximate crest widths of 20 feet, upstream slopes of 3.0 horizontal to 1 vertical (3H:1V), and downstream slopes of 2H:1V. The principal spillway consists of a 90-foot wide concrete overflow section with a 48-inch diameter, gated, reinforced concrete pipe (RCP) drawdown structure located within the right abutment.

Lake levels are maintained via a 90-foot wide drum gate located along the principal spillway overflow section. The drum gate is controlled via a valve house located at the right end of the overflow section. The dam has a structural height of 20 feet and a hydraulic height of 17.7 feet. It maintains approximately 13 feet of head, creating a 1,050-acre impoundment under normal flow conditions.



*Kent Lake Dam*

**Attachment: GZA Proposal**



TECHNICAL & COST PROPOSAL  
DAM INUNDATION STUDY, PROJECT NO. P-900-21-1150

July 1, 2021



Submitted by: GZA Michigan, Inc. *Known for excellence. Built on trust.*  
19500 Victor Parkway, Suite 300, Livonia, MI 48152 | 734.462.0207

**HURON-CLINTON METROPOLITAN AUTHORITY  
NOTICE OF REQUEST FOR PROPOSALS (RFP)**

**Design Project Title: Dam Inundation Study**

**Park Name:** Huron-Clinton Metroparks Administrative Office  
**Park Address:** 13000 High Ridge Drive, Brighton MI 48114  
**RFP No.:** P-900-21-1150  
**Issue Date:** June 7, 2021  
**Response Date:** June 21, 2021  
**PROPOSAL DUE TIME:** By 2:00 PM (local time)

**LOCATION:** Electronic pdf proposals to [engineering.bids@metroparks.com](mailto:engineering.bids@metroparks.com) will be received by the Huron-Clinton Metropolitan Authority  
Engineering Department  
13000 High Ridge Drive  
Brighton, Michigan 48114  
(810) 227-2757

**DESCRIPTION:** The Huron-Clinton Metropolitan Authority is issuing a Request for Proposal (RFP) to qualified professional consulting firms to perform services as detailed in Attachment A. Statement of Work.

**INDEX:** Included in this RFP are the following:

- RFP Form (this form)
  - Attachment A – Statement of Work
  - Services Agreement
  - RFP Proposal cost sheet
  - Dam Information Inspection reports, Kensington, Stony, and Flat Rock
  - Park Location Map
  - Park Map
- A copy of the complete RFP is available from the Michigan Inter-governmental Trade Network (MITN) website: [www.mitn.info](http://www.mitn.info)
- A copy of the complete RFP has been provided to qualified professional consulting firms

Proposers responding to this RFP are strongly encouraged to carefully read the entire RFP. Direct inquiries regarding this RFP to Mike Henkel, Chief of Engineering Services can be emailed to [mike.henkel@metroparks.com](mailto:mike.henkel@metroparks.com) with the subject line of **dam study**.

This Proposal is Offered By: Name: GZA of Michigan, Inc.  
Address: 19500 Victor Parkway, Suite 300  
City, State: Livonia, MI Zip: 48152  
Phone: 734-779-2400 Email: walter.kosinski@gza.com





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# PART II | COST PROPOSAL

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## COST PROPOSAL | DAM INUNDATION STUDY, P-900-21-1150

INTRODUCTION AND STATEMENT REGARDING PROPOSED BUDGET

SERVICE AGREEMENT

STANDARD COST FORM.....Appended

GZA SCHEDULE OF FEES.....Appended



## PART I | TECHNICAL PROPOSAL & QUALIFICATIONS



## SECTION A | GENERAL INFORMATION & QUALIFICATIONS



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# SECTION A | GENERAL INFORMATION & QUALIFICATIONS

## COLLABORATIVE TEAM APPROACH

GZA GeoEnvironmental, Inc. (GZA) will serve as your prime consultant and will be responsible for all deliverables associated with this project. Working along the Great Lakes in the Midwest and in the Atlantic Ocean in New England and the East Coast, we possess a holistic approach to dam safety and compliance with local, state, and federal dam safety guidelines.

We have in-house staff available to fulfill the various components needed for a successful project completion including complementary services such as geospatial/geographic information systems, emergency management preparedness, community outreach, and environmental permitting, to name a few.


*Over the past 50 years, GZA has provided dam-related services on more than 1,000 dams and water control structures across the United States.*

## A BRIEF HISTORY

Founded in 1964 as Goldberg-Zoino & Associates, Inc., a geotechnical and foundations specialty consultant, GZA has grown into a full-service company, providing its clients with highly diversified technical services supporting our core practice areas. GZA employs nearly 700 engineers, scientists, planners, and technical specialists in 30 offices. As a mid-size engineering firm, we feel we are large enough to service you, yet small enough so we can get to know you. We like to build relationships with our clients and will work hard to earn your trust and complete satisfaction.

GZA is an employee-owned firm with staff motivated to propel the firm forward, seeking integrated, complex, and interesting projects that underscore a commitment to client satisfaction, environmental stewardship, and best practices, engineering, and construction.

FOUNDED IN  
**1964**



BY GOLDBERG-ZOINO  
& ASSOCIATES, INC.

OVER  
**75,000**



PROJECTS IN ALL 50 STATES  
& 21 COUNTRIES

**30 OFFICE  
LOCATIONS**



ACROSS **15 STATES**

**\$150 MILLION**



IN GROSS ANNUAL REVENUES  
AND GROWING!

**SAFETY IS  
OUR  
NO. 1  
PRIORITY**



RESULTING IN  
**7 MILLION**  
SAFE HOURS WORKED





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GZA's team offers a unique combination of dam engineering experience, hydrologic and hydraulic engineering expertise, staffing capacity, and local presence to provide the Huron-Clinton Metropolitan Authority (hereinafter "**Authority**"), with superior service on this project. GZA has completed site inspections, investigations, design, construction, and evaluation of more than 1,000 dams and water control structures throughout the United States over the past 50 years.

## KNOWN FOR EXCELLENCE

GZA's staff, with diverse technical backgrounds, has demonstrated that it has the resources, flexibility and technical and project management expertise needed to manage and complete large and small projects -- regardless of complexity -- within the broad range of services. GZA is recognized for its expertise in geotechnical and coastal environmental engineering design, water infrastructure design, construction management, and environmental compliance.

## BUILT ON TRUST

GZA appreciates and understands the need to efficiently and cost effectively deliver both routine and highly sensitive projects. GZA has proven its ability to adjust to municipal needs and provide the appropriate mix of personnel and attention to meet both the technical and granting agency needs. Our team members will hold your needs paramount, acting as your responsible advocate and operating seamlessly as an extension of your own staff. We pride ourselves on being responsive to our clients' concerns and in our proven ability to draw from our broad technical expertise, management skills, and varied project experience.

GZA will seek ways to conduct your project economically and efficiently through innovation, current, and/or sustainable technologies. We also recognize the importance of assigning a stable staff to maintain continuity over the duration of the project. Therefore, once committed, key personnel will be available throughout the lifecycle of the project. GZA is an employee-owned firm with motivated and dedicated staff that propels the firm forward by solving complex issues using innovative approaches on projects while demonstrating a commitment to client satisfaction, environmental stewardship and sustainability, and best practices in science, engineering, and construction.

## ONE-COMPANY, ONE-TEAM PHILOSOPHY

GZA maintains a strong "one-company" philosophy. Personnel and resources are shared among different offices where and when they are needed, ensuring clients access to **the most qualified team** to work on their projects.

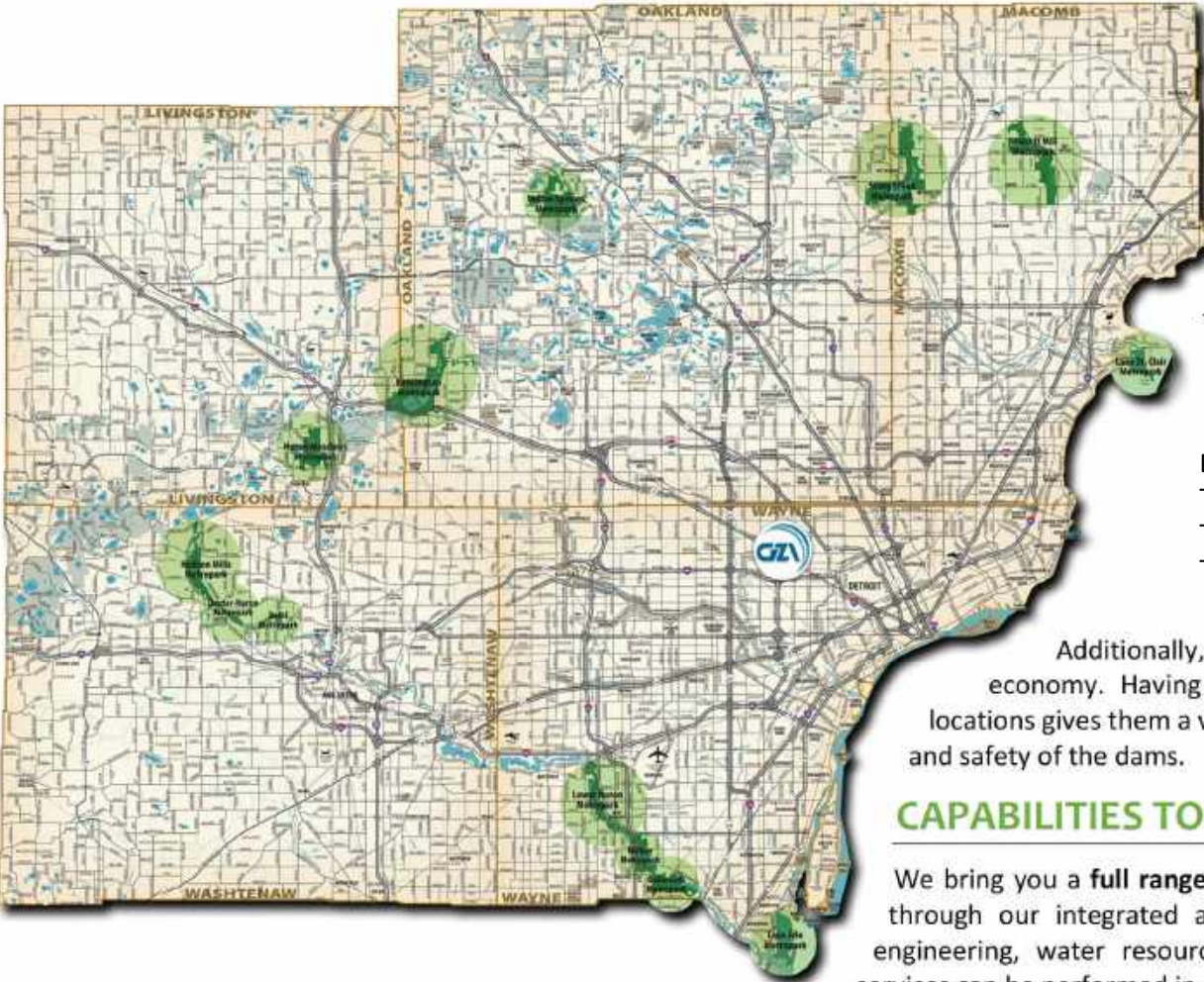
GZA experts are trained across disciplines, which ultimately benefits each client through the knowledge and experience gained from its entire staff. Resources are in-house and available for every project, at any time.

With the ability to manage unpredictable situations, remain nimble, and mobilize quickly, GZA responds to client inquiries with urgency, sensitivity, knowledge, and value, while remaining mindful of project costs, schedule, and quality.

Using our intercompany network, projects are seamlessly managed and completed regardless of office location. Technical staff from anywhere in the company with specific experience or technical training can be provided to a project to deliver exceptional technical support.



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## CENTRALLY LOCATED TO SERVE ALL METROPARKS

GZA maintains offices in both Livonia and Grand Rapids, Michigan. Our Livonia office, located in Wayne County, provides the ability to be responsive to all three MetroParks (and four dams).

Through our geographic location, staff members have existing relationships with regulatory agencies and regional stakeholders.

Driving Distance to Project Sites:

To Stony Creek MetroPark	50 Minutes
To Oakwood MetroPark	30 Minutes
To Kensington MetroPark	25 Minutes

Additionally, GZA is a proud contributor to the state and local economy. Having staff who live and work within the MetroPark locations gives them a vested interest in your project and the sustainability and safety of the dams.

## CAPABILITIES TO PERFORM REQUIRED SERVICES

We bring you a **full range** of technical expertise and cost-effective solutions through our integrated approach to dam and levee safety, geotechnical engineering, water resources, civil engineering, and natural resources. All services can be performed in-house.

## VISUAL INSPECTIONS

Our visual inspections combine a review of available information and actual field conditions to generate a real-time evaluation of a dam/levee's condition and identification of dam/levee safety and maintenance needs.





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A GZA field reconnaissance effort for a dam safety or levee inspection is always performed by a Registered Professional Engineer. We typically utilize a team of two engineers for efficiency and safety. During the field visit, notes are taken on the standard checklist, digital photos are taken, and a site sketch is prepared.

Our reports present information on the physical characteristics of the dam/levee and any deficiencies observed in the various components utilizing the report format, checklists, etc., in accordance with the specific regulatory agency's requirements. The main goals of our inspection reports are:

- 1) document the condition of the structure; and,
- 2) present our recommendations for improving safety, maintenance, and operability.

Expertise:

- ▶ Rope access inspections
- ▶ Remotely operated vehicle (ROV) inspections
- ▶ Dive inspections
- ▶ State regulatory dam safety inspections
- ▶ FERC Part 12 safety inspections
- ▶ USACE periodic levee inspections

## ENGINEERING EVALUATIONS AND ASSESSMENTS

Engineering evaluations are performed to evaluate hydrologic, hydraulic, geotechnical, and structural elements of the dam to determine if the structure is "compliant" or if remedial measures are required.

Dam and levee safety engineering evaluations are typically identified during our visual inspections. GZA's dam and levee safety engineers are well-versed in all aspects of hydrologic and hydraulic (H&H) analyses, geotechnical and structural evaluations, and gates and valves assessments. Our engineering evaluations are performed to determine if the dam/levee complies with current regulatory requirements and/or generally accepted dam/levee safety guidelines. We are very familiar with the state and federal dam safety regulations as well as dam/levee safety design guidelines published by the USACE, FERC and USBR.

Expertise:

- ▶ Hydrologic & hydraulic analyses
- ▶ Geotechnical engineering analyses
- ▶ Structural engineering analyses
- ▶ Gates and valve evaluations
- ▶ Risk and reliability evaluations

### DAM ENGINEERING SERVICES

GZA offers a myriad of technical services related to dam design, removal/demo, and dam safety.

- Visual Inspections
- Detailed Field Inspections including Underwater Diving and Remote Operating Vehicle (ROV) Observations
- Subsurface Explorations; In-situ Permeability and Packer Testing; Geophysical Testing
- Instrumentation Installation (including Observation Wells and Piezometers)
- Seepage and Slope Stability Analysis for Earth Embankment and Gravity Stability Analysis for Concrete Dams and Spillways
- Structural Engineering Assessment and Design, including Repair of Concrete and Masonry Gravity Structures
- Hydrologic and Hydraulic Assessment of Design Floods, including PMF, and Analysis of Spillway Capacity and Outlet Structures
- Evaluation of Gates and Valves of Outlet Works, including Replacement/Rehabilitation of Sluice Gates, Gatehouses, Piping and Appurtenances.
- Executing and Facilitating Potential Failure Mode Analyses (PFMAs)
- Development of Final Construction Drawings and Technical Specification for Dam Rehabilitation
- Environmental Permitting Support
- Engineering Services during Construction, including Resident Inspection Services
- **Emergency Action Plan (EAP) Preparation and Updates, including Dam Failure Analyses, Inundation Studies and Inundation Mapping Preparation**
- Operation & Maintenance (O&M Plans)
- Inspection Training for Dam Owners
- Evaluation and Retrofit Upgrades to Existing and Proposed Hydroelectric Facilities
- Capital Planning/Dam Repair Prioritization
- Peer Review of Analyses, Reports and Designs

## DESIGN & CONSTRUCTION SERVICES

GZA’s design experience includes remediation and rehabilitation of earthen, stone masonry, timber and concrete dams and earthen levees and concrete floodwalls.



Utilizing the results of our visual inspections and engineering evaluations, GZA's dam and levee safety engineers perform comprehensive design services for our dam and levee clients. We routinely expand our engineering evaluations to the design phase of the project during a preliminary design phase where alternatives are developed and evaluated. The preferred alternatives are chosen in a collaborative manner with our clients in a way that accounts for many factors, which include safety, cost, schedule, operations, and maintenance considerations.

Our design packages vary with the size and scale of the project, typically ranging from a limited number of drawings with construction notes to a comprehensive design that involves 30%,60%, 90% and 100% design plans, specifications, costs estimates and construction schedule submittals, followed by complete bid support services.

Our involvement during construction ranges from part-time construction observation services during critical phases of the work to complete construction administration services including full time resident engineering, submittal review, RFI response, pay requisition review and record plan development.

### Expertise:

- ▶ Tree Removal
- ▶ Riprap
- ▶ Toe/Blanket Drains
- ▶ Spillway Augmentation
- ▶ Overtopping & Scour Protection
- ▶ Low-Level Outlet Expansion
- ▶ Stability Berms
- ▶ Anchors and Toe Buttresses
- ▶ Relief Wells
- ▶ Foundation Grouting
- ▶ Concrete Repairs
- ▶ Stone Masonry Repointing
- ▶ Design Services During Construction

## EMERGENCY ACTION PLANNING AND INUNDATION MAPPING

GZA specializes in hydrologic, hydraulic, and hydrodynamic analyses and are accustomed to working with large, complex watersheds requiring detailed and careful analyses based on calibrated and verified computer modeling. We are keenly aware of the importance of this reality-check process, to avoid over-conservative estimates of extremely low-probability floods that can lead to unnecessary and very expensive rehabilitation.

Associated with most dam safety inspections are formal, written Emergency Action Plans (EAPs), which are usually required for Significant and High Hazard Dams. GZA has prepared hundreds of written EAPs for dams over the past 20 years. EAPs are necessary to outline an organized response to emergency situations associated with a sudden, rapid, and uncontrolled release of water from a dam. The major components of an EAP include detailed procedures for emergency identification, repair, notification, and evacuation. Key elements of developing an EAP involve dam breach simulation and flood wave routing to produce inundation maps.

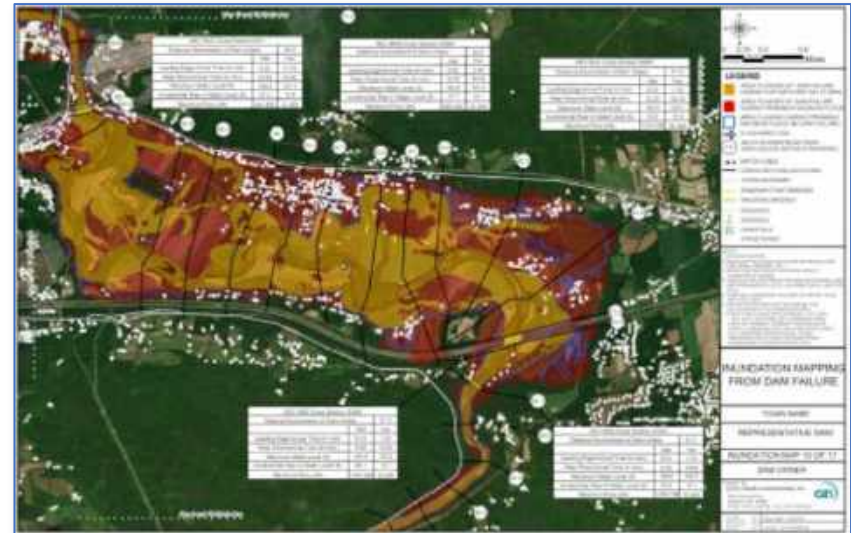
We are skilled in both traditional one-dimensional analyses using the U.S. Army Corps of Engineers HEC-HMS and HEC-RAS computer models, and two-dimensional analysis using HEC-RAS and other models including FLO-2D, ICPR4, and ADCIRC. We utilize these state-of-the-practice methods to quickly, accurately, and efficiently produce dam breach analyses and inundation maps as part of the EAP development process.

GZA has successfully conducted these studies for small and large dam owners and coordinated the development of inundation maps and hydrologic and hydraulic analyses successfully with their representative State Dam Safety Offices.

Ultimately, the EAP helps owners maintain a safe structure and assist in public safety. Our services in this area have also involved developing and conducting orientation meetings and communication drills that focus awareness and tests the readiness of the plan. Often our work includes specialized training in instrumentation reading and basics of routine dam inspection to the dam operators and their related staff.

Expertise:

- ▶ HEC-RAS MODELING
- ▶ DSS-Wise Modeling
- ▶ ArcGIS
- ▶ EAP Orientation and Tabletop Exercise





## HYDROPOWER

GZA has provided hydropower engineering services at projects from 40 kW to 900 MW in size. Our hydropower services are comprehensive, extending from feasibility studies, preliminary resource assessments, and licensing to engineering design including turbine selection and powerhouse design to FERC compliance activities include relicensing, permitting, environmental studies, FERC Part 12D Safety Inspections, PFMA Facilitation and EAP Training Exercises

Work scope includes the full range of studies and design tasks to assist in the assessment and development of hydropower projects from conception to commissioning. This includes turbine selection and physical/structural upgrades of the powerhouse and related appurtenant facilities.

GZA is experienced in the FERC hydropower licensing process. GZA is a strong client advocate and our approach to licensing issues is to provide solutions which are in the best interest of the project proponent, but we also recognize that listening carefully to both government and regulatory stakeholders can reduce contention and speed the licensing process. GZA has a wealth of experience performing invasive species investigations and monitoring and developing invasive species control plans. We are experienced in developing Exhibit F and G drawings in accordance with FERC regulations that FERC has approved. Our multi-disciplinary capabilities allow us to handle almost all aspects of FERC licensing with in-house staff.



### Expertise:

- ▶ Preliminary Resource Assessments
- ▶ Feasibility Studies
- ▶ Facility Condition Assessments
- ▶ LIHI Files
- ▶ Turbine Selection
- ▶ Part 12 Safety Inspections
- ▶ Potential Failure Mode Analyses
- ▶ Dam Safety Surveillance and Monitoring Plans & Reports
- ▶ Fish and Eel Passage Design
- ▶ EAPs
- ▶ FERC Licensing & Relicensing

## DAM REMOVAL & STREAM RESTORATION

GZA has been a pioneer in assisting owners with dam removal and stream restoration. In some cases, an owner may find that their dam no longer serves its intended function and no longer is an asset.

GZA provides expertise for feasibility studies, permitting, environmental impact reporting, design and construction for removal of dams as proactive means for sound environmental restoration. Using our combined skills in natural resource sciences and engineering, GZA is an industry leader in this rapidly developing field, having successfully removed more than a dozen dams. Our clients have realized a reduction of operating costs and safety risks associated with removing their aging dams and the public has benefited from the conversion of these previously dammed streams to free-flowing conditions.

Stream stabilization has become “softer” throughout the years, focusing on bio-engineered methods in lieu of reinforced concrete or other more traditional stabilization methods. Our experience in this field enables us to provide more natural stabilization solutions which better address bank erosion, sediment loading, and water quality issues while also restoring critical aquatic habitats and fish passage such that streams return to equilibrium with their natural surroundings.

GZA has extensive experience in stream assessment and restoration design. We have experience in EPA rapid bio-assessment and Rosgen stream classification protocols in addition to having technical experts in fisheries, aquatic invertebrates, aquatic macrophytes, wetlands, and herpetiles. GZA engineers are also accomplished in stream stabilization and restoration design. Riverine services include stream assessment, stream habitat, stream restoration and design, invertebrate surveys, fisheries services, fish and wildlife passage design and stream habitat / continuity assessment.



### Expertise

- ▶ Sediment Transport Analysis
- ▶ Sediment Management Plans
- ▶ Fluvial Geomorphology





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## NATURAL HAZARD RISK MITIGATION

We help our clients protect property, avoid loss, maintain operational continuity and safety by identifying natural hazard risks that exist today, and helping them prepare for an uncertain climate future by implementing innovative, practical and sustainable risk management strategies and solutions. We assist state and local governments throughout the emergency management cycle of preparedness, response, recovery and redevelopment.

Natural Hazard Mitigation Plans are the first step in the process. Our Natural Hazard Mitigation Plans meet FEMA’s plan requirements and are also designed to be actionable and are integrated with dedicated user-focused web-mapping applications. Services provided include:

- ▶ Hazard Identification
- ▶ Hazard Vulnerability Assessment
- ▶ Climate Change Forecasting
- ▶ Loss Estimation, including FEMA HASUS-MH Analysis
- ▶ Mitigation Strategies and Actions
- ▶ Hazard Communication and Stakeholder Outreach
- ▶ Mitigation and Resilience Feature Design and Construction
- ▶ Plan Review and Adoption
- ▶ Geospatial Information Management and Web Development

## GEOHAZARD MAPPING AND ANALYTICS



Geospatial data and technology provide the “backbone” for components of GZA projects, including data collection, sharing, management, analysis, and visualization (mapping and 3D modeling). Our goal is to organize complex geospatial data, processes, and concepts into a coherent visual display that can be readily understood. GZA’s scientists, engineers, analysts, and designers are experts at the production of GIS and CAD-based thematic mapping, 3D modeling, and visualization, as well as statistical visualization of facility and asset management data, natural resources, environmental, geologic, and natural hazard data. GZA leverages these large and complex datasets by combining them with our own internal data libraries for engineering and design.

We also assist our clients with using these applications and tools to seamlessly integrate information management into their operations and businesses. For example, we have assisted other power and water utility clients by developing and hosting a GIS-based web application to store, view, share, and manage their dam inundation data.

*GZA is proud to be an ESRI Partner.*

## ADDITIONAL SERVICES

GZA also provides additional services.

- ▶ Emergency Response Planning
- ▶ Disaster Recovery Support
- ▶ FEMA Hazard Map Services
- ▶ Site and Structure Design
- ▶ Critical Infrastructure Hazard Mitigation & Resilience
- ▶ Grant & Funding Assistance
- ▶ Community Engagement



## SECTION B | UNDERSTANDING & EXAMPLES OF PROJECT EXPERIENCE



# SECTION B | UNDERSTANDING & EXAMPLES OF PROJECT EXPERIENCE

## PROJECT UNDERSTANDING

### UNDERSTANDING OF THE AUTHORITY’S GOALS

As discussed in your statement of work, GZA understands that the Authority owns and operates 5 Michigan Part 315 regulated dams in Wayne, Livingston, Oakland and Macomb Counties. This project is focused on 4 of the 5 dams as summarized below:

Dam Name	Dam ID No.	MetroPark	County	River / Creek	Hazard Potential Classification	Last Inspection Date	Report Date
Kent Lake Dam	11	Kensington	Livingston	Huron River	Significant	Nov 4, 2019	Nov 26, 2019
Flat Rock Dam	556	Oakwood	Wayne	Huron River	High	July 23, 2020	Dec 22, 2020
Upper Stony Creek Dam	686	Stony Creek	Macomb	Stony Creek	High	July 23, 2020	Dec 15, 2020
Lower Stony Creek Dam	685	Stony Creek	Macomb	Stony Creek	High	July 23, 2020	Dec 21, 2020

We also understand that the Authority is looking to hire a multi-disciplinary firm that has experience in hazard and risk mitigation planning, dam construction and inspection, public engagement processes, knowledge of multi-governmental agency permitting, procedures and protocols. The scope of work will focus on two main categories, namely: Category 1 – Evaluation of the 4 existing dams listed above; and Category 2 – Development of updated inundation maps and scenarios for different failure modes and response options. GZA’s work efforts will be coordinated with the Authority and we anticipate tasks will be performed concurrently to expedite efforts and improve efficiency.

As discussed throughout our response, we believe GZA has the experience and local presence that will satisfy the Authority’s overall goals.

### SITE INSPECTION / FAMILIARITY WITH EXISTING CONDITIONS

GZA’s Livonia, Michigan office will serve as our central office for the project work. GZA staff are very familiar with the geologic and geohydrologic conditions of southeast Michigan having performed numerous subsurface geotechnical and environmental projects since establishing our Livonia office in 1987. As further discussed in Section C, we will dedicate specific staff familiar with dam inspections and inundation mapping for scenarios envisioned by the Authority, public agencies and GZA. The documentation completed for each dam will be specific and presentation-friendly for the general public.

### DETAILED SCOPE OF WORK

Following the Authority’s RFP, we have included a detailed scope of work in Section C – Management Summary, Work Plan and Schedule.



## EXAMPLES OF SIMILAR PROJECTS, SITES AND CLIENTS

Since GZA's inception in 1964, dam safety engineering has been one of our core disciplines. We have partnered with clients to help with projects ranging from small, former mill pond dams to large, high-hazard water supply dams, to FERC-regulated hydropower dams, to USACE-built levee systems. We believe the following project descriptions demonstrate our ability to: understand specific project requirements for our clients; bring practical and functional resources and solutions to specific projects; and perform our services with the awareness of client's budget and overall cost constraints.

The following is a representative list of projects which are similar to the scope of work requested in this RFP:

### ▶ **DAM EVALUATION OF THE UPPER CONSTANTINE DAM – ID No. 554 CONSTANTINE, MI**

Client: OX Paperboard

GZA performed dam inspections and evaluations under Michigan's Part 315 Dam Safety Program in 2010, 2014 and 2018. The dam evaluations included: condition; spillway capacity; operational adequacy; structural integrity; identification of deficiencies and/or areas in need of repair. GZA made recommendations for maintenance, repair, and/or alterations regarding the dam. Following report review and discussion with the dam owner, GZA provided the final report to the Michigan Department of Environmental Quality (MDEQ, now Michigan Department of Environment, Great Lakes and Energy (EGLE) on behalf of the owner to maintain Part 315 regulatory compliance.

### ▶ **PROJECT: DAM SAFETY INSPECTIONS OF COMBUSTIBLE COAL ASH IMPOUNDMENTS**

Client: U.S. Environmental Protection Agency

As part of a nationwide program in response to coal ash dike failure at TVA/Kingston, Tennessee, GZA performed safety reviews, inspections, and reporting of the condition of each dam structure and appurtenant structures. Each report contained recommendations for remedial measures to correct deficiencies with respect to the



Above: OX Engineered Products, Spillway Photo  
Below: Clifty Creek Electric Power Station West Bottom Ash Pond  
Dam Safety Inspections – Madison, IN



observed embankment conditions and items such as the spillway design flood and seismic stability analysis of upstream and downstream slopes. GZA provided services at the following facilities:

- ▶ Consumers Energy, D.E. Karn Generating Station, Essexville, MI
- ▶ Lansing BWL, Erickson Station, Lansing, MI
- ▶ Detroit Edison, Monroe Power Station, Monroe, MI
- ▶ Northern Indiana Public Service Corporation (NIPSCO) Bailey Generating Station (Chesterton, IN), D.H. Mitchell Generating Station (Gary, IN), and Michigan City Generating Station (Michigan City, IN)
- ▶ Ohio Valley Electric Corp/Indiana Kentucky Electric Corp., Clifty Creek Generating Plant, Madison, IN
- ▶ Salt River Project, Coronado Generating Station, St. John's, AZ. The reports prepared included recommendations for remedial measures to correct deficiencies with respect to the observed embankment conditions and items such as the spillway design flood and seismic stability analysis of upstream and downstream slopes.



Clifty Creek Electric Power Station West Bottom Ash Pond Dam  
Safety Inspections Madison, IN

## ▶ PROJECT: MIDDLE COMSTOCK DAM EVALUATION – KALAMAZOO COUNTY, MI

Client: Comstock Township, MI

GZA responded to an urgent request from Comstock Township regarding the dam stability of the Middle Comstock Dam (Michigan ID No. 137). GZA evaluated the Township’s concern and found that the dam was stable and in fair condition. Although the dam was not regulated under Michigan Part 315 Dam Safety Regulations, GZA proposed to perform a dam evaluation consistent with the requirements of Part 315 and with the Federal Guidelines for Dam Safety to identify items that could be performed to improve the overall dam condition. The dam evaluation identified several maintenance items and deficiencies that needed to be corrected. GZA provided a summary report that listed the items of concern and provided draft



Middle Comstock Dam Evaluation



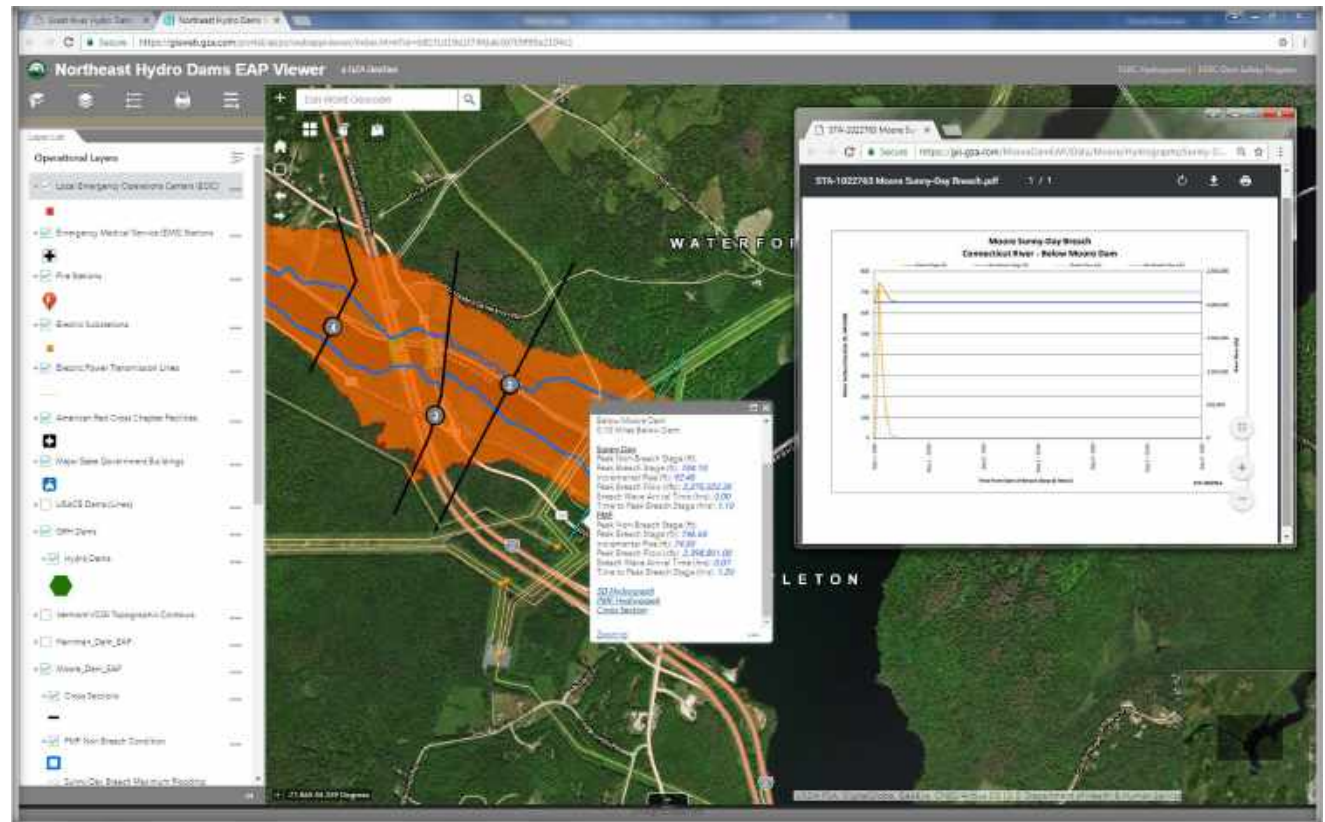
construction drawings for maintenance and repair by the Township. Although not required by regulation, GZA also assisted the Township with compiling the information for an Emergency Action Plan.

## ▶ PROJECT: EMERGENCY ACTION PLAN UPDATES AND DAM BREAK MODELING FOR HYDROPOWER DAMS AT VARIOUS LOCATIONS IN VT, NH, MA, AND RI

Client: Great River Hydro

Great River Hydro is the owner and operator of **18 hydropower dams** in New England. TransCanada, the former owner, engaged GZA to perform dam break analyses, hazard classification assessments, Inflow Design Flood analyses, and Emergency Action Plan (EAP) updates for their dams. The work was completed in 2018.

GZA conducted dam break analyses for six of the dams. For four dams, GZA used the dam break analyses to evaluate their hazard classification. We also performed an Inflow Design Flood (IDF) analysis for two of the dams. GZA performed “with” and “without” dam failure simulations using a 1-D unsteady flow HEC-RAS version 5.0.1 model. Downstream consequences were evaluated based on depth and velocity results and a recommendation for the IDF was developed. GZA used the new mapper feature in HEC-RAS to map the results within minutes after breach runs were simulated. A separate IDF report section was developed for each dam evaluated and submitted to FERC for review.



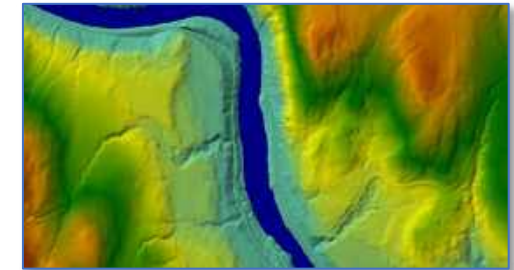
Web Mapping Application for Viewing of Dam Breach Inundation and EAP Information

### PROJECT HIGHLIGHTS

- ▶ FERC-regulated dams
- ▶ Inundation mapping
- ▶ Emergency Action Plans
- ▶ Dam Breach Analysis for 273 miles of river
- ▶ Hazard classification
- ▶ Inflow design flood
- ▶ Interactive Story Map highlighting each dam and associated EAP information
- ▶ Dams EAP Viewer Web GIS application

Additionally, for one dam, GZA used a HEC-RAS 2-D unsteady flow model to evaluate the capacity of the dam’s spillway discharge channel. The downstream channel opens into an unconfined terrain with no channel path, and for this reason, the analysis was performed as two dimensional. The model was used to evaluate if tailwater in the discharge channel causes submergence at the spillway.

The majority of the updates involved reformatting the EAPs to conform with updates in the FERC Engineering Guidelines for the Evaluation of Hydropower Projects. The dam break analyses were also used to develop updated inundation maps for the EAPs. The FERC guidelines were revised in 2015 to conform with the FEMA Publication No. P-64 – Federal Guidelines for Emergency Action Planning for Dams.



LiDAR Terrain and inundation data

GZA was also contracted to develop an interactive web-based application that presents the inundation maps and data for Great River Hydro’s High Hazard dams. The web-based application, the GZA GeoTool ©, displays data, documents and imagery that is hosted on GZA’s Enterprise Portal and allow the user to easily and securely view the various features of an inundation map.

### ▶ PROJECT: DAM BREAK MODELING, INUNDATION MAPPING AND EMERGENCY ACTION PLANS, EASTERN DAMS, MA

Client: Massachusetts Water Resources Authority (MWRA)

GZA prepared three Emergency Action Plans for the dam’s impounding three of MWRA’s reservoirs. The dams were classified as either High Hazard or Significant Hazard. The dams are located in urban areas, such as Boston, in some cases impacted subway lines.

GZA developed the Emergency Action Plans based on the format prescribed in the FEMA 64 publication. GZA assembled the document using standard text



Inundation map for one of three dams.



from GZA’s previous EAPs as well as information provided by MWRA and the impacted municipalities. GZA developed a questionnaire with the information required for the EA and sent the questionnaire to the impacted communities. The questionnaire was filled out by the communities as well by phone conversations with GZA staff.

As part of this project, GZA performed dam break modeling to develop inundation maps. The dam break modeling was completed using the HEC-RAS and HEC-GeoRAS programs. Two simulations were performed for each dam. The fair-weather simulation shows the anticipated inundation zone resulting from a failure at normal pool. The wet weather simulations show the anticipated inundation zone from a failure during a large storm, when flooding from rainfall is also present. The results were presented on inundation maps developed using the ArcMap software. The maps were printed twice – once with aerial imagery and once with a roadway basemap.

GZA also facilitated orientation meetings attended by MWRA staff, Massachusetts Department of Conservation and Recreation (DCR), local emergency management agencies, and other stakeholders. The purpose of the meetings was to introduce the document, discuss its contents, and make revisions as necessary. The format developed for these EAPs eventually served as a template for developing EAPs for more of MWRA’s dams.

▶ **PROJECT: EMERGENCY ACTION PLAN OF THE GREENWOOD LAKE CAMP DAM – DELAWARE, OH**

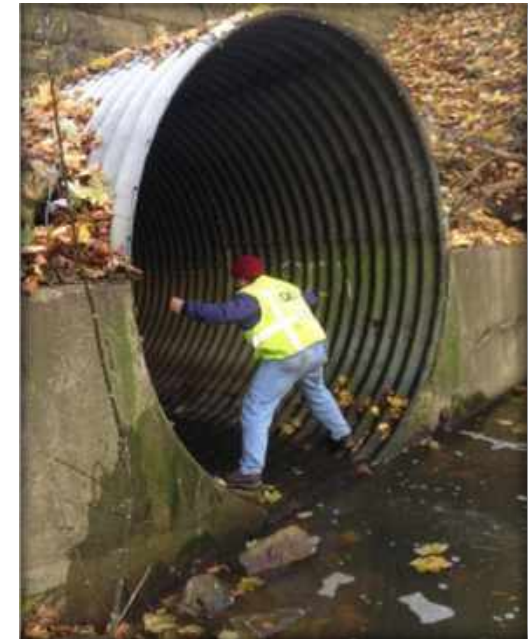
Client: The Salvation Army

GZA prepared an EAP for the dam with guidance from the Ohio Dam Safety Program. Information gathered included the responsibilities and roles of emergency officials in the event of a dam break.

▶ **PROJECT: INUNDATION MAPPING EMERGENCY ACTION PLAN FOR AQUARION WATER COMPANY DAMS – CONNECTICUT, MASSACHUSETTS, AND NEW YORK**

Client: Aquarion Water Company

GZA developed Emergency Action Plans (EAPs) for **24 dams** owned and operated by the Aquarion Water Company (Aquarion) and located in Connecticut, New York and Massachusetts. GZA has past experience at all of the project sites, having conducted Phase I dam inspections, developed inspection & maintenance plans, and/or performed hydrologic & hydraulic modeling services. GZA had previously performed dam breach analysis at 22 of the dams, which were used for this project. This project also included dam break simulations for two dams located in Massachusetts. The dam break simulation was performed using HEC-RAS version 5.0.3. The sunny day and wet weather failure of each dam was modeled, and the resulting flood wave was routed along the downstream floodplain.



GZA Staff Member at the Greenwood Lake Camp Dam



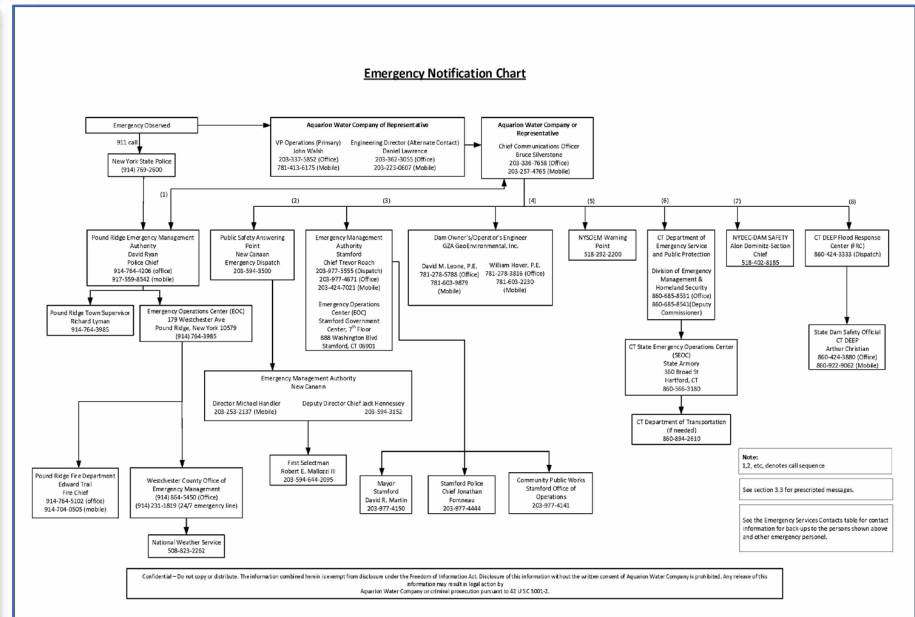
For the dams located in Connecticut, GZA developed EAPs that follow the format outlined by the State of Connecticut's Dam Safety Programs' EAP template. GZA developed the EAPs, following the format outlined in FEMA 64, for the remaining dams. The EAPs document roles and responsibilities, identified emergency conditions, emergency repair guidelines, general evacuation procedures and procedures for exercising the EAP.

GZA also developed new inundation maps which clearly and concisely show the extent of the impact zone and timing effects of the flood wave as it propagates downstream. The inundation maps provide information about the maximum discharge, peak flood elevation and depth, flood wave arrival time, etc. The maps include the latest available color orthophotos and were supplemented with roadway layers and select political and cultural features.

GZA moderated an EAP orientation and tabletop exercise under a separate Purchase Order.



Sample Inundation Map



Sample Notification Flowchart



## ▶ PROJECT: CANTY’S LAKE DAM – KINNELON BOROUGH, MORRIS COUNTY, NJ

Client: Morris County Park Commission

Canty’s Lake and Silas Condict County Park are popular destinations for fishing, picnicking and hiking. Canty’s Lake Dam, located in the park, is a Class II – Significant Hazard dam that required major rehabilitation.

The dam’s most critical deficiency was the existing spillway was significantly inadequate. The small notch spillway was not capable of passing storm events as small as the one-year-storm event without overtopping the dam. In addition, there was no working low level outlet or other means to lower the lake as required by the Division of Dam Safety and Flood Engineering (Division).

The Division ordered the Morris County Park Commission (MCPC) to rehabilitate the dam to pass the required Spillway Design Storm (SDS), which is the 0.5 Probable Maximum Precipitation (0.5 PMP).

GZA worked closely with the MCPC and the Division to conduct hydrologic and hydraulic modeling and stability analyses and developed a practical alternative that also enhanced the park’s recreational opportunities by providing access around the entire lake.

The rehabilitation work, completed in 2018, includes a combined primary/auxiliary box culvert spillway structure and a raised crest to provide one foot of freeboard during the 0.5 PMP. A new 10-inch diameter PVC siphon system was designed to satisfy the requirement for a low level outlet.

Services included:

- ▶ Dam inspection
- ▶ Design of low-level outlet
- ▶ Site evaluation and surveying
- ▶ Hydrologic and hydraulic analysis
- ▶ Inundation mapping
- ▶ Emergency Action Plan
- ▶ Stability analysis
- ▶ Cost analysis
- ▶ Development of final design, contract documents, drawings, and specifications
- ▶ Permit applications
- ▶ Construction phase services
- ▶ Design solution for enhanced hiking access around the lake



*Rehabilitated dam, with box culvert spillway/bridge to resolve significant spillway deficiency and enhance hiking trail access around the lake*



► **PROJECT: DAM BREAK ANALYSIS/DAM INUNDATION MAPPING & EMERGENCY ACTION PLANS AT 14 STATE-OWNED DAMS – MASSACHUSETTS**

Client: Massachusetts Department of Conservation and Recreation (DCR)



GZA developed Emergency Action Plans (EAPs), for **14 dams** owned and operated by the Massachusetts Department of Conservation and Recreation’s (DCR) Dam Maintenance Program. The dams were located in ten towns scattered throughout the Commonwealth and affected more than double that number of downstream communities.

The major focus of the EAP is the development of a detailed notification plan that assigns responsibilities to quickly and efficiently warn key operational personnel, local public safety agencies, and State law enforcement and emergency management agencies in the path of the predicted dam break flood wave.

The development of hypothetical dam breach simulations and associated inundation mapping, which clearly and concisely provides both the dam owner and public safety agencies with the potential flood impact areas resulting from a dam breach, are also an integral aspect of the EAP preparation.

Through field investigations of the dams and downstream hydraulic conditions of the river system, review of dam design plans and operations, and hydrologic and hydraulic computer modeling of spillway

capacity and dam breach conditions, GZA prepared modern, GIS-based full-color inundation maps based on the latest available orthophoto mapping.

► **PROJECT: DAM SAFETY, FLOOD EVALUATION & DESIGN SERVICES – NEW YORK CITY**

CLIENT: State of New York

Our water-services work for New York City has featured GZA’s expertise in dam engineering, stormwater management, developing design drawings, specifications, and engineering services during construction for nearly 20 years. GZA’s work for the City also involves the evaluation of complex site (e.g., building or structure)–specific problems and development of efficient and innovative solutions to mitigate flooding. We have worked primarily with the Department of Environmental Protection (NYCDEP) on their critical water supply facilities, and also with Parks and Recreation (NYCPR), the Economic Development Corporation (EDC), and the Housing Authority (HA). Following are four projects highlighted for their relevancy to the services requested in the RFP.

## IN-CITY WATER SUPPLY RESERVOIR PROJECTS FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

The city maintains four active reservoirs within or near City limits for primary or backup water supply purposes: Central Park (Manhattan), Jerome Park (Bronx), Silver Lake (Staten Island) and Hillview Reservoir (Yonkers). GZA has been providing dam engineering services at these facilities for many years, including biannual and monthly visual dam inspections, inspection and maintenance plans, annual certifications, engineering assessments including seepage/stability analysis and spillway adequacy evaluation, emergency action planning, and other regulatory compliance assistance. These services require geotechnical, structural, civil and hydrologic/hydraulic engineering expertise.

GZA also serves as design engineer for repairs of emergent dam safety issues at these structures. For example, GZA developed drawings and technical specifications for seepage control measures at Hillview Reservoir Dam in Yonkers; targeted tree and vegetation removal at Central Park, Silver Lake and Jerome Park; and, on behalf of NYCPR, dam failure analyses and hazard potential reclassification at the decommissioned Ridgewood Reservoir Dam (Highland Park) in Queens. GZA typically provides permit application development support, construction-phase engineering services (e.g., contractor submittal review, site observation, etc.), and interagency coordination support with the NY State Department of Conservation and Recreation for dam rehabilitation projects.



*Central Park Reservoir, New York City*

## WEST-OF-HUDSON DAMS FOR DEP

GZA provided engineering consulting services for a Detailed Study/Investigation for the Catskill and Delaware System Dams. The focus of this \$4.3 million engineering contract, with design and oversight of a \$5 million subsurface exploration contract, was the performance of detailed safety inspections, geotechnical, and other engineering investigations of six of the NYCDEP's largest water supply reservoirs which provide 90 percent of New York City's 1.4 billion gallons per day demand: Gilboa Dam, Olive Bridge Dam, Cannonsville Dam, Downsville Dam, Merriman Dam, and Neversink Dam.

GZA performed geotechnical, geological, seismic, stability, structural, groundwater/seepage, hydraulic, mechanical, and electrical engineering assessments at each of the six dams. The work was used by the City to develop further, more detailed studies of repairs at the dams. GZA also served on peer review teams for later rehabilitation design projects for Gilboa Dam and Olive Bridge Dam on behalf of NYCDEP.





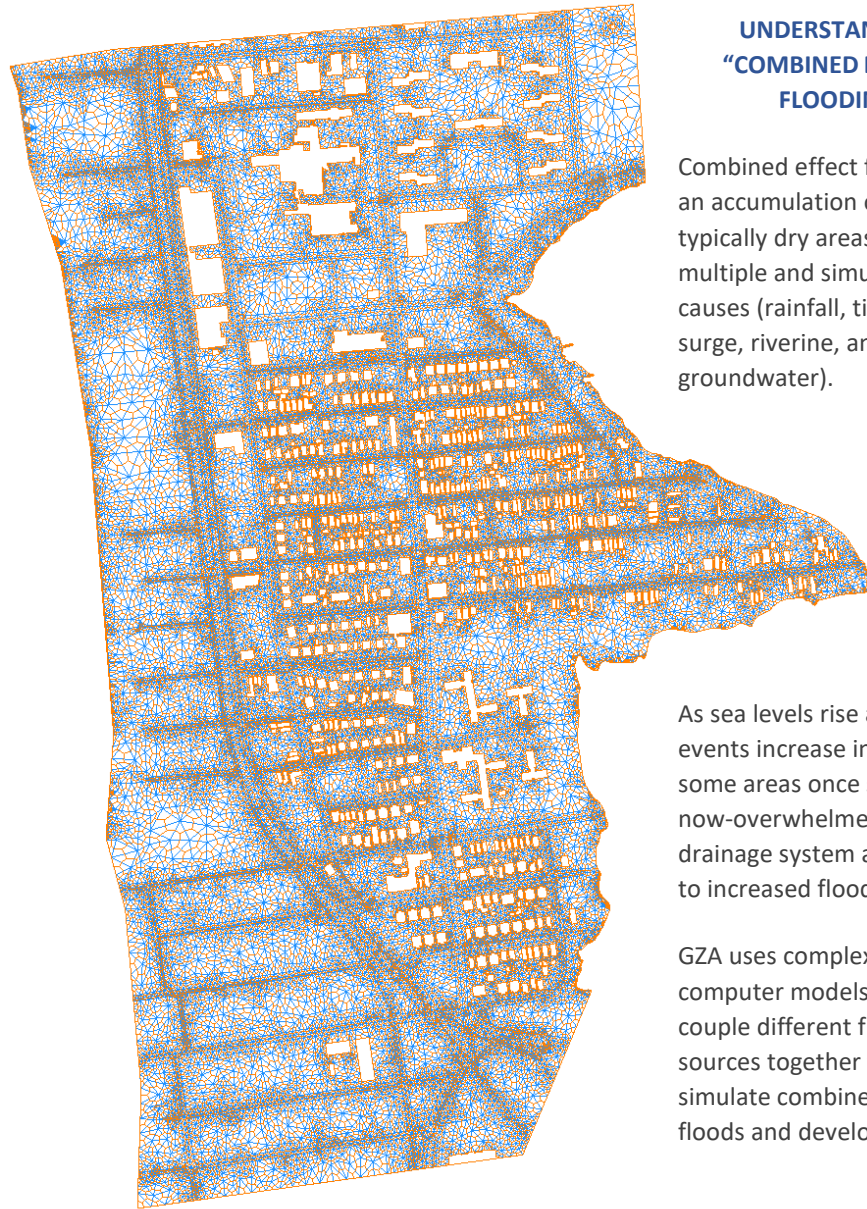
*Olive Bridge Dam of Ashokan Reservoir*

GZA also responded to Cannonsville Dam at DEP’s request to provide emergency engineering assistance. Turbid seepage flow was discovered at the toe of the Cannonsville Dam while DEP’s contractor was drilling borings in preparation for a future hydroelectric facility. A team of GZANY dam safety and geotechnical engineers immediately mobilized to provide assistance to the DEP’s engineers and provide engineer-of-record services for the expedited repair project. GZA’s design was developed rapidly and then reviewed by a Board of Consultants. The repair program involved installation of a vertical drainage curtain and sealing the underground seepage pathways by low mobility grouting. The reservoir is now back to normal operations.

GZA was recently awarded a \$58 million, 15-year contract to perform detailed engineering analysis in support of reconstruction of Olive Bridge Dam and the Ashokan Reservoir Dikes. This will include stability analyses, hydrology and hydraulics, and development and implementation of a comprehensive dam rehabilitation program to ensure this critical water supply dam and its dikes are in good working order for years to come.

#### **EDGEMERE DRAINAGE PROJECT FOR EDC**

GZA is part of an engineering team that is currently evaluating the ongoing flooding issues in the Edgemere section of Queens, New York City. The drainage study is a part of a larger effort to Raise Shorelines at a number of sites around the City, to protect against future sea level rise. GZA’s scope of work for the Raise Shorelines project beyond Edgemere includes geotechnical (including development and administration of a subsurface boring



### UNDERSTANDING “COMBINED EFFECT” FLOODING

Combined effect flooding is an accumulation of water in typically dry areas due to multiple and simultaneous causes (rainfall, tidal, storm surge, riverine, and/or groundwater).

As sea levels rise and rainfall events increase in intensity, some areas once served by a now-overwhelmed local drainage system are subject to increased flood risk.

GZA uses complex 2D computer models that couple different flood sources together to robustly simulate combined effect floods and develop solutions.

program) and marine/waterfront engineering support of bulkheads, berms, and other shoreline-raising concept designs for three additional sites in Queens and Staten Island.

A disadvantaged neighborhood, Edgemere was particularly hard-hit by storm surge flooding during Hurricane Sandy. It continues to be plagued by flooding concerns, even during sunny-day high tide events, due to a combination of its low-lying topography (highest point is around Elevation 7), high groundwater levels, ongoing sea level rise and climate change.

GZA’s overall approach to the Edgemere Drainage Study is to:

- 1) use “state-of-the-science” methodologies, including numerical models, for characterizing flood hazards and sea level rise;
- 2) calibrate our hazard analyses to field-collected groundwater and stormwater flow data;
- 3) use standard FEMA methods such as HAZUS-MH for estimating losses that would otherwise be experienced in lieu of the proposed flood mitigation alternatives;
- 4) use an integrated approach for improvement projects including both structures and natural and nature-based features; and
- 5) use ArcGIS for all information management, including our web-based GIS GZA GeoTool© for the visualization of results.

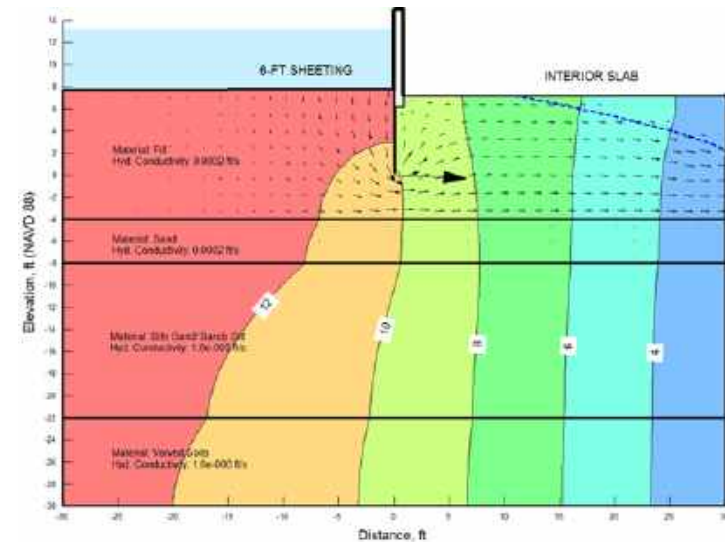
GZA is developing a hydrologic and hydraulic model for the area, integrating two-dimensional overland flow, groundwater flow, and the stormwater system. The robust modeling approach enables us to comprehensively evaluate proposed flood mitigation alternatives and make competitive and compelling cases for future flood mitigation funding.



## SEEPAGE INVESTIGATION FOR NYCHA

As a result of Superstorm Sandy, various NYCHA developments experienced flood damages caused by coastal storm surge. Immediately after the storm, NYCHA's Capital Program provided funding for restoration, repair and replacement of damaged utility equipment and facilities such as mechanical, electrical, and plumbing systems, and associated architectural and structural work. NYCHA is currently working with GZA and others to perform site assessments and evaluate design development options for providing resiliency to future storm events at various public housing sites. This information is utilized by NYCHA to apply for funding opportunities from various sources such as FEMA.

GZA evaluated foundation seepage under a given design flood elevation. Underground seepage can cause potential damages such as structural failure of basement or ground flood slab, erosion of in-situ soils around foundations and flooding. The design flood is the FEMA base flood with an additional projected future sea level rise. Numerical modeling methods are used to calculate seepage uplift, potential piping failure and seepage flow rate, under the design flood conditions. Transient seepage analysis is performed to evaluate the temporal response to the design flood hydrograph. The analysis results are used to evaluate the effectiveness of various flood proofing / mitigating measures such as horizontal concrete hardscape and vertical sheeting.



Example of GZA's flood analysis with proposed flood mitigation measures.

## ► PROJECT: HAZARD CLASSIFICATION OF 55 DAMS – STATEWIDE RHODE ISLAND

Client: State of Rhode Island, Department of Environmental Management

GZA was selected to provide the Rhode Island Department of Environmental Management (RIDEM) Office of Compliance and Inspection an update of the Hazard Classification of **55 dams** owned and operated by various private and public entities throughout Rhode Island. Most of these dams are currently classified as Low or Significant Hazard, per RIDEM - Dam Safety Guidelines. However, in general, the hazard classifications of the dams have not kept pace with the increases in downstream development, which have a direct bearing on potential hazard if a dam should fail or under heavy flooding.

The project tasks included visual inspections of each dam site and its associated downstream impact areas. ArcView GIS is used to display the location of each dam on an orthophoto base map, along with pertinent information pertaining to the downstream flood plain such as lifeline resources (i.e., roadways, railways, utilities), critically important structures (i.e., hospitals, schools, municipal buildings, fire stations, etc.), and downstream dams and bridges. The NWS simplified dam break model (SMPDBK, 1991) was used in estimating breach flows and resultant downstream flood stages for each dam. An approximate inundation area displaying the potential dam failure flood hazard zone was provided as an additional layer on the GIS maps.



As a value-added feature of this contract, GZA also conducted a modified risk indexing procedure for the embankment dams in the given inventory. When combined with the results of the hazard potential investigation, it is a useful tool for dam safety regulators and allows RIDEM to help prioritize and schedule a subset of dams for additional inspections, studies, or repairs given limited fiscal resources.



## DISTINCTIONS AND AWARDS

GZA is proud to have won the following awards in the past five years.

**2021 U.S. Department of Energy's Waterpower Technologies Office (WPTO), National Renewable Energy Laboratory (NREL) & Oak Ridge National Laboratory (ORNL) Groundbreaking Hydro Prize (with Littoral Power Systems)** for the Terra-Modular Project

**2020 Kane County Department of Transportation's Consultant of the Year-** GZA's Oak Brook, IL office

**2020 EBC Nicholas Humber Award for Outstanding Collaboration** for the Eversource Seacoast Reliability Project- Little Bay, Durham and Newington, NH

**2020 EBC James D.P. Farrell Award for Brownfields - Remediation Project of the Year** for Encore Boston Harbor Hotel-Resort-Public Promenade Project, Everett, MA

**2019 Environmental Leader Award** for ecological restoration of the Firmenich Fragrance Manufacturing Site, Newark Bay, NJ, 2019

**2019 Big Apple Brownfield Award** for Landing Road Affordable and Supportive Housing Brownfield Redevelopment, Bronx, NY, 2019



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**2019 EBC James D.P. Farrell Award for Brownfields - Remediation Project of the Year** for Citizens Bank Corporate Campus Brownfields Redevelopment, Environmental Business Council 26<sup>th</sup> EBEE Awards

**2019 Design-Build Project of the Year Award, American Society of Civil Engineers, Metropolitan Section** for the Governor Mario M. Cuomo Bridge (Tappan Zee Bridge Replacement)

**Upper Roberts Meadow Reservoir Dam Breach and Stream Restoration, Outstanding Professional Design Excellence - ACEC/MA Engineering Excellence Awards Competition, 2019**, American Council of Engineering Companies of Massachusetts

**Wolf Point East Tower (as a sub to The Walsh Group) - Award of Merit, 2019**, The Structural Engineers Association of Illinois

**Remediation of Former Gloucester Gas Light Company Manufactured Gas Plant Facility, 2018**, ENR New England's Project of the Year/ Best Water/ Environment & Excellence in Safety Award of Merit: Phase IV

**Rock Solid Excellence in Safety Award, IAAP, 2006-2018**

**Rope Access Safety Recognition- Honored for Best-in-Class Safety Development and Implementation Initiatives within the Geohazard Industry**, The Association of Geohazard Professionals, 2018-2019-2020

**(SLAM/GZA) Connecticut Building Congress – 2018 Award of Merit- Project Team Award (CBC PTA Award), University of Hartford Gengras Student Union Project, Hartford, CT, 2018**

**ACEC-Maine – 2017 Special Recognition Award for Engineering Excellence in Innovative Technology MaineDOT Matthew Lanigan Bridge Replacement, Kennebunk/Kennebunkport, ME (Geotechnical Investigation & Evaluation, Design, Construction), 2017**

**ENR New York Region’s 2017 Best Project Award, Airport/Transit Category** for the Second Avenue Subway, Phase 1 Project (AECOM/Arup Team), 2017

**(VHB/GZA) ACEC Rhode Island 2017 Gold Anchor Award, First Place** to Honor Outstanding Professional Design Excellence for a project with construction costs of more than \$10 million for the “Replacement of I-95 Providence Viaduct (Southbound) Bridge No. 578”. GZA provided Geotechnical Engineering for this Rhode Island Department of Transportation project.

**PEs in Construction Group of the New York State Society of Professional Engineers - 2017 Project of the Year**, New NY Bridge Project (Governor Mario M. Cuomo Bridge), Nyack/Tarrytown, NY, 2017



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**2017 EBC Nicolas Humber Environmental-Energy Award for Outstanding Collaboration for the Daylighting and Restoration of the Muddy River to Reduce Flooding Risk and Restore Urban Green Space** (GZA, Charter Contracting Company, US Army Corps of Engineers, New England District, Massachusetts DCR, Massachusetts DEP, City of Boston, Town of Brookline, and Fort Hill Companies), 2017

**ACEC 2017 National Engineering Excellence Award – Grand Award, “Driving Across the Hudson: Foundation Design for the New NY Bridge, Nyack/Tarrytown, NY**, 2017, American Consulting Engineers Council, National

**ACEC-MA 2017 Engineering Excellence Award – Bronze Award, Muddy River Flood Damage Reduction and Environmental Restoration project, Boston/Brookline, MA**, American Consulting Engineers Council- Massachusetts, 2017

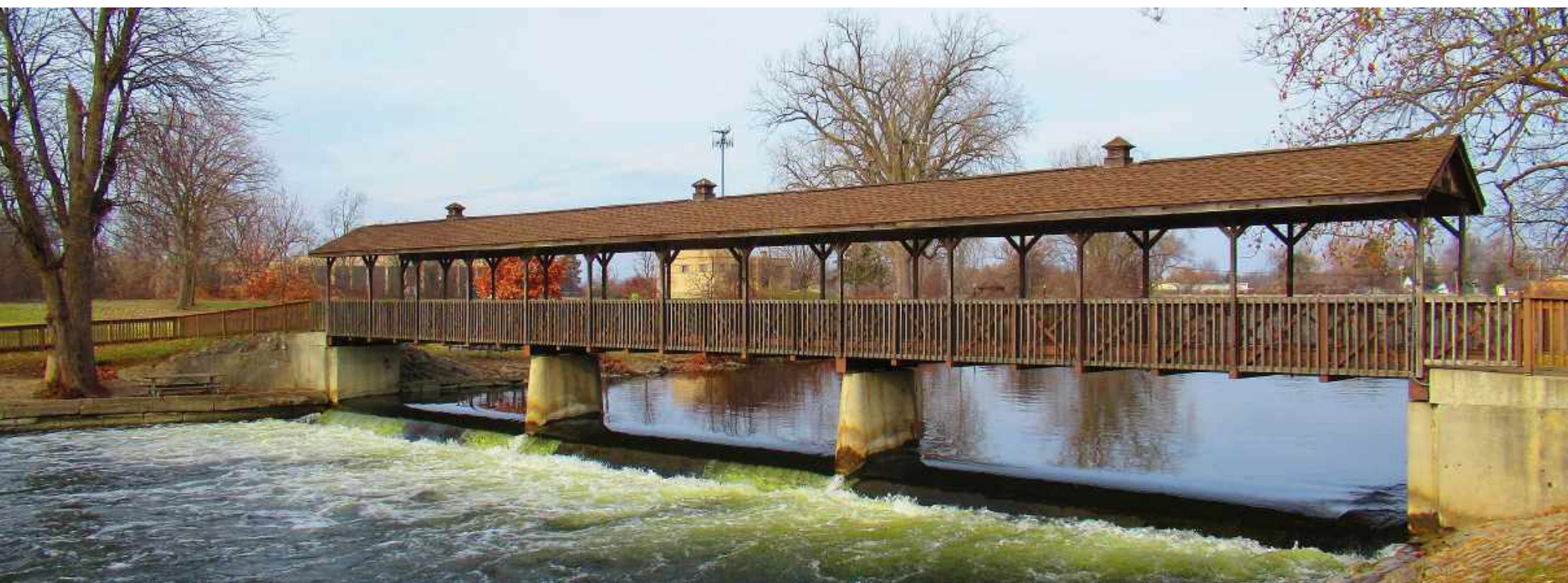
**ACEC-IL 2017 Engineering Excellence Award – Outstanding Water Quality, Stormwater Management, Public Education and Stakeholder Engagement Services for the Hickory Creek Watershed Project, Cook County, IL**, 2017, American Consulting Engineers Council – Illinois

**PDCA – 2017 Project of the Year Award**

**ACEC-NY 2017 Engineering Excellence Award – Diamond, Silverstar Mercedes Queens, NY**, 2017, American Consulting Engineers Council – New York

**ACEC-MA 2017 Engineering Excellence Award- Silver, Byron Weston Hydroelectric Project, Dalton, MA**, 2017, American Consulting Engineers Council – Massachusetts





## **SECTION C** | MANAGEMENT SUMMARY, WORK PLAN & SCHEDULE

## SECTION C | MANAGEMENT SUMMARY, WORK PLAN & SCHEDULE

### PROJECT MANAGEMENT THROUGH COMMUNICATION & COLLABORATION WITH AUTHORITY STAFF

Proactive communication is our company commitment. We plan and perform our work best by taking responsibility for understanding your goals, needs, and project constraints. We develop a project-specific communications plan to meet your need for face-to-face, Zoom/Teams on-line meetings, phone, email and written communications about your project's progress. You are kept up to date on work status, often before you think to ask. You are advised and consulted on your most important project and risk options before work begins. We take a forward thinking "ownership" perspective on your project's critical success factors in partnering with you as a trusted advisor on your team.

With a staff of interrelated professionals dedicated to providing high-level expertise on complex projects above, below and at ground-level, GZA's experts provide seamless integration across practice areas, client type, and location. As an employee-owned, private company, GZA's staff is motivated to propel the firm forward, seeking integrated, complex, and interesting projects that underscore a commitment to client satisfaction, environmental stewardship and best practices in science, engineering, and construction.

GZA will initially meet with Authority staff to establish a project-specific communications plan to satisfy your needs and expectations. Specific details of the plan would be established at that time.

### DETAILED WORK PLAN FOR PROJECT COMPLETION

#### CATEGORY 1: EVALUATION OF EXISTING DAMS

GZA understands the primary focus of Category 1 is to establish / update existing dam conditions and to assist the Authority with developing a plan for completing necessary actions resulting from a thorough evaluation of the four dams. This will include the following services.

- ▶ Review of historical drawings
- ▶ Past projects and work documentation
- ▶ Future development of design drawings and specifications to address the results of the historical review and site inspection, including identification of required permits
- ▶ Preparation of bid documents and review with the Authority for selection of key contractors for performing potential future work
- ▶ Oversight of potential dam repair or remedial work performed on behalf of the Authority
- ▶ Preparation of key documentation for the work completed







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For the purposes of this initial stage of project work, GZA has prepared a specific scope of work for documentation review and dam inspection at the four dams associated with this project. The following provides details regarding the tasks anticipated to be performed.

### **TASK 1.1: REVIEW OF AVAILABLE INFORMATION**

GZA will review pertinent information including (as available) drawings of dam design, construction data, correspondence to and from the DEQ/EGLE and inspection reports from public sources and/or documentation provided by the Authority. GZA will also review pertinent publicly available resources regarding the geologic and geohydrologic conditions of the dam areas and request the specific flood and low flow discharge criteria from EGLE. We would also request a copy of the most recent Emergency Action Plan (EAP) for the dams assuming they are available as each dam has either a “significant” or “high” hazard potential classification based upon the last dam inspections completed in 2019 and 2020. We anticipate this task being completed during the late summer / early fall 2021 in preparation for the field reconnaissance at the four dams.

### **TASK 1.2: FIELD RECONNAISSANCE**

An experienced, senior level GZA Michigan registered professional engineer, will visit each dam site in late October / early November to allow for seasonal foliage to subside. The GZA engineer will be accompanied by a second GZA engineer or geologist depending upon information gathered from previous dam inspections and/or the existing information review. The field visit will preferably take place in the company of an Authority representative who is familiar with operations and maintenance and can provide access to interior site facilities, as applicable. We have budgeted one day to conduct the Site visit at each dam site to perform the visual inspection. GZA staff will make observations of existing conditions and will complete a standard format, field inspection summary checklist, which will be used to record observed deficiencies.

For documentation purposes, digital photographs will be taken, and a sketch with pertinent approximate dimensions will be prepared. Our site visits will also include a reconnaissance of the area immediately upstream and downstream of the dam.

### **TASK 1.3: SUMMARY OF INFORMATION / INSPECTION REPORT**

Based on review of available data and field reconnaissance, GZA will prepare a report of observed and historical conditions including, but not limited to, the information listed below, in accordance with Part 315.

- ▶ Description of the dam, outlet spillway(s) and abutments
- ▶ Summary of available historical information regarding dam construction, operation and alterations, if any
- ▶ Overall condition of the dam crest, upstream and downstream slopes, and abutments
- ▶ Observed conditions for the various structures and appurtenances and comparison with previous reports
- ▶ Identification of deficiencies noted during the inspection
- ▶ Recommendations for addressing deficiencies
- ▶ Instrumentation review (if present)
- ▶ Photographs taken during the inspection
- ▶ Maps showing the location of the dam and pertinent features



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The results of the aforementioned tasks will be summarized in a bound report (“Report”) for each dam, which will follow the Part 315 Dam Safety Inspection report guidance document. Copies of the completed inspection form and photographs will be included in the Reports. The Reports will list and describe deficiencies observed during the course of the inspection with a comparison made to previously documented dam inspections. In addition, the Report will include a section presenting conceptual remediation/repair recommendations/alternatives with respect to identified short- and long-term dam rehabilitation, maintenance and operation, as appropriate.

Please note that our scope for Category 1 does not include conducting a specific hydrologic/hydraulic analysis other than from available resource information and our site observations. Any discussion of hydrologic characteristics and spillway capacity will be derived from existing published sources such as FEMA Flood Insurance Studies or USGS StreamStats information. However, GZA will make a formal flood discharge request to EGLE and/or utilize information developed during the Category 2 evaluation, which we will use in providing an assessment of existing spillway capacity and failure mode options. Also, note that our scope does not include conducting independent structural and/or stability analysis on dam structures. If needed, those activities could be performed as future tasks.

GZA will utilize the EGLE Part 315 report guidance in preparing our Report for each dam site (i.e., four specific dam Reports). GZA will provide the Authority with a draft Report for review and comment approximately 4 to 8 weeks following the actual dam inspections. Following your review, the Report will be finalized, and you will be provided with a bound and an electronic copy of the final inspection Report for your records. Work will be performed, and the Reports will be stamped, by a Michigan registered professional engineer. We anticipate these efforts would be completed by the end of 2021.

## **CATEGORY 2: DEVELOPMENT OF UPDATED INUNDATION MAPS AND SCENARIOS FOR DIFFERENT FAILURE MODES AND RESPONSE OPTIONS**

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GZA understands the primary focus of Category 2 is to develop updated inundation studies for the four dams which look at multiple failure modes and identifies impacts to the environment and downstream communities. GZA will work with the Authority to identify specific failure modes of interest and conform with agency (FERC and EGLE) guidance documentation. The following provides a brief summary of tasks to be performed.

### **TASK 2.1 DAM BREAK ANALYSES**

HEC-RAS analyses for the four dams using cascading failure under dry and wet weather scenarios. GZA will use HEC-RAS v.5.0.7 (or the latest stable, non-beta version at the time the project commences) to perform the analysis. We will use the unsteady flow modules or the simulations to adequately evaluate the typical high velocity flows and acceleration forces inherent in dam failure flood waves. If necessary, we will use the 2-D algorithms in areas that are judged to be subject to a high degree of unconfined floodplain surface flows that cannot be accurately characterized by upstream-downstream one-dimensional flow equations.

- ▶ **Gather information and fill data gaps.** We anticipate most of the data available from the previous dam break simulation and mapping efforts will remain valid. GZA will visit the dams and downstream area to supplement the existing data with field measurements and photographs at safely accessible in-stream structures such as bridges, culverts, or downstream dams.



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- ▶ **Inundation Mapping.** GZA is an Esri Silver Partner, and we use ArcGIS to visualize HEC-RAS inundation outputs. Our inundation maps will be developed in ArcGIS and conform to FERC requirements. GIS shapefiles and other supporting data will be provided to the Authority for use in planning and emergency response.
- ▶ **Dam Break Analysis Report.** GZA will develop a concise report summarizing our work, per FERC requirements. Electronic (PDF) copies of model input/output will be included as an appendix, along with native electronic files.
- ▶ **Sudden Failure Assessment.** The Sudden Failure Assessment will combine the technical information developed as part of the previous tasks with emergency readiness and response levels within the Authority's MetroParks and the downstream community. GZA will coordinate with the Authority and emergency management officials to update the existing Sudden Failure Assessment, incorporate new developments in emergency warning / response systems, and develop the required response quantifications discussed in Chapter 6.5 of the FERC guidance document. We envision meeting (in person or virtually) with the Authority and other City emergency management representatives prior to undertaking the assessment.

## TASK 2.2 DOCUMENTATION UPDATES.

- ▶ Update pertinent sections of dam emergency action plans including projected inundation information and dam break analysis.
- ▶ GZA will update the technical discussion within the EAPs for each dam to reflect the results of the previous tasks.
- ▶ Update pertinent sections of the Supporting Technical Information Document (STID).
- ▶ Similarly, we will revise sections of the STID that are directly affected by the updated dam break simulation results and sudden failure assessment.

## ASSUMPTIONS

GZA's scope of work incorporates the following assumptions:

- ▶ The most recent HEC-RAS model and supporting backup information (including any topographic survey, bathymetric survey, downstream bridge information, etc.) will be provided by the Authority.
- ▶ Inflow hydrograph(s) for the Inflow Design Flood will be provided by The Authority. Hydrologic analysis of the upstream watershed (e.g., rainfall-runoff modeling) is not included in our scope of work.
- ▶ The upstream and downstream limits of our HEC-RAS modeling and inundation mapping will be similar (i.e., within one stream mile) to that of the existing mapping in the EAP.
- ▶ EAP updates such as updating notification flow charts, personnel contact information, names and addresses of emergency management/responders is not included in our scope of work.
- ▶ Up to two days of a two-person GZA team will perform site reconnaissance and downstream field measurements. Professional survey is not included in our scope of work, as it is not anticipated to be necessary at this time.

## DELIVERABLES

Deliverables will consist of a draft and final version of the dam inundation modeling will be provided to the Authority. A single round of comment resolution is included to address Authority feedback and potential FERC considerations.



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## QUALITY CONTROL PLAN

GZA GeoEnvironmental, Inc. (GZA) maintains a Corporate Quality Control Plan that applies to all operating companies of GZA (GZA Policy Number 08-1010: *Corporate Quality Control Plan*). This policy is intended to apply a consistent philosophy to all Quality Assurance/Quality Control (QA/QC) practices carried out by GZA for headquarters services and field/construction activities. In general, this philosophy is based on two precepts: one, that each GZA employee is empowered, responsible and accountable for individual work product consistent with the corporate philosophy and two, that a separate QC monitoring function is maintained for all work on a project.

Beyond this overall plan, GZA maintains numerous other technical guidelines for various functions such as, for example, the Review of Professional Work Product, Technical Calculations, and Technical Reports.

The QA/QC program for all of GZA's work encompasses five basic elements

1. Thorough planning and specification of project and activity goals.
2. Initiation of quality standards.
3. Identification of and compliance with appropriate regulatory requirements and procedures.
4. Continuous application of QC measures to identify out-of-tolerance occurrences near the time they occur.
5. Establishment of control systems to confirm that deficiencies have been identified, evaluated, and corrected.



Because GZA conducts both **professional services activities** (i.e., engineering and design) and **construction activities** (i.e., remedial actions, test borings and construction drilling), application of this philosophy and program is divided and thereby implemented somewhat differently along these two types of services.

### PROFESSIONAL SERVICES ACTIVITIES

Each Principal in Charge (PIC) is responsible for the development of a Project Quality Control Plan in accordance with the requirements of the Corporate Quality Control Plan. This plan names the Consultant / Reviewer (C/R), Project Manager (PM) and/or Project Engineer (PE) and Outside Consultants, if any. This plan lays out the quality assurance required to demonstrate compliance with GZA's professional standard of care.

Quality Control for professional work product involves the review of the PM's work by another professional of comparable or higher training and experience. As alluded to above and somewhat unique to GZA, this review process involves typically two individuals: a C/R, who is uniquely qualified to establish an initial quality control plan and ultimately, review the technical aspects of the professional work product; and the PIC who has technical, financial, and schedule responsibility for the project.

### PROJECT PLANNING

The level of detail required for a project plan depends on the complexity of the professional service rendered by GZA. Careful planning considers many factors, including organizational and project objectives and applicable QA system requirements, including a QC Plan. This section describes the procedures used for successful planning and execution of the work that we secure. Applicable GZA policies for this section includes the following.



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- ▶ Proposal Preparation - Professional Service Projects – Policy 05-1500
- ▶ Subcontractor Pre-Qualification - Policy 05-1260 and 05-9029
- ▶ Master – Summary Contract and Proposal Policy - Policy 05-0100
- ▶ Project Planning/ Kick-off Meeting/Checklist
- ▶ Consultant/Reviewer Policy – Policy 04-0200

## ORGANIZATIONAL AND PROJECT OBJECTIVES

Planning facilitates efficient execution of work while achieving quality objectives and communicates project expectations to team members. The organizational objectives of planning are to provide team members with clear steps and procedures for the progress of the work. The tools utilized in the planning process should include some or all of the following.

- ▶ Planning, communication and kickoff meeting
- ▶ Checklists
- ▶ Project plans, budgets, schedules, etc.
- ▶ Policies and procedures

## RESPONSIBILITIES

The PIC has the primary responsibility for determining the type and complexity of the Project Plan needed to effectively communicate and meet the organizational and project/proposal objectives. The Plan can be as simple as a kickoff meeting to assign responsibilities to implement the required work or can be a formal written plan for complex proposals and projects. The PM is responsible for developing the Project Plan, whether it is in the form of kickoff meetings, checklists to identify project needs, and/or a formal written plan. Written plans must be prepared if required by regulation, client contract or project/proposal complexity; the PIC and C/R must review and approve all written Project Plans that will be submitted outside of GZA.

## RESOURCES

Several resources are available to GZA staff to assist in the planning process. These resources include budgeting worksheets such as the GZA Budgeting Workbook, Deltek, and scheduling software such as Microsoft Project®. In addition to these electronic resources, peers within GZA, technical guidance documents, and GZA Policies and Procedures are available to assist in project planning.

## ORGANIZATIONAL PLANNING

During the planning process, staff resources needed to execute the work and the means of communicating the objectives, goals, budgets, expectations, schedule and scope to staff are identified. The PIC evaluates the availability and technical ability of the proposed staff to conduct the work. As appropriate, the proposed scope, schedule and resources are also reviewed by key team members and the C/R for adequacy.

As a multi-office company, work is increasingly pursued beyond the typical footprint of an office. It is important that the PIC considers using resources/services beyond those offered beyond his/her home office.





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When performing work in geographic locations not typically serviced by GZA, the PIC is expected to confirm that GZA and key staff are, or can be, within the required timeframe, licensed and authorized to perform work in the geographic location of the Site, including coordinating with Risk Management, if necessary.

## PROJECT PLANNING

The purpose of the Project Plan is to facilitate project implementation and to facilitate a quality work product that is consistent with the contract terms and client expectations, and that meets or exceeds the standard of care and associated regulatory requirements. The Project Plan may also proactively identify potential gaps and allows flexibility to accommodate unexpected or unforeseen conditions.

Typically, the PM creates the Project Plan following input from the project team and key stakeholders. The Project Plan is agreed to and approved by at least the project team and its key stakeholders and may require C/R review. The Project Plan includes staffing assignments, a detailed project scope, budget breakdown by task and schedule and some or all of the following elements, depending on the type and complexity of the project:

- ▶ Written Project-specific Quality Assurance Project Plan (when required by contract or regulation)
- ▶ Field Work Plan
- ▶ Project Communications Plan
- ▶ Laboratory Analysis Plan; Health & Safety Plan
- ▶ Staffing Plan

## DATA COLLECTION

The data used as the basis of our professional recommendations often comes from field work, laboratory testing, research, or by a third party. The planning process identifies the field data that needs to be collected and the procedures to be used to collect the data. GZA's Standard Operating Procedures for the collection of field data must be considered. In addition to the Standard Operating Procedures, there are often regulatory guidance documents and/or industry standards that influence and direct the planning and execution of work. The applicable procedures, guidance documents and standards must be identified and incorporated into the plan.

For our work, it is often necessary to hire subcontractors (drillers, surveyors, etc.) to assist with the data collection. Communication of project requirements and support of our subcontractors is a key element to successful data collection.

## PROCESSING OF DATA

The data collected often needs to be processed to support professional recommendations and reporting. The project planning process identifies the likely data processing that will be needed and the steps to be taken to meet the quality objectives. All data that is collected directly by GZA staff is reviewed by the PM or their designee to confirm the data was collected in accordance with the applicable policies, procedures and/or guidance documents.



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## DATA ANALYSIS

Data analysis often involves making calculations in support of professional recommendations, but can also include statistical analysis, regression analysis, graphing, and comparison to standards or other activities. The type of data analysis that is appropriate is often project specific and not specified in GZA's policies and procedures. However, the type and depth of analysis must be identified in the project plan and is determined by the project scope, client needs, applicable regulations, and the standard of care for the work being performed.

## TABLE, FIGURE AND GRAPH REVIEW

All tables, figures, graphs, and other graphical representations of Site data or information must be completely (100%) reviewed using the original source data (such as laboratory or field reports) for accuracy by a person separate from the preparer of the table, figure, graph, etc. The review must be documented so that a record exists of the review to (1) avoid redundant review and (2) confirm that it has been performed. Corrections are brought to the attention of the person who prepared the table, figure, graph, etc., and resolved with the C/R and/or PIC, as appropriate. These reviews must be conducted prior to data analysis so that the analysis is not based on faulty information.

## CONSTRUCTION ACTIVITIES

Similar to Professional Services Activities, the PIC is responsible for the development of a Project Quality Control Plan in accordance with the requirements of the Corporate Quality Control Plan. This plan lays out the quality assurance required to demonstrate compliance with GZA's professional standard of care for GZA's staff, its subcontractors, and purchase/application of materials.

GZA's QC program for construction project activities is designed to ensure that the list of specific construction-related activities listed below, for example, are conducted in accordance with written work plans, specifications and/or instructions:

- ▶ Construction process for materials handling/storage, rigging, fabrication, installation, and operation/maintenance
- ▶ Purchase and storage of materials
- ▶ Construction inspection
- ▶ Test control
- ▶ Resolution of non-conforming items
- ▶ Use, inspection and calibration of test equipment
- ▶ Procurement, inspection and use of supplier materials
- ▶ Collection and testing of soil and water samples
- ▶ Health and Safety monitoring
- ▶ Procurement and management of subcontractor-supplied services

*GZA is committed to providing the highest quality service and deliverables to our clients.*



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Our corporate management continuously strives to improve our quality of work by maintaining and improving procedures and policies. GZA has a proven QA/QC program in-place with established scientific and engineering policies and procedures to conduct hazardous/toxic engineering services. As noted above, these procedures include an independent review of technical and engineering approach, calculations, drawings, and conformance to the statement of work.

The primary goal of our QA/QC program is to achieve the scope, schedules, cost, and quality on every project. Although each member of our proposed team for each contract assumes responsibility for the quality of work, the PIC and the designated QA/QC C/R are fully accountable for achieving the QC goals. They are guided in this process by standardized set of operating procedures and guidelines that address execution and control of technical work. GZA's corporate management has made these policies and procedures easily accessible by our staff through our Wide Area Network. GZA prepares a project-specific QC plan for every major contract as per the requirements of the client by making modifications to our corporate QC plans. We may modify the plans by incorporating new procedures or adding new program functions such as audits, sample acquisition, chain-of-custody, sample analyses, design documentation, etc., and policies depending on client's requirements or the nature of the contract.

The QA/QC C/R assigned directly oversees the project work for quality and advises the PIC and PM if any deviations from accepted procedures or protocols occur and advise him of actions necessary to correct these deviations. GZA's QA Program has the following key elements:

- ▶ Pre-established protocols for the conduct of field investigations, data validation, design criteria, and engineering calculations, etc.
- ▶ Review of all work plans to ensure that they are consistent with the quality assurance plans
- ▶ Field inspections, records review, and design audits to ensure that all protocols are implemented in accordance with the quality assurance plans
- ▶ Development and implementation of corrective actions if there are any deviations from the accepted norms, policies and protocols
- ▶ Ensuring that the goals and objectives of the client are met

The goal of GZA's QC is to ensure that the work is performed with the highest level of technical accuracy and soundness. It is the responsibility of the assigned project staff to implement the QC plan for every stage of the work process. Key elements of our QC include:

- ▶ Project staff are selected by the PM with recommendations and approval from the PIC
- ▶ The assigned staff fully understand the scope of work, the goals, budgets, schedules, and the organizational approach for each project
- ▶ Project work is performed by the appropriately trained and qualified staff
- ▶ QA/QC C/R ensures independent senior level peer review of the project deliverables completed prior to submission to the client
- ▶ Facilitation of open communication between the project staff of GZA and the client to ensure that all work is performed to meet the specific project objectives
- ▶ Diligent documentation of project activities to ensure that all work including project decisions, field investigations, and analysis receives regulatory approvals



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## PROPOSED PROJECT SEQUENCE AND TIMELINE

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GZA understands that this project is expected to be completed within the two-year maximum period. The dams to be modeled will be prioritized so that concurrent efforts can be completed and reviewed with the Authority in a timely manner.

### CATEGORY 1

Category 1 tasks will be initiated following project award and the historical data review, dam inspections, dam inspection reports and potential remedial options analysis is anticipated to be completed by the end of 2021.

### CATEGORY 2

Category 2 inundation mapping services will begin following the historical data review and dam / site reconnaissance activities with modeling efforts beginning in the fall 2021 and completion during the winter 2022.



## SECTION D | KEY PERSONNEL



## SECTION D | KEY PERSONNEL

### QUALIFIED AND SEASONED PROFESSIONALS

GZA's proposed project team draws from our multi-disciplinary practice in Dam Engineering, Geotechnical Engineering and Natural Hazard Risk Management and Geographic Information Systems through dam inundation studies and flood monitoring. Our team includes experienced professionals with local presence and significant project experience.



**WALTER KOSINSKI, P.E.**  
**PRINCIPAL-IN-CHARGE**

Walter Kosinski is a professional engineer with over 40 years' experience in the environmental and geotechnical engineering fields, managing a variety of projects with primary concentration on identifying common-sense, engineered solutions.

During the early portion of Mr. Kosinski's career, he served as the Resident Engineer during construction of several high hazard earthen dams. His responsibilities included overall on-site evaluation and quality control of the dam embankment construction involving rock foundation preparation; borrow source evaluation and soils testing; fill placement control; cutoff trench and grout curtain design and installation; concrete and steel placement control for primary and secondary spillways; and preparation of reports, drawings and documentation as required by the State of Ohio and U.S. Army Corps of Engineers.

More recently, Mr. Kosinski has performed Part 315 dam inspections in Michigan and served as one of several principal engineers during GZA's dam safety engineering inspections of numerous coal combustion residual (CCR) impoundments at a variety of coal-fired power generating

stations throughout the U.S. for the Environmental Protection Agency. Mr. Kosinski was directly responsible for dam inspections at eight sites: in Michigan (3), Indiana (4) and Arizona (1) and also performed project review of several other sites in Minnesota, Missouri, Ohio and Wisconsin.



**DAVID M. LEONE, P.E., C.F.M.**  
**QA/QC CONSULTANT REVIEWER**

David Leone is an Associate Principal of GZA, a hydraulic engineer, and GZA's Technical Practice Group Leader for dams and water resources projects. He specializes in flood hazard analysis, hazard risk management, and dam engineering.

Mr. Leone has over 22 years of experience, all with GZA. He is a licensed professional engineer in four states and a Certified Floodplain Manager (Association of State Floodplain Managers). He has previously served as Principal-in-Charge or Lead Project Manager/Reviewer for numerous dam failure simulation and inundation mapping projects, including Emergency Action Plan Updates for Great River Hydro's 16 New England dams. His dam engineering experience is also extensive. He performed dam failure and probable maximum flood evaluations at approximately 20 nuclear power sites throughout the United States.



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**CHRISTOPHER S. ADAMS, P.E.**  
**PROJECT MANAGER**

Chris Adams is an expert in dam engineering and civil engineering relating to water resource projects. He has been responsible for work on hundreds of dams, dikes, tailing dams, levees and weirs across the country. His experience includes design and construction of several new large

dams plus rehabilitation of numerous existing dams and spillway structures.

*Mr. Adams was approved by the Federal Energy Regulatory Commission (FERC) as an Independent Consultant, and he has conducted several Part 12D safety inspections of dams under their jurisdiction.*

Mr. Adams has an outstanding reputation in the dam engineering field among dam owners and regulatory agencies. He is one of a handful of engineers in New Jersey who has been accepted by the NJDEP Division of Dam Safety and Flood Control as having the required experience to be the Responsible Engineer for LARGE High Hazard Dams.



**CHRISTINE E. SUHONEN, P.E.**  
**ENGINEERING SUPPORT**

Christine Suhonen, P.E. is a Water Resources Engineer in the Dams and Water Resources Group at GZA specializing in the hydrologic and hydraulic analyses of riverine sites using software such as HEC-RAS, HEC-HMS, and ArcMap. She has expertise in both 1-D and 2-D

hydrodynamic methods and has presented GZA's dam failure simulation methodology at the Association of State Dam Safety Officials and Environmental and Water Resources Institute (ASCE) Annual Conferences over the last few years. She also has extensive experience in performing dam inspections, developing dam emergency action plans, facilitating dam safety/emergency action planning training, and scour analysis.



**SAMUEL BELL, CFM**  
**SENIOR RESILIENCY MANAGER**

Mr. Bell is a Senior Resiliency Planner with over 20 years of leadership and management experience covering natural hazard mitigation and resiliency planning, hazard mitigation assistance, environmental planning, permitting, community education and outreach, and

disaster resiliency research.

Sam is a member of GZA's Natural Hazard Risk Management Senior Leadership Team assisting in the integration of these services across 30 GZA offices around the United States (U.S). He has extensive experience providing technical assistance to Federal agencies, State agencies, U.S. Territories, Counties, and communities on disaster recovery and climate resiliency projects designed to protect critical facilities, natural resources, public and private infrastructure, and residences. Mr. Bell also has extensive experience leading interdisciplinary teams in the development of numerous coastal resilience, climate adaptation and natural hazard mitigation plans in the Northeast and currently expanding to the Great Lakes.

From 2007 to 2010, Mr. Bell served as a Hazard Mitigation Grant and Planning Team Lead for the Federal Emergency Management Agency (FEMA). Mr. Bell provided hazard mitigation assistance (HMA) and disaster recovery support throughout the United States (U.S.) for HMA programs and in response to federal disaster declarations. In New Hampshire, Mr. Bell worked with the New Hampshire's Homeland Security and Emergency Management and Office of Energy and Planning, and FEMA to identify strategies and hazard mitigation solutions to protect residences, and commercial and critical facilities from incurring damages from future natural hazards in response to several natural disaster declarations.



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**HEIDI WOELFEL, P.G.  
PUBLIC OUTREACH**

Heidi has extensive experience overseeing and conducting complex environmental projects including various City of Milwaukee redevelopment projects. She also has growing project management experience and training to manage a variety of project aspects from

inception to completion.

Heidi is skilled at coordinating public outreach events that communicates the community's vulnerabilities and developed a consensus among key stakeholders for the strategies that can be incorporated into short-term and long-term planning. To ensure the strategies are appropriate to the community's needs, and in keeping with their long-term vision and vitality, information is shared with, and input obtained from local officials and the public which is a key element of many projects.

Resumes for all team members can be found in Appendix A.



**DANIEL BOUDREAU, GISP  
GIS, GEOSPATIAL, MAPPING TECHNICAL  
SPECIALIST**

Dan Boudreau provides GIS, geospatial analysis and mapping services. He has extensive experience in all aspects of geospatial technology. As a certified GIS Professional, he brings over 30 years of combined CAD and GIS

experience in data management, data development/conversion, spatial analysis, cartographic design and production as well as field data collection for asset management, water resources and environmental assessment. He co-developed the GZA GeoTool© web mapping platform, which is central to several of GZA's Technical Practices such as Natural Resources, Water Resources, Stormwater Management, Asset Management and Natural Hazards Mitigation and Resilience practices.





## SECTION E | BUDGET REVIEW



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## SECTION E | BUDGET REVIEW

### INTRODUCTION

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Addenda 1 issued by the Huron-Clinton Metropolitan Authority negates the necessity to provide the information requested in the original RFP. GZA's Cost Proposal is provided in Section II.

This section is included to follow the sequence of information requested in the RFP.





## SECTION F | REFERENCES

# SECTION F | REFERENCES

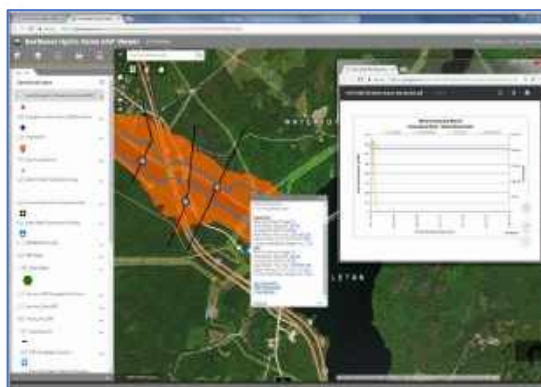
## REFERENCES

There is no better testimony than that of a recommendation from a satisfied client. As requested, GZA is pleased to provide the following list of projects with their associated client contact information for your use. Please feel free to contact those listed as they will attest to our firm’s professionalism, technical expertise, and responsiveness.

**CLIENT:** GREAT RIVER HYDRO, LL

**CONTACT:** Mr. Jeff Blaney  
**TITLE:** Chief Dam Safety Engineer  
 ☎ 603-298-4140  
 ✉ [jblaney@greatriverhydro.com](mailto:jblaney@greatriverhydro.com)

**PROJECT:** Emergency Action Plan Updates and Dam Break Modeling for 16 Hydropower Dams at Various Locations in VT, NH, MA and RI



**CLIENT:** AQUARION WATER COMPANY

**CONTACT:** Ms. Carolyn Ciampe  
**TITLE:** Manager of Capital Program Delivery  
 ☎ 203-337-5908  
 ✉ [cgiampe@aquarionwater.com](mailto:cgiampe@aquarionwater.com)

**PROJECT:** Inundation Mapping and Emergency Action Planning for 16 High Hazard Dams and 8 Significant Hazard Dams on behalf of Aquarion Water Company



**CLIENT:** OX ENGINEERED PRODUCTS

**CONTACT:** Mr. Maruthi Srivatsan  
**TITLE:** Site Engineer  
 ☎ 269-435-2425  
 ✉ [msrivatsan@oxep.com](mailto:msrivatsan@oxep.com)

**PROJECT:** Dam Evaluation of the Upper Constantine Dam (ID No. 554) in Constantine, Michigan





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## APPENDIX 1 | RESUMES



## Walter Kosinski, P.E.

Principal

### Summary of Experience

Mr. Kosinski is a professional engineer with over 38 years of experience in the environmental and geotechnical engineering fields, managing a variety of projects with primary concentration on groundwater and geotechnical engineering and applying these disciplines when evaluating remedial alternatives, remedial design and implementation. His extensive experience includes the use of numerous subsurface exploration and sampling techniques; geophysical analysis; soil gas monitoring; sediment sampling and analysis; pumping well development / pump test analyses; interpretation and analytical studies of groundwater flow characteristics including two- and three-dimensional fate and transport modeling; design / installation of groundwater recovery and isolation systems; identification and screening of remedial technologies; feasibility study preparation including detailed cost analysis in accordance with state regulatory and EPA guidance documents; field testing and verification analyses of remedial alternative implementation; preparation of contract specification documentation pursuant to regulatory guidelines and directives and construction management of foundation and remedial alternative systems. Mr. Kosinski serves as GZA's lead senior technical reviewer for projects being performed in Michigan, as well as Ohio, Illinois and Indiana. During the past 28 years in Michigan, he has developed excellent working relationships with the state regulators in the Great Lakes region.

### Relevant Project Experience

**Principal Engineer, Upper Constantine Dam Evaluations, ID #554, Constantine, Michigan.** GZA was responsible for the dam evaluation performed in 2010 and 2014 under Michigan's Part 315 Dam Safety Program. The dam evaluations included: condition; spillway capacity; operational adequacy; structural integrity; identification of deficiencies and/or areas in need of repair; and, recommendations for maintenance, repair, and/or alterations regarding the dam. Following report review and discussion with the dam owner, GZA provided the final report to the Michigan Department of Environmental Quality on behalf of the owner to maintain Part 315 regulatory compliance.

**Principal Engineer, CCR Impoundment Inspections in Michigan, Indiana, and Arizona.** GZA conducted dam safety engineering inspections of combustible coal ash impoundments for the U.S. EPA as part of a nationwide program in response to the December 2008 coal ash dike failure at TVA/Kingston, Tennessee. The purpose of the investigations was to visually inspect and evaluate the condition of the dam and appurtenant structures to identify conditions that could adversely affect their structural stability and functionality, to note the extent of any deterioration, to review the status of maintenance and planned repairs, and to evaluate the conformity with current design and construction standards of care. Mr. Kosinski was directly responsible for the review, inspection and reporting of the dam structures at the following facilities: Consumers Energy, D.E. Karn Generating Station, Essexville, MI; Detroit Edison, Monroe Power Station, Monroe, MI; Northern Indiana Public Service Corporation (NIPSCO) Bailey Generating Station (Chesterton, IN), D.H. Mitchell Generating Station (Gary, IN), and Michigan City Generating Station (Michigan City, IN); Ohio Valley Electric Corp/Indiana Kentucky Electric Corp., Clifty Creek Generating Plant, Madison,

### Education

B.S., 1974, Civil and Environmental Engineering, University of Rhode Island  
M.S., 1977, Civil and Environmental Engineering, University of Rhode Island

### Registrations & Certificates

Professional Engineer – 1993, Michigan, #6201038731  
Professional Engineer – 2002, Ohio, #E-66778  
Professional Engineer – 2002, Indiana, #PE10201153  
Professional Engineer – 2002, Illinois, # 062-055974  
Professional Engineer – 2002, Wisconsin, #35558  
Professional Engineer – 2006, Arizona, #44849

Ohio Environmental Protection Agency, Voluntary Action Program, Certified Professional #CP196

### Affiliations

- American Council of Engineering Companies of MI (ACEC)
- American Society of Civil Engineers (ASCE)
- Michigan Association of Environmental Professionals (MAEP)
- National Brownfields Association (NBA), MI Chapter

### Areas of Specialization

- Remedial Investigations/Feasibility Studies
- Geotechnical Engineering
- Remedial Alternatives Engineering
- Groundwater Flow / Transport Modeling
- RCRA Facility Investigations / Permits / Closures
- Phase I & II ESAs / BEAs



## Walter Kosinski, P.E.

Principal

IN; and Salt River Project, Coronado Generating Station, St. John's, AZ. The reports prepared by Mr. Kosinski included recommendations for remedial measures to correct deficiencies with respect to the observed embankment conditions and items such as the spillway design flood and seismic stability analysis of upstream and downstream slopes.

**Principal Engineer, Middle Comstock Dam Evaluation, Comstock Township, ID #137, Kalamazoo County, Michigan.** Mr. Kosinski responded to an urgent request from Comstock Township regarding the dam stability. The Middle Comstock Dam (Michigan ID No. 137) was constructed in the late 1800's and little information was known regarding the structure. Mr. Kosinski initially visited the site to evaluate the Township's concern and found that the dam was stable and in fair condition. Although the dam was not regulated under Michigan Part 315 Dam Safety Regulations, GZA proposed to perform a dam evaluation consistent with the requirements of Part 315 and with the Federal Guidelines for Dam Safety to identify items that could be performed to improve the overall dam condition. The dam evaluation identified several maintenance items and deficiencies that needed to be corrected. GZA provided a summary report that listed the items of concern and provided draft construction drawings for maintenance and repair by the Township. Although not required by regulation, GZA also assisted the Township with compiling the information for an Emergency Action Plan.

**Resident Engineer, Alum Run Coal Slurry Refuse Disposal Dam, Clarington, Ohio.** GZA was responsible for the design and quality control during construction of an embankment dam constructed within a valley to provide storage of the slurry generated during coal mining operations. Mr. Kosinski initially assisted with the embankment design and subsequently spent approximately 2.5 years on site as the resident engineer during construction of the 140-foot-high "starter" dam (approximately 850,000 cubic yards). Mr. Kosinski was directly responsible for the on-site evaluation of: rock foundation preparation including cutoff trench key; creek diversion and contingency planning for storm events during construction; borrow source evaluation including an on-site geotechnical laboratory for performance of geotechnical testing; fill placement control including training of coal mine employees to assist with the field compaction testing; cutoff trench and grout curtain design and installation within the fractured rock foundation; drainage blanket and chimney drain construction within the dam; concrete and steel placement control for the 3-foot-diameter decanting pipe system (primary spillway); Instrumentation installation and real-time monitoring for hydraulic pressure, settlement and slope stability; and, preparation of reports, drawings and documentation as required by the Ohio DNR and Mine Safety Health Administration as well as the U.S. Army Corp of Engineers.

**Site Engineer, Palisades Nuclear Power Station, Palisades, Michigan.** GZA was responsible for the geotechnical evaluation of soil conditions along the travel path used for moving the nuclear plant's generator stator transport vehicle. The stator weighs more than 100 tons and was being moved for refurbishing and replacement. GZA utilized existing subsurface information and performed a soil boring and laboratory testing geotechnical conditions prior to confirm subsurface soil conditions along the transport vehicle pathway. GZA's geotechnical staff subsequently performed, and Mr. Kosinski reviewed, the slope-stability analysis of the steeply sloping travel loaded Stator on loose dune sands along the Lake Michigan shoreline and the significant loads associated with the transport of the generator stator. Ground pressures were estimated to be as high as 1,700 psf during transport up the steep slope approximately ½ mile long. The roadway could not be widened due to preservation of natural lake front. Mr. Kosinski was on-site to direct real time monitoring of the slope and transport vehicle during the generator stator movement. The generator stator was successfully moved to firm ground for subsequent transport from the site.

**Project Technical Reviewer, Grassy Island Geotechnical Evaluation, Grassy Island, Michigan.** GZA performed a geotechnical evaluation on behalf of the U.S. Bureau of Reclamation and Fish & Wildlife Service, of this former confined disposal facility (CDF) located within the Detroit River. The site evaluation included numerous sampling techniques of the perimeter man-made dikes including hollow stem auger soil borings, thin-walled tube sampling, monitoring well installation, pneumatic slug testing, cone penetrometer testing, and data logger programming and installation. One objective of the project was to evaluate the stability and condition of the perimeter dike.





## David M. Leone, P.E., C.F.M.

Associate Principal/Hydraulic Engineer

### Summary of Experience

Mr. Leone is a civil engineer in GZA's Water Services Group who specializes in flood hazard analysis, hazard risk management, and dam engineering. He has over 22 years of experience, all with GZA, is a licensed professional engineer in four states (New York, Massachusetts, Connecticut, and Rhode Island) and a Certified Floodplain Manager (Association of State Floodplain Managers).

Mr. Leone's flood hazard assessment and hazard risk management expertise includes hazard vulnerability assessments focusing on surface water hydrology, open-channel hydraulics, stormwater, and two- and three-dimensional hydrodynamics. Mr. Leone has extensive experience with analysis of both riverine and coastal environments, including application of site-specific Probable Maximum Precipitation studies, the combined effects of stormwater, groundwater, and riverine and coastal flood mechanisms. His expertise includes simulation of rainfall/runoff and hydrodynamic processes, hydraulic structures, and mapping using state-of-the practice computer software and geographic information systems (GIS).

### Relevant Project Experience

**Post-Fukushima Flooding Hazard Re-evaluations, Indian Point Energy Center (New York) and other numerous sites (2012-2018).** After the Japan Fukushima tsunami, the Nuclear Regulatory Commission required that all nuclear power plants re-evaluate their flood hazards. These flood studies represent the most significant flood hazard evaluations performed in the U.S. during the last decade. GZA's Climate Change and Flood Hazard Mitigation team has performed, to date, \$8M flood hazard assessment and mitigation studies for 35% of the U.S. nuclear power fleet, including the Surry Power Station in Virginia.

GZA has completed "State-of-the Practice" external flood evaluations, using the most sophisticated modeling techniques currently available and performed in accordance with the highest level of quality assurance procedures used in the United States. Similar to all climate change and flood hazard studies, this project involved: a) Evaluation of the climate regime and meteorological storm parameters; b) Flood characterization and inundation modeling for coastal, riverine (site-specific PMP and dam failure analysis), and local intense precipitation flood hazards and development of flood duration, flow velocities, hydrodynamic, hydrostatic, impact loads; c) Vulnerability assessment (comparison of re-evaluated hazards to current design bases), and d) Development of Mitigation Strategy concepts and Stakeholder Communication.

**Inflow Design Flood Analysis for Lake Upchurch Dam, Raeford, North Carolina (2019-Present).** Mr. Leone serves as the Lead Hydrologist for the development of an updated Inflow Design Flood analysis for this privately-owned dam in North Carolina. The dam's contributory watershed is approximately 180 square miles. The original design flood was developed more than 15 years ago, and due to recent floods-of-record in the state (Hurricanes Matthew and Florence in 2016 and 2019), FERC required the owner to re-evaluate the IDF. GZA developed an updated hydrologic model, calibrated to Matthew and Florence. We then performed Incremental Damage Assessment using a two-dimensional HEC-RAS model. GZA evaluated the potential downstream consequences using a blend of model results, U.S. Bureau of Reclamation guidance, and

### Education

B.S., 1996, Civil Engineering, Worcester Polytechnic Institute  
M.S., 1998, Civil Engineering, University of Massachusetts, Lowell

### Registrations & Certificates

Professional Engineer, Massachusetts, 45877  
Professional Engineer, Connecticut, 28563  
Professional Engineer, Rhode Island, 9778  
Professional Engineer, New York, 096864  
Professional Engineer, NCEES Record Holder  
Certified Floodplain Manager, Association of State Floodplain Managers

### Areas of Specialization

- Flood Hazard Vulnerability Assessment
- Flood Resiliency Planning and Design
- FEMA Floodplain Mapping Revisions and Analyses
- Dam and Levee Engineering Assessment and Design
- Dam Emergency Action Planning
- Surface Water Hydrology
- Hydraulic Engineering
- Scour at Bridges
- 2-D Hydrodynamic Modeling
- Stormwater Management and Design
- Water Resources Management
- Geographic Information Systems



## David M. Leone, P.E.

Associate Principal/Hydraulic Engineer

engineering judgment. The work was summarized in a report that is under review by FERC.

**Hydrologic Investigation of Cannonsville and Downsville Dams, New York. (1998-2005)** GZA provided engineering consulting services for the New York City DEP-Bureau of Water Supply, Quality, and Protection at their Catskill and Delaware System Dams including Cannonsville Dam and Reservoir and its 456 square-mile drainage area. The main objectives of the hydrologic and hydraulic portion of the project included the evaluation of current spillway capacity and the preparation of hypothetical dam break inundation mapping as part of an Emergency Action Plan (EAP). The spillway capacity evaluation involves the use of several computer models including: the National Weather Service HMR-52 computer model to estimate the Probable Maximum Precipitation (PMP) for the area, ArcView (GIS) to assess the soil types in the watershed, HEC-1 to perform rainfall-runoff simulations, and HEC-RAS. Mr. Leone's responsibilities included development of these models, dam break analyses, and preparation of Inundation Maps.

**Flood Frequency Analyses for Nuclear Site, Major Inland River Watershed (2014-15).** GZA provided technical support for a nuclear power site in the southern U.S. on a major river to respond to a Nuclear Regulatory Commission enforcement action related to potential flooding. Mr. Leone was the lead hydrologist. GZA was responsible for the estimation of flood frequency information for the site to quantify the risk of flooding the site. The scope of work included development of flood frequency curves through a combination of stream gage analysis based on USGS Bulletin 17B and other statistical procedures such as the Expected Moment Algorithm approach. To extend the period of record for analysis, an analysis of rainfall stations was also evaluated and tied into the deterministic analysis of the Probable Maximum Precipitation and Probable Maximum Flood. GZA's work was peer reviewed by Jeff Harris, formerly the head of the US Army Corps of Engineers Hydraulic Engineering Center. GZA (Mr. Leone) presented the analysis and responded to NRC questions and comments during the enforcement conference in 2014.

**Dam Failure and Inflow Design Flood Analysis for Great River Hydro Dams, Northern New England (2016-2018).** Mr. Leone serves as the Lead Hydrology Reviewer for the performance of Inflow Design Flood Analyses and dam failure simulation and inundation mapping for four FERC-regulated Great River Hydro Dams in New Hampshire and Vermont. GZA

performed the dam break analyses with a 1-D unsteady flow model using HEC-RAS version 5.0.1. GZA used the mapper feature in HEC-RAS to map the results within minutes after breach runs were simulated. GZA also developed an interactive web-based application that presents the inundation maps and data for Great River Hydro's High Hazard dams. The web-based application, the GZA GeoTool ©, displays data, documents and imagery that is hosted on GZA's Enterprise Portal and allow the user to easily and securely view the various features of an inundation map.

**Engineering Assessment of Two Water Supply Dams, New York State (2012).** Aquarion Water Company retained GZA to provide engineering assessments of two of their water supply dams located in Westchester County. GZA performed a visual inspection of the dams, developed seepage and slope stability calculations, and conducted spillway adequacy analyses for floods up to one-half of the Probable Maximum Flood. Mr. Leone served project manager for the effort and provided oversight of GZA's technical staff for the project in addition to serving as a technical resource for Aquarion.

**Project Engineer, Knightville Dam Hydrologic and Hydraulic Analysis, Huntington, Massachusetts (2011).** The Knightville Dam is an important flood control structure operated by the U.S. Army Corps of Engineers. GZA provided engineering assistance to the Corps by performing a hydrologic and hydraulic analysis of the dam to assess its spillway adequacy under the conditions of the Probable Maximum Flood. Our evaluation also included wave run-up analyses, conceptual evaluation of potential measures to add hydraulic capacity, and dam break simulation and inundation mapping. Mr. Leone served as the lead project engineer for the work.

**Spillway Adequacy Analyses for Aquarion Water Company Dams, Throughout Connecticut (2010-2013).** GZA has conducted spillway adequacy and dam failure analysis for over 20 Aquarion Water Company dams in the states of Connecticut, Massachusetts, and New York. Mr. Leone was responsible for: (a) overseeing the execution of hydrologic and hydraulic models and dynamic dam break flood routing through the river valley for both fair weather and wet weather scenarios, (b) assessing spillway capacity at each dam and estimating minimum freeboard under design floods ranging from the 100-year return period to the Probable Maximum Flood; and (c) preparation of inundation maps for incorporation into Emergency Action Plans.



## Christopher S. Adams, P.E.

Principal

### Summary of Experience

Mr. Adams is an expert in dam engineering and civil engineering relating to water resource projects. He has been responsible for work on over 200 dams, dikes, tailing dams, levees and weirs across the country. His experience includes design and construction of several new large dams plus rehabilitation of numerous existing dams and spillway structures. Mr. Adams has been responsible for conducting over 300 dam inspections in the past few years, including over 60 in 2018.

Mr. Adams has an outstanding reputation in the dam engineering field among dam owners and regulatory agencies. He is one of a handful of engineers in New Jersey who are accepted by the NJDEP Division of Dam Safety and Flood Control as having the required experience to be the Responsible Engineer for LARGE High Hazard Dams. Mr. Adams was approved by the Federal Energy Regulatory Commission (FERC) as an Independent Consultant and he has conducted several Part 12D safety inspections of dams under their jurisdiction.

Mr. Adams received a 2018 ASDSO Northeast Regional Award of Merit for his volunteer work supporting the ASDSO's continuing education programs to meet New York State Professional Engineer requirements.

### Relevant Project Experience

#### FERC/ENERGY PROJECTS

**Yards Creek Pumped Storage Generating Station.** The Chief Dam Safety Engineer in support of the Dam Safety Program for this 420-MW pumped storage generating facility located in northwest New Jersey. Independent Consultant for FERC Part 12D Inspection conducted in 2015. Previously, consultant for various dam engineering tasks for the numerous dam structures. Work consisted of conducting time sensitive dam breach modeling and the design of early warning instrumentation which was installed in 2013. Currently responsible for evaluation of instrumentation action levels.

**Raeford Hydroelectric Project.** Independent Consultant for the FERC Part 12D Inspection conducted in 2014 of this hydroelectric generating facility located on a tributary of the Cape Fear River in North Carolina. Responsibilities included participating in an updated PFMA session, preparing the PFMA Report and preparing a Supporting Technical Information Document. Currently the Chief Dam Safety Engineer for the project. Currently leading the effort to respond to requirements by FERC to update the 2005 H&H Study and reevaluate spillway capacity.

**Allegheny No. 5 and No. 6 Hydroelectric Project.** Independent Consultant for the FERC Part 12D Inspection of hydroelectric generating facility located at Allegheny Lock & Dam No. 5 and No. 6 on the Allegheny River in Pennsylvania.

**Seneca Pumped Storage Generating Station.** The Dam Safety Engineer in support of the Dam Safety Program for this 451-MW pumped storage generating facility located adjacent to the Allegheny River in Pennsylvania. Mr. Adams was the Independent Consultant for the FERC Part 12D Inspection conducted in 2014. A key component of

### Education

B.S., 1980, Civil Engineering, University of Illinois

M.S., 1981, Geotechnical/Structural Engineering, University of Illinois

### Licenses & Registrations

Professional Engineer – 1985, New York, # 062313-1

Professional Engineer – 1986, New Jersey, # 24GE03130000

### Areas of Specialization

- Civil Engineering
- Dam Engineering
- Geotechnical Engineering
- Structural Engineering
- Water Resources Engineering
- Wetland Restoration



## Christopher S. Adams, P.E.

Principal

the facility is the Upper Reservoir that is formed by a circular ring dike, approximately 1/2 mile in diameter and varying in height from about 32 to 115 feet. The Upper Reservoir is over 500 feet in elevation above the river.

### OTHER DAM PROJECTS

**New York Dams.** Mr. Adams is currently or was recently the responsible engineer for engineering work on the following dams in New York State:

- |  |  |
|--|--|
| Beaver-Dam-Lake-Dam, Orange-County¶          | Potake-Pond-Dam, Suez-Water-New-York¶        |
| Van-Derheyden-Dam, Rensselaer-County¶        | Indian-Kill-Reservoir-Dam, Suez-Water-NY¶    |
| Roaring-Brook-Dam, Putnam-County¶            | Stony-Point-Dam, Suez-Water-New-York¶        |
| Peekskill-Reservoir-Dam, Putnam-County¶      | Langshur-Dam, Suez-Water-New-York¶           |
| Timber-Lake-Estates-Dam, Sullivan-County¶    | Ambrey-Pond-Dam, Suez-Water-New-York¶        |
| Pine-Bush-Lake-Dam, Sullivan-County¶         | Cranberry-Pond-Dam, Rockland-County¶         |
| Alexander-Lake-Dam, Tioga-County¶            | Echo-Lake-Dam, Sullivan-County¶              |
| Burnt-Hope-Lake-Dam, Sullivan-County¶        | New-Croton-Dam, NYC-Watershed¶               |
| Cobleskill-Reservoir-Dams, Schoharie-County¶ | Gilboa-Dam, NYC-Watershed¶                   |
| Loon-Lake-Dam, Warren-County¶                | Martin-Dunham-Dam, Grafton-Lakes-State-Park¶ |
| Bedford-Lakes-Dam, Westchester-County¶       | Black-River-Dam, Cherry-Plains-State-Park¶   |
| Roxbury-Lake-Dam, Delaware-County¶           | Long-Pond-Dam, Grafton-Lakes-State-Park¶     |
| Camp-Echo-Lake-Dam, Sullivan-County¶         | Second-Pond-Dam, Grafton-Lakes-State-Park¶   |
| Sunrise-Lake-Dam, Sullivan-County¶           | Mill-Pond-Dam, Grafton-Lakes-State-Park¶     |
| Sidwell-Lake-Dam, Sullivan-County¶           | Sebago-Lake-Dam, Harriman-State-Park¶        |
| Lake-Lincolndale-Dam, Westchester-County¶    | Lake-Tjorati-Dam, Harriman-State-Park¶       |
| Kinderogen-Dam, Westchester-County¶          | Little-Dam-Lake-Dam, Harriman-State-Park¶    |
| Lake-Charles-Dam-and-Dike, Putnam-County¶    | Swan-Lake-Dam, Rockefeller-State-Park¶       |
| Lake-DeForest-Dam, Suez-Water-New-York¶      | Hempstead-Lake-Dam, Hempstead-State-Park¶    |

**NJ DPMC Agency Consultant Program Contracts.** Responsible for civil and environmental services conducted by Civil Dynamics under the Agency Consultant Program contracts for Civil and Environmental Engineering for the DEP, Division of Parks and Forestry and/or the Office of Resource Development 2005 – 2017 and continuing as GZA, completing over 150 work orders under seven contracts, on a range of civil engineering and dam/levee design: more than 100 dam inspections, numerous EAPs, dam decommissioning, septic design, numerous dam repairs, conceptual design of boat ramp improvements, flood hazard mitigation, design of two grinder sewage pumps, development and certification of a Soil Erosion and Sediment Control Plan, and design of Tiger Salamander habitats at the Lizard Tail Swamp Preserve.

**Various Dam Rehabilitation Projects for the State of New Jersey.** Principal in charge of the analyses, design, permitting and construction inspection for the rehabilitation and reconstruction of numerous dams owned by the State of New Jersey.

- |                         |                           |
|-------------------------|---------------------------|
| • Lake Musconetcong Dam | • Whites Pond Dam         |
| • Lake Hopatcong Dam    | • Harrisonville Lake Dam  |
| • Elmer Lake Dam        | • Maskells Mills Pond Dam |
| • Willow Crest Dam      | • Thundergut Pond Dam     |
| • Twin Lakes Dam        | • Upper Mill Pond Dam     |

**Inundation Mapping and EAPs for State-Owned Dams.** Principal in charge of the hydrologic and hydraulic studies and inundation mapping for eight (8) dams owned by the State of New Jersey.

**New Croton Dam.** The dam is a component of the New York City water supply system and a National Historic Civil Engineering Landmark. The City must upgrade the dam and desires to increase the spillway capacity, which has the potential to significantly impact the historic structure. Mr. Adams provided structural and dam engineering services to the Value Engineering Study for the City during the Preliminary Design Phase.

**Jersey City - Boonton Reservoir Dams.** Responsible Engineer for the 2006, 2012 and 2015 Formal Inspections and the 2008, 2013 and 2014 Regular Inspections of the two large high hazard dams at the Boonton Reservoir owned by the City of Jersey City. Boonton Dam is a cyclopean concrete gravity dam that is 2,100 feet long and 115 feet high. Parsippany Dike is an earth embankment that is 3,200 feet long and 30 feet high. Currently designing the replacement of four large sluice gates.



## Christopher S. Adams, P.E.

Principal

**Spruce Run and Round Valley Reservoirs.** Responsible Engineer for the 1998 and 2004 Formal Inspections of the various large high hazard dams at the two reservoir facilities owned and operated by the New Jersey Water Supply Authority. Spruce Run Reservoir Dam is a 6,000-foot long earth embankment with a maximum height of 90 feet. There are three earth embankment dams at Round Valley Reservoir, the largest being 1,400 feet long and 180 feet high.

**City of Newark - Pequannock Watershed Dams.** Principal Engineer for the fifteen dams within the Pequannock Watershed which are owned and operated by the City of Newark. Most of the dams are Large, Class I-High Hazard structures. Work includes Formal and Regular Inspections, design of rehabilitation work, EAP preparation, O&M Manual preparation. Two of the largest dams at Charlotteburg and Clinton Reservoirs were rehabilitated under the supervision of Mr. Adams in 2001.

The Charlotteburg Reservoir Dam is a 100-foot high concrete gravity dam with a 5-foot high Bascule gate. The scope of the rehabilitation included repairs to the 48-inch sluice gates, 30-inch cone valves, and 30 and 24-inch Howell-Bunger valves.

**Clyde Potts Reservoir Dam.** Responsible Engineer for the 2014 and 2017 Formal Inspections of this LARGE High Hazard Dam in Morris County. Additional engineering studies including hydrologic and hydraulic modeling, stability analyses and instrumentation review were conducted in 2016 to 2018. Additional tasks are planned for 2019.

**Best Lake Dredging and Dam Restoration:** Principal in charge for the development of construction plans and specifications for the dredging of an existing lake and rehabilitation of existing embankment dam. Investigation and design of lake dredging project included sediment sampling and testing, hydrologic and hydraulic modeling, wetland impacts and mitigation, bank stabilization and water quality issues. Responsible for all permitting and construction phase services. Award-winning project.

**Four Dams in Grafton Lakes State Park.** Principal responsible for the hydrologic and hydraulic evaluation of alternatives of four dams including the large Martin Dunham Reservoir Dam in Grafton Lakes State Park for the New York State Office of Parks, Recreation & Historic Preservation. Mr. Adams was then responsible for the design of the major rehabilitation of the Martin Dunham Dam to increase the spillway capacity and address other dam safety deficiencies. Mr. Adams was also responsible for the design of repairs to the smaller Mill Pond Dam.

**Black River Pond Dam.** Principal responsible for the hydrologic and hydraulic evaluation of rehabilitation of a large dam in Cherry Plain State Park for the NYS Office of Parks, Recreation & Historic Preservation.

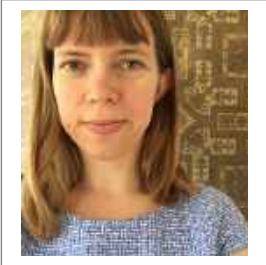
**Clinton Mills Dam and Dike.** Principal responsible for the evaluation and development of design alternatives to bring structures in compliance with Dam Safety Standards. The Final Design and Permitting Phases were completed in 2009 and the construction was completed in 2011. The work is complicated by structures' historic nature and prominence in Clinton, NJ historic district of Clinton.

**Manasquan Reservoir System.** Supervised the final investigation program and preparation of the final design plans and specifications for the new dams at the Manasquan Reservoir System in Monmouth County for the New Jersey Water Supply Authority. The system consists of a 760-acre reservoir, a 5-mile long pipeline and an intake facility on the Manasquan River. The reservoir is impounded by a 60-foot high dam and a 35-foot high dike. Resident engineer during the 2½-year construction phase of the Manasquan Reservoir System. Project Manager for Regular and Formal Inspections of the dams at the Manasquan Reservoir System in 1991, 1992, 1994 and most recently in 2012, 2015, and 2018.

### Affiliations/Memberships

- Association of State Dam Safety Officials (ASDSO)
- Northeast Council for Safe Dams
- American Society of Civil Engineers
- American Concrete Institute
- Chi Epsilon, National Civil Engineering Honorary Society
- New York State Federation of Lake Associations
- NJ Coalition of Lake Association





## Christine E. Suhonen, P.E.

Project Manager/Water Resources Engineer

### Summary of Experience

Ms. Suhonen is a Water Resources Engineer in the Dams and Water Resources Group at GZA. She joined GZA in November 2012 with a bachelor's degree in environmental engineering. Most of her work at GZA includes the hydrologic and hydraulic analyses of riverine sites using software such as HEC-RAS, HEC-HMS, and ArcMap. Other work includes dam inspection reports, dam emergency action plans, and scour analysis. Other software that Ms. Suhonen uses includes FLO2D, Culvert Master, and MathCAD.

### Relevant Project Experience

**Lake Upchurch Dam Spillway Capacity Analysis and Incremental Damage Analysis, NC.** Floods in September and October 2016 caused severe damage to the Lake Upchurch Dam's auxiliary spillway. The Federal Energy Regulatory Commission (FERC) requested a re-evaluation of the dam's Inflow Design Flood (IDF) with consideration of proposed remediation alternatives. The Lake Upchurch Dam Preservation Association engaged GZA to provide dam engineering support. Ms. Suhonen guided junior staff through (1) updating the rating curves for the dam's various spillways to evaluate the effect of removing the auxiliary spillway (2) simulating historic storms in HEC-HMS to verify the HEC-HMS model, and (3) performing 2-dimensional dam break modeling to re-evaluate the dam's Inflow Design Flood. Lake Upchurch Dam is also called Raeford Hydroelectric Project, FERC No. P-6619.

**Emergency Action Plan Updates and Dam Break Modeling for Great River Hydro (GRH) Hydropower Dams, VT, NH, MA, and RI.** GZA was contracted by GRH to perform Emergency Action Plan updates for 17 dams in New England. The updates included reformatting the EAPs to conform with updates in the FERC Engineering Guidelines for the Evaluation of Hydropower Projects. The FERC guidelines were revised in 2015 to conform with the FEMA Publication No. P-64 – Federal Guidelines for Emergency Action Planning for Dams. As part of the update, GZA conducted dam break analyses for 6 of the dams. The dam break analyses were used to develop updated inundation maps for the EAPs. For 4 dams, the dam break analyses were also used to evaluate the hazard classification and Inflow Design Flood (IDF). The dam break modeling was performed with 1-dimensional and 2-dimensional HEC-RAS software. In total, GZA modeled flooding along 270 river miles of the Connecticut and Deerfield Rivers. GZA was also contracted to develop an interactive web-based application that presents the inundation maps for Great River Hydro's High Hazard dams. The web-based application displays imagery that is hosted and updated by Esri. The interactive maps allow the user to turn layers on and off to easily view the various features of an inundation map. Ms. Suhonen was the primary project engineer for this work.

**Monksville Reservoir Dam Supplemental PMP Analysis, Ringwood, NJ.** GZA was contracted by the North Jersey District Water Supply Commission (NJDWSC) to update the Probable Maximum Precipitation (PMP) analysis for the reservoir and dam. In 2017, GZA prepared a report summarizing the PMP analysis as well as a spillway capacity analysis. The report was submitted to the New Jersey Department of Environmental Protection (NJDEP) for review. NJDEP requested additional analyses to confirm the robustness of the PMP results. Ms. Suhonen completed the additional analyses, which

### Education

B.S., 2012, Environmental Engineering,  
Tufts University

### Licenses & Registrations

Professional Engineer – issued in 2017 in  
Massachusetts, #53434

### Affiliations

- American Society of Civil Engineers

### Areas of Specialization

- Computer Modeling
- Hydraulic Engineering
- Hydrologic Engineering
- Geographic Information Systems (GIS)
- Emergency Action Plans for Dam

### Areas of Specialization

- Wave Run-Up
- Scour Analysis
- Dam Inspections
- Dam Safety Training



## Belinda C. Lester, E.I.T.

Engineer I/Water Resources Engineer

included re-calibrating the HEC-HMS model with additional USGS and NJDEP gage data and re-evaluating the rating curve of a large reservoir in the upstream watershed.

**Pompton Lake Dam Incremental Damage Analysis, Pompton Lakes, NJ.** GZA was contracted by the North Jersey District Water Supply Commission (NJDWSC) to perform an Incremental Damage Analysis (IDA) to identify an appropriate Spillway Design Storm (SDS) for the dam. GZA used HEC-RAS and HEC-HMS models developed by another consultant to perform the analysis. GZA used the modeling results (depth and velocity) as well as aerial imagery to identify the effects of dam failure on the downstream area. Ms. Suhonen was the primary project engineer for the work.

**Emergency Action Plans and Two-Dimensional Dam Breach Modeling, Wallingford, CT.** GZA was contracted by the Town of Wallingford to develop Emergency Action Plans (EAPs) for three Hazard Class C dams. The scope of work included performing dam break analyses and inundation mapping for each dam. This work followed guidelines provided by the Connecticut DEEP Dam Safety Program. Ms. Suhonen was the technical lead for the project. She trained junior staff in developing a two-dimensional model to simulate the dam break for each dam. She trained staff in modifying the downstream terrain, modeling the dams, modeling the dam breaks, adding in lateral inflows, and calibrating the model. She assisted with developing the EAP, which follows a template provided by the DEEP.

**Emergency Action Plans and Dam Break Modeling for DCR's Significant Hazard Dams, MA.** GZA was contracted by Massachusetts Department of Conservation and Recreation (DCR) to develop Emergency Action Plans (EAPs) for 16 of their Significant Hazard Dams. Massachusetts Rules and Regulations were updated in 2017, and one change was Significant Hazard Dams are required to have an EAP. Before implementing the regulation with privately owned dams, DCR contracted 3 consultants to develop EAPs for DCR's Significant Hazard Dams. GZA prepared the EAPs following a template specified by the DCR. GZA used the software DSS-WISE Lite, developed by researchers at the University of Mississippi, to simulate a dam break at each dam. If the simulation showed significant downstream flood hazards, GZA prepared a detailed inundation map. If the simulation showed minimal impacts, GZA prepared a simplified map of the downstream area. Ms. Suhonen was the Project Manager for this project. She trained junior staff in using the DSS-WISE Lite software and in preparing Emergency Action Plans. She coordinated the development and review of each deliverable.

**Assessment of Hydropower Potential, MA.** GZA was contracted by the Massachusetts Department of Energy Resources (DOER) to conceptually quantify the hydropower potential if generation were restored at all MA dams that were historically used to generate hydropower. Ms. Suhonen used the Massachusetts Cultural Resource Information Center (MACRIS) to identify historic mills and link the mills with existing dams. Existing dam data was obtained through the Department of Conservation and Recreation. She used gage data from 142 USGS gages in the state to calculate the mean ratio of drainage area to 20% exceedance flow. With the ratio and using a StreamStats batch processing tool to calculate drainage area, she estimated the 20% exceedance flow at the historical mills. With the flow and dam height data, she calculated total power potential.

**Flood Hazard Reassessment, Indian Point and other Nuclear Sites.** GZA was contracted to perform external flood hazard reevaluations for multiple nuclear power plants in the United States. The external flood reevaluation was performed in response to NRC's 10 CFR part 50, Section 50.54 (f) request for information issued March 12, 2012, and included evaluation of evaluation of Probable Maximum Flood (PMF), Probable Maximum Precipitation (PMP), and Local Intense Precipitation (LIP). The flood reevaluation was performed in accordance with current regulatory guidelines including: NRC Standard Review Plan, NUREG-0800, revised March 2007; NRC Office of Standards Development, Regulatory Guides RG 1.102 – Flood Protection for Nuclear Power Plants, Revision 1, dated September 1976 and RG 1.59 – Design Basis Floods for Nuclear Power Plants, Revision 2, dated August 1977; NUREG/CR-7046 "Design-Basis Flood Estimation for Site Characterization at Nuclear Power Plants in the United States of America", publication date November 2011; and American National Standard for Determining Design Basis Flooding at Power Reactor Sites (ANSI/ANS 2.8-1992). Ms. Suhonen assisted in the analysis of three sites – one site along a major midwestern river, another site located in Louisiana, and a third site located in a delta region. In addition, she reviewed the reports of other sites as per an approved Appendix B Quality Assurance program.



## Samuel J. Bell, CFM

Senior Resiliency Planner/Disaster Recovery Manager

### Summary of Experience

Mr. Bell is a Senior Planner with GZA with 18 years of leadership and management experience covering natural hazard mitigation and resiliency planning, hazard mitigation assistance, environmental planning and permitting, community education and outreach, and disaster resiliency research. Sam is a member of the Natural Hazard Risk Management Senior Leadership Team assisting in the integration of these services across 30 GZA offices around the United States (U.S.) He has extensive experience providing technical assistance to Federal agencies, State agencies, U.S. Territories, Counties, and communities on disaster recovery and resiliency projects designed to protect critical facilities, public and private infrastructure, and residences.

From 2007 to 2011 Mr. Bell served as a Hazard Mitigation Grant and Planning Team Lead for the Federal Emergency Management Agency (FEMA) providing disaster recovery support to states throughout the Northeast in response to the adverse impacts caused by various types of natural disasters. Mr. Bell worked with multiple State Emergency Management Agencies and Departments of Environmental Protection to identify strategies and natural hazard mitigation solutions to protect residences and critical facilities from incurring damages from future natural hazards.

From 2011 to early 2014, Mr. Bell assisted FEMA with revising risk evaluation and program effectiveness tools that FEMA, States, local, tribal and US territories use to evaluate the effectiveness of all eligible flood mitigation projects including critical facilities and infrastructure. These tools included the FEMA Benefit-Cost Analysis (BCA) Tool Version 5.0 used to evaluate project cost-effectiveness, and a pioneering streamlined riverine flood loss avoidance study methodology used to evaluate the effectiveness of flood mitigation after completion. To assist stakeholders with using FEMA's BCA Tool, Mr. Bell provided trainings throughout the U.S.

### Relevant Project Experience

**Project Manager, Public Assistance COVID-19 Disaster Recovery, Providence, Rhode Island.** (2020) GZA is assisting the City of Providence with disaster recovery services resulting from the COVID-19 pandemic. Mr. Bell is one of the lead representatives authorized by Providence to act on the City's behalf with the Rhode Island Emergency Management Agency (RIEMA) and FEMA in matters related to post disaster recovery. The services include: 1) managing the City's FEMA Public Assistance Grants regarding COVID-19; 2) recovering emergency protection administrative costs to the greatest extent under Section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act; 3) coordinating with state and federal agencies on the City's behalf in support of overall disaster recovery efforts; and 4) evaluating additional potential grant opportunities outside of FEMA PA for the City.

**Project Manager, Disaster Recovery Administrative Services, Cranston, Rhode Island.** (2019-2020) GZA serves as the City of Cranston's disaster recovery consultant. Mr. Bell leads a team of disaster recovery experts to assist the City in managing state and federal disaster recovery grant management processes to ensure rapid recovery and to expedite post-disaster redevelopment for the City. The services include but are not limited to 1) technical assistance for the FEMA Public Assistance; 2) Inspection/Damage Assessments; 3) Financial management and Tracking; 4) FEMA 404 and 406 Hazard Mitigation Services;

### Education

B.S., Environmental Design, Urban and Regional Planning, University of Colorado- Boulder, 1998  
M.A., Urban and Environmental Policy and Planning, Tufts University, 2006

### Certifications & Specialized Training

Municipal Vulnerability Preparedness (MVP) Certified in Massachusetts  
Certified Floodplain Manager (CFM)

### Areas of Specialization

- FEMA and HUD Disaster Response and Recovery Programs
- FEMA, HUD, and NOAA Hazard Mitigation Programs
- Resiliency and Climate Adaptation
- Municipal Vulnerability Preparedness
- Natural Hazard Mitigation Planning
- Community Education and Outreach
- Cost-Benefit Analysis
- Environmental Permitting and Planning



## Samuel J. Bell, CFM

Senior Resiliency Planner/Disaster Recovery Manager

5) Grant Close-out and Audit; 6) HUD Community Development Block Grant Disaster Recovery (CDBG-DR) Support Services.

**Project Manager, Public Assistance COVID-19 Disaster Recovery, Cumberland, Rhode Island.** (2020) GZA is assisting the City of Cranston with disaster recovery services resulting from the COVID-19 pandemic. Mr. Bell is one of the lead representatives authorized by Cranston to act on the City's behalf with the RIEMA and FEMA in matters related to post disaster recovery. The services include: 1) managing the City's FEMA Public Assistance Grants regarding COVID-19; 2) recovering emergency protection administrative costs to the greatest extent under Section 324 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act; 3) coordinating with state and federal agencies on the City's behalf in support of overall disaster recovery efforts; and 4) evaluating additional potential grant opportunities outside of FEMA PA for the City.

**Project Manager, Western Gateway Climate Vulnerability Assessment and Adaptation Strategies, Glen Cove, New York.** (2019-2020) GZA is assisting the City of Glen in developing the Western Gateway Climate Vulnerability Assessment and Adaptation Strategies Plan. The Plan will include: 1) a vulnerability assessment to the project area to climate change hazards including flooding from sea-level-rise and increased precipitation intensity and higher average temperatures; 2) public outreach to solicit input from stakeholders, residents and concerned citizens during plan development; and 3) development of adaptation strategies and measures to address climate change hazards and to reduce greenhouse gas emissions.

**Project Manager, Flood Vulnerability Assessment and Flood Mitigation Recommendations, City of Boston (City Hall), Massachusetts.** (2018-2019) The City of Boston engaged GZA to work with the Facilities Department and property insurer to 1) conduct a flood vulnerability assessment; and 2) prepare flood mitigation recommendations for making City Hall more flood resilient. The purpose of the project is to reduce the risks that flooding at the site would result in property damage and/or business continuity loss. GZA assessed the facility, two below grade parking garages, and identified critical entry points which might be subject to flooding. GZA conducted a limited survey to verify elevations and compared them to flood elevations for the 1 percent and the 0.2 percent annual exceedance probability floods.

### Prior Experience

**Mitigation Section Chief, FEMA Disaster Recovery Support, Boston, Massachusetts.** (2008-2010) Mr. Bell led teams of hazard mitigation planners, grants managers and NFIP specialists at multiple Joint Field Offices (JFO). Mr. Bell led these teams in providing federal disaster recovery assistance to States throughout the Northeast. Mr. Bell assisted states and communities in developing mitigation strategies designed to reduce the impacts from future natural hazards that best meet the needs of each agency and community.

**Flood Mitigation and HMA Program Manager, FEMA Region 1 – Boston, Massachusetts.** (2007-2010) Mr. Bell provided technical assistance (TA) in New England and directly to MEMA and DCR for making communities more disaster resilient through HMA and NFIP programs. He conducted these efforts through community education and outreach and State risk reduction priorities in collaboration with local governments and regional planning commissions. This TA included guidance on meeting application requirements including BCA,

**Senior Instructor, FEMA Benefit Cost Analysis (BCA) and Unified Hazard Mitigation Assistance (HMA) Class Instruction.** (2011-2014) Under numerous Hazard Mitigation Technical Assistance Program (HMTAP) task orders, Mr. Bell delivered trainings to FEMA staff, State, tribal and local mitigation officials on best practices for developing and managing HMA mitigation planning and project grants.

**National Technical Review (NTR) Team Member, FEMA's Grants Implementation (GM) Branch – Washington, DC.** (2008, 2010-2011) Mr. Bell was a part of a panel of experts that analyzed over \$750 million in hazard mitigation grants. applications for cost-effectiveness and engineering feasibility. These reviews included the evaluation of complex flood reduction projects focused on protecting critical facilities in coastal and riverine areas throughout the country.

**Team Leader, FEMA Hazard Mitigation Assistance (HMA) Grant Programs Requirements Verification and Validation.** (2011-2012) Under a task order assignment with FEMA, Mr. Bell had direct oversight of the team that verified and validated all FEMA Hazard Mitigation Assistance (HMA) Grant Programs Compliance Requirements. Mr. Bell assisted FEMA HQ in the facilitation of workshops with 9 FEMA regional offices that elicited feedback from 50(+) FEMA staff from throughout the United States.



## Samuel J. Bell, CFM

Senior Resiliency Planner/Disaster Recovery Manager

### Publications and Presentations

- Bell, S.J. "Integrating Natural Hazard Risk Management into Site Selection, Due Diligence, Supply Chain Management and Existing Asset Management." Industrial Asset Management Council (IAMC) Fall Forum (2018)
- Bell, S.J., Winslow, D.M., and Hudock, M. "Reducing Risk Associated with Development of Distressed Waterfronts." Urban Land Institute (ULI) Northern New Jersey Suburban Marketplace (2016).
- Bell, S.J. and Boudreau, DJ. "Mapping the Vulnerability of Critical Infrastructure and Facilities." Proceedings of the ASCE COPRI National Conference, Boston (2015).





## Heidi Woelfel, P.G.

Project Manager

### Education

B.S., Geology and Geophysics, University of Wisconsin - Madison, 1997

### Registrations

Professional Geologist – Texas, #4650

### Areas of Specialization

- Site Investigation
- Due Diligence
- Environmental Compliance
- Groundwater Assessments
- Remedial Assessments
- Regulatory Communications
- Project Management

### Summary of Experience

Ms. Woelfel has extensive experience overseeing and conducting Phase I Environmental Site Assessments (ESAs), site investigations, vapor investigations, data reductions and statistical evaluations, remedial activities, sediment evaluations, and project management for various redevelopment and remedial projects for industrial, commercial, institutional, transportation, and private clients. She has provided geological review of subsurface investigations across the country utilizing various boring and drilling technologies. Ms. Woelfel is able to provide an in-depth review of vapor, soil, and groundwater data in support of regulatory reporting and communications. She also has project management experience and training to manage a variety of environmental and remedial projects from inception to completion. She has also provided support to litigation matters and risk transfer projects. She has provided input to regulatory agencies for ongoing projects and interacted and developed client relationships. Ms. Woelfel has conducted oversight of per- and polyfluoroalkyl substances (PFAS) sampling and evaluation for current and former industrial and commercial facilities. Ms. Woelfel has also worked in the southeastern United States providing environmental oversight to the chemical, oil, and gas industries.

### Relevant Project Experience

**Project Manager, PFAS Assessments, Various Sites.** Ms. Woelfel has worked with clients to meet regulatory requests for PFAS sampling based on site history and not regulator perceived activities. She was worked with developers and site owners to evaluate groundwater and soil conditions for various sites for PFAS; conducting the sampling to reduce any cross-contamination or false positives.

**Project Geologist, Phase I Assessments, Various Sites, Wisconsin.** Ms. Woelfel has conducted Phase I ESAs at industrial, commercial, and residential sites in Wisconsin in support of real estate transfers and refinancing. She has also conducted Phase I ESAs for numerous City of Milwaukee sites identified for redevelopment. The Sites assessed include chemical facilities, manufacturing facilities, historic and active dry cleaner facilities, multi-tenant residential buildings, and commercial buildings, as well as linear project area assessments. Ms. Woelfel also reviewed environmental compliance reports for a number of the sites to determine if environmental compliance reporting was required. Ms. Woelfel has also provided historical research for various Phase I ESAs, including reviewing Sanborn Maps, city directories, aerial photographs, and municipal building records.

**Project Manager/Geologist, Vapor Assessments, Various Sites, Wisconsin.** Ms. Woelfel has conducted various vapor assessments for a variety of project investigations for petroleum, chlorinated, methane, historic landfills, and coal tar facilities. The assessments include the investigation of soil gas, off-gassing from groundwater, sub-slab vapor sampling, and public sewer vapor assessments. Ms. Woelfel has reviewed the vapor data and has worked with GZA staff to identify source areas and appropriate remedial options to break the vapor migration pathway into overlying structures.



## Heidi Woelfel, P.G.

Project Manager

**Project Manager/Geologist, Chlorinated Solvent Site Assessment, Various Sites, Wisconsin.** Ms. Woelfel has managed site investigations, data reductions, vapor assessments, and statistical evaluations of sites impacted with chlorinated solvents for industrial, real estate, dry cleaners, and historical due diligence projects. Ms. Woelfel has also provided expertise on the remedial remedy approaches for each individual site, considering stakeholder concerns and site-specific conditions. She has also worked with the Wisconsin Department of Natural Resources (WDNR) on site-specific needs to ensure regulatory closure. Remedies have included reductive dechlorination, soil excavation, and in-situ chemical oxidation.

**Project Manager/Geologist, Petroleum Site Assessment, Various Sites, Wisconsin.** Ms. Woelfel has conducted geological oversight in the drilling and sampling activities at numerous sites around Milwaukee to assess historic uses and spills in support of redevelopment. Ms. Woelfel has conducted site investigation at 3500 West Burleigh Street in Milwaukee with drilling and groundwater studies and most recently with regulatory closure documentation. Ms. Woelfel has also conducted work at various City of Milwaukee sites located along Fond du Lac Avenue, which have included ground penetrating radar (GPR) to locate underground storage tanks (USTs).

**Project/Manager Geologist, Fill Material Assessment and Historic Landfill Evaluations, Various Sites, Wisconsin.** Ms. Woelfel has managed and provided oversight for numerous projects with historic fill material or unlicensed landfills throughout the City of Milwaukee and the State of Wisconsin. She has conducted drilling and soil sampling activities to determine the extent and degree of impaired fill material. Ms. Woelfel has also worked with the WDNR to obtain exemptions for building on historic fill and for low hazard waste exemptions. Ms. Woelfel has worked on City of Milwaukee historic fill material sites on South 6<sup>th</sup> Street, Fond du Lac Avenue, and North Avenue properties.

**Project Manager, Brownfield Redevelopment, Appleton, Wisconsin.** Ms. Woelfel has worked to assist a major Brownfield redevelopment of a former paper mill and drilling fluid additives facility in Appleton, Wisconsin. She has assisted the developer and stakeholder navigate WDNR's Voluntary Party Liability Exemption (VPLE) program in order to obtain a Certificate of Completion. Ms. Woelfel conducted data reviews of soil lithologies, groundwater conditions, and analytical reports to determine the degree and extent of contamination at the site to assist with how the final development could be used as part of the remediation and barrier. Ms. Woelfel has worked closely with the developer to assist in the financial lender requirements for each phase of the redevelopment.

### Experience Prior to GZA

**Phase I Assessor.** Ms. Woelfel has conducted Phase I ESAs, as well as desktop reviews of Phase Is for both individual sites and project portfolios. She has conducted historic research for the sites and has communicated with regulatory and municipal authorities in order to gather additional site data pertinent to the assessments. Her review of Phase I portfolios were utilized by clients in the real estate transactions for multi-state investments and divestitures.

**Project Manager, Petroleum Storage Facility Litigation, Green Bay, Wisconsin.** Ms. Woelfel provided oversight for site investigation of a petroleum litigation project for soil and groundwater delineation. Data was also collected on the location, thickness, and make-up of free phase petroleum. Ms. Woelfel worked with petroleum experts to determine the mobility and viscosity of the free phase with respect to on- and off-site migration. Ms. Woelfel also conducted vapor monitoring in support of the litigation, as well as provided expert witness deposition. Site delineation and vapor monitoring were used to provide evidence of on-site migration from a neighboring petroleum storage facility.

**Project Manager, Various Sites, Class I and Shortline Railroads, Wisconsin, Illinois, and Michigan.** Ms. Woelfel has worked with Class I and Shortline rail clients to assess environmental issues with former leased facilities and existing operational yards. Ms. Woelfel has also provided environmental assessment and management to rail equipment repair and maintenance yards. She has conducted drilling and sampling oversight in support of regulatory investigations and closure requests for sites impacted with various degrees of volatile organic compounds (VOCs), metals, and polycyclic aromatic hydrocarbons (PAHs) that have migrated off-site.



## Heidi Woelfel, P.G.

Project Manager

**Environmental Compliance, Kohl's Corporation, Various U.S. Locations.** Ms. Woelfel worked as an in-house consultant at Kohl's Corporation's (Kohl's) corporate office to provide waste management for its stores and distribution centers throughout the United States. She worked with responsible units and counties for the quarterly reporting of recycled wastes for the stores. She also provided Kohl's with recommendations of the reporting and permitting requirements for new and existing stores. Ms. Woelfel assisted in the preparation of informational posters presenting guidelines on the disposal of various universal, hazardous, and solid waste streams, which were sent to each facility.

**Project Manager, Koch Industries, Wisconsin, Kansas, and Illinois.** Ms. Woelfel provided project management and geological expertise for the divestiture of former Koch coal sites in the upper Midwest. Ms. Woelfel performed reviews of existing and potential environmental impacts, both on- and off-site, of the facilities and identified ongoing obligations and liabilities for the sites.

**Project Manager, Subsurface Investigations, Various Clients.** Ms. Woelfel has conducted soil, groundwater, and vapor investigations for rail clients, institutional clients, telecommunication clients, industrial client, oil and gas clients, and real estate clients. She has overseen and managed investigations of petroleum impacts, chlorinated solvent impacts, and metals, PAH, and semi-VOC (SVOC) impacts. Ms. Woelfel has worked with clients with portfolios of projects across the country and has worked with numerous regulators in support of site investigations and remediations.

**Project Manager, Brownfield Redevelopments, Wisconsin.** Ms. Woelfel has worked with developers on Brownfield sites to redevelop the sites for mixed-used end design. She has provided oversight for subsurface investigations for metals, petroleum, and PAH impacts under WDNR's VPLE program. Ms. Woelfel has also provided data reduction and reporting in support of a site-specific remedial plan and capping, which incorporated the final site use. Following the VPLE closure, Ms. Woelfel worked with the developer and construction crews to ensure the soil management for each phase of the development was followed, as well as providing construction documentation. Ms. Woelfel has also provided geological and hydrogeological support for the closure and redevelopment of a former coal barge offloading facility in Chicago.

**Project Manager, Creosote Facility, Texas.** Ms. Woelfel provided geological review of site data, including fault lines traversing the project facility for support of site investigation and remedial objectives. The facility was heavily impacted with creosote in soil and groundwater with dissolved plume migrating off-site into a residential area. Ms. Woelfel worked with stakeholders on the site issues and concerns, as well as the requirements and budgets for achieving site regulatory closure.

### Presentations

Woelfel, Heidi and James Drought (April 2011). *RiverHeath Brownfield Redevelopment*. Wisconsin Ground Water Association (WGWA) Annual Seminar. Brookfield, Wisconsin.

### Additional Training

- 40-Hour OSHA Health and Safety Training
- 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) Certification
- 8-Hour OSHA Hazwoper Supervisor Training
- 8-Hour OSHA Refresher

### Affiliations

- Wisconsin Council on Recycling, Secretary
- Parks Commission Member, Richfield, Wisconsin



## Daniel J. Boudreau, Jr., GISP

Geospatial Systems Lead and Manager

### Summary of Experience

Mr. Boudreau has extensive experience in all aspects of geospatial technology. As a certified GIS Professional, he brings over thirty years of combined CAD and GIS experience in data management, data development/conversion, spatial analysis, cartographic design and production as well as field data collection for asset management, water resources and environmental assessment. As a member GZA’s Enterprise IT Group Mr. Boudreau serves as the Geospatial Systems Lead and heads the Geospatial Solutions Practice. He also is the administrator of GZA’s ArcGIS Enterprise deployment and oversees the management of the central data repository, as well as the deployment of GIS web applications developed with Esri’s Story Map and Web AppBuilder for ArcGIS. He co-developed the GZA GeoTool web mapping platform, which is central to several of GZA’s Technical Practices such as Natural Resources, Water Resources, Stormwater Management, Asset Management and Natural Hazards Mitigation and Resilience practices. He also manages GZA’s Esri Partner Program relationship.

In 2016, Dan provided advisory services to the Geographic Information Certification Institute Advisory Panel for the development of the GISCI GISP testing requirements. Dan is currently the Chairperson for the GIS Certification Institute’s Outreach Committee and a member of the professions’ Exam Development Group. Established in 2004, the GIS Certification Institute (GISCI) is a tax-exempt, not-for-profit organization created to manage and operate the premier professional certification program for the GIS Profession and to promote ethical conduct among GISPs.

### Relevant Project Experience

**GIS Lead and Database Developer, Alcoa Real Estate GIS.** GZA was retained by Alcoa Corporation to develop a secure enterprise-wide Web GIS Application and database for housing all key geographical information about Alcoa properties nationwide and globally.

The “Alcoa Properties Viewer” documents, through a map-centric dashboard, all levels of facility geography and key real estate information associated with Alcoa’s facilities including Plant Facility Limits, Assessors Parcels, Rights-of-way, Easements and Areas associated with consent orders.

The database also houses documents about property titles, leases, mineral rights, and other regulatory and legal information. Live data feeds from authoritative sources such as county tax assessors, state environmental regulatory agencies and federal databases like the U.S. Environmental Protection Agency, are linked to geographic features in the database and accessible directly through the platform.

The Alcoa Properties Viewer platform also includes a custom Web GIS Application powered by Esri’s Web AppBuilder API on GZA’s ArcGIS Enterprise Platform for Alcoa’s real estate team and other stakeholders to manage and access facility information from both desktop and mobile devices and provides custom user-defined high-resolution print services in multiple ANSI size standards to provide on-demand custom PDF output.

### Education

B.S., Geographic Information Systems and Cartography, Salem State University, 2000

*Summa cum Laude*

A.S., Electromechanical Drafting Middlesex Community, 1987

### Certifications & Specialized Training

GISCI Certified Geographic Information Systems Professional (GISP)

### Areas of Specialization

- Geographic Information Systems (GIS)
- Esri’s ArcGIS Enterprise Stack
- Database Development
- Web and Mobile Applications
- ArcGIS Online Deployments
- Spatial Analysis
- CAD/GIS Integration
- Cartographic Design and Production
- 3D modeling and Data Visualization

### Professional Affiliations

- GISCI, Chairperson, Outreach Committee, Exam Dev. Group
- GISCI, Outreach Committee Chairperson
- Gamma Theta Upsilon (International Geographical Honor Society)
- Urban & Regional information Systems Association (URISA)
- Geospatial Information & Technology Association (GITA)
- American Society for Photogrammetry & Remote Sensing (ASPRS)
- ASCE Coasts, Oceans, Ports, and Rivers Institute (COPRI)



## Daniel J. Boudreau, Jr., GISP

Geospatial Systems Lead and Manager

**GIS Lead, Emergency Action Plan Updates and Dam Break Modeling for Great River Hydropower Dams in Vermont, New Hampshire, and Massachusetts.** Great River Hydro LLC, owner and operator of 16 hydropower dams in New England, engaged GZA to perform Emergency Action Plan (EAP) updates for their dams in three New England states. Dan provided overall geospatial support for information management, modeling, mapping and developed a web GIS application that presents the inundation maps and data for Great River's High Hazard dams. The application integrates this content with other publicly available data and is employed by dozens of stakeholders in three New England states for analysis, emergency response planning, desktop exercises and analysis.

**GIS Lead, GZA Natural Hazard Mitigation and Resiliency, Town-wide Drainage Evaluation, Comprehensive Stream Improvement Plan, and Downtown Resiliency and Recovery Plan, Town of Westport, Connecticut.** Mr. Boudreau provided geospatial data management support and GeoTool web GIS application to support a Riverine Hydrology and Hydraulics and Saugatuck River Flood Evaluation. The overall study aims to study flood conditions on tidally influenced Saugatuck River and 8 of its tributaries. Mr. Boudreau's Geospatial Solutions team provided field data collection support with Collector for ArcGIS used by field staff.

**GIS Lead and Database Developer, Alcoa Real Estate GIS.** GZA was retained by Alcoa Corporation to develop a secure enterprise-wide Web GIS Application and database for housing all key geographical information about Alcoa properties nationwide and globally. The "Alcoa Properties Viewer" documents, through a map-centric dashboard, all levels of facility geography and key real estate information associated with Alcoa's facilities including Plant Facility Limits, Assessors Parcels, Rights-of-way, Easements and, Areas associated with consent orders. The database also houses documents about property titles, leases, mineral rights, and other regulatory and legal information. Live data feeds from authoritative sources such as county tax assessors, state environmental regulatory agencies and federal databases like the U.S. Environmental Protection Agency, are linked to geographic features in the database and accessible directly through the platform. The Alcoa Properties Viewer platform also includes a custom Web GIS Application powered by Esri's Web AppBuilder API on GZA's ArcGIS Enterprise Platform for Alcoa's real estate team and other stakeholders to manage and access facility information from both desktop and mobile devices and provides custom user-defined high-resolution print services in multiple ANSI size standards to provide on-demand custom PDF output.

**GIS Lead, Natural Hazard Mitigation and Resiliency, Osprey Beach Stormwater Outfall Littoral Drift/Sediment Transport Analysis, New London, Connecticut.** GZA conducted shoreline change analysis for evaluating the effects of the proposed outfall construction of Osprey Beach to the transport of non-cohesive sediments along the foreshore and shore face due to the action of breaking waves and the longshore and cross shore currents. Mr. Boudreau's team provided geospatial data management, modeling, and web GIS visualization support.

**GIS Lead, Development of a Community Resiliency Plan, Stratford, Connecticut.** Mr. Boudreau provided geospatial data management and web GIS for a Community Coastal Resilience Plan in order to assist the Town in evaluating the social, economic, and ecological resilience of its critical assets and vulnerabilities in relation to future sea level rise impacts along with anticipated increases in the frequency and severity of storm surge, coastal flooding, and erosion. Additionally all geospatial data developed for this project along with relevant data from FEMA, NOAA, USGS and others is accessible via GZA's Coastal Engineering GeoTool Web GIS Application and mobile GIS for analysis and identifying potential mitigation project opportunities from the office and in the field.

**GIS Lead, Natural Hazard Mitigation Plan Update, Somerset, Massachusetts.** Geospatial data management for Somerset in order to assist the Town in evaluating the social, economic, and ecological resilience of its critical assets and vulnerabilities in relation to future sea level rise impacts along with anticipated increases in the frequency and severity of storm surge, coastal flooding, and erosion. Provided GIS and HAZUS support.

**GIS Lead, Natural Hazard Mitigation Plan Update, Westport, Connecticut.** Geospatial data management for Westport in order to assist the Town in evaluating the social, economic, and ecological resilience of its critical assets and vulnerabilities in relation to future sea level rise impacts along with anticipated increases in the frequency and severity of storm surge, coastal flooding, and erosion. Provided GIS and HAZUS support.





## Daniel J. Boudreau, Jr., GISP

Geospatial Systems Lead and Manager

**GIS Lead, Long Wharf Coastal Resilience Study and Living Shoreline Project, New Haven, Connecticut.** Geospatial data management and GeoTool support of coastal resilience and evaluation of opportunities for living shoreline solutions.

**GIS Lead, Old Saybrook, CT Long Coastal Adaptation Study and Infrastructure Evaluation, Old Saybrook, Connecticut.** Geospatial data management and GeoTool support to examine coastal adaptation strategies and evaluation of critical infrastructure as risk.



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## APPENDIX 2 | VENDOR VERIFICATION FORM



## Vendor Verification Form

The Huron-Clinton Metroparks Board of Commissioners has adopted the following updates to our Purchasing Policy.

Vendors that meet the criteria listed below have the option to complete this form and provide information to qualify for additional bid comparison discounts. This information is not required for bid/quote submission, but we do ask you sign and acknowledge the form at the bottom if you choose not to provide this information.

Local Preference	Living Wage	Diversity, Equity & Inclusion
<ul style="list-style-type: none"> <li>❖ HCMA has a local vendor preference for vendors that qualify as a “Metroparks-based business”.</li> <li>❖ Vendors seeking to qualify as a Metroparks-based business must meet the following criteria:               <ol style="list-style-type: none"> <li>1. Operates from a building or office with a permanent street address located within the Metroparks service region encompassing Livingston, Macomb, Oakland, Washtenaw and Wayne counties, on an ongoing basis for at least one year prior to responding to the solicitation; and</li> <li>2. Has been providing goods and/or services specified in the solicitation within the service region on an ongoing basis for at least one year prior to responding to the solicitation.</li> <li>3. A Metroparks-based business also must agree not to sublet 50% or more of the dollar value of the contract to subcontractors who do not meet the definition of a Metroparks-based business.</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>❖ Vendors seeking to qualify for a 2% bid comparison discount via demonstration of their commitment to paying their labor force a living wage of no less than \$15.00 per hour must return this Verification Form.</li> <li>❖ HCMA may make any reasonable investigation deemed necessary and proper to determine the validity of the evidence provided.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Vendors seeking to qualify for a 2% bid comparison discount via demonstration of their commitment to employ and sustain a diverse workforce must return this Verification Form.</li> <li>❖ A copy of your DEI Plan must also be attached to this Form.</li> </ul>

I \_\_\_\_\_ a legally authorized agent of the business known as \_\_\_\_\_ hereby certify and affirm the information below.

**LOCAL PREFERENCE POLICY**

- ❖ The business has been in existence and either physically headquartered or located at: \_\_\_\_\_, Michigan  

*Street Address*
*City*
- In the County of \_\_\_\_\_ for not less than one (1) year immediately prior to the date of this Verification.
- ❖ The business has been in existence and provided or produced the following goods and/or services for not less than one (1) year immediately prior to the date of this Verification: \_\_\_\_\_
- ❖ I confirm that the business agrees not to sublet 50% or more of the dollar value of the contract to subcontractors who do not meet the definition of a Metroparks-based business.

**LIVING WAGE POLICY**

- ❖ The business has adopted a Living Wage Payment Plan where no employee is paid less than \$15.00 per hour.
- ❖ HCMA reserves the right to inspect the Vendor’s records to verify that the Vendor pays all its employees a minimum living wage. HCMA and HCMA’s auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Vendor’s records and accounts which are directly pertinent to verifying the wages paid to all the Vendor’s employees.

**DIVERSITY, EQUITY & INCLUSION**

- ❖ The business has adopted a DEI Plan six (6) months or more prior to the date of this Verification.
- ❖ A copy of our DEI Plan is attached.

I further acknowledge my understanding that any person, firm, corporation or entity intentionally submitting false information to Huron-Clinton Metropolitan Authority (HCMA) in an attempt to qualify for any of the Comparison Discounts may be barred from bidding on Metroparks contracts for a period of not less than three (3) years.

SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PRINTED NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_  
 EMAIL ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

- Vendors must acknowledge that they have received and read this Form** even if they choose not to complete the section above. Vendors who compete the section above do not need to complete the acknowledgement section below.

BUSINESS NAME: \_\_\_\_\_  
 SIGNED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PRINTED NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_  
 EMAIL ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

**HCMA Staff: Send the completed form and evidence to [BIDS@METROPARKS.COM](mailto:BIDS@METROPARKS.COM)**

# D

## The Commonwealth of Massachusetts

William Francis Galvin

Secretary of the Commonwealth

One Ashburton Place, Boston, Massachusetts 02108-1512

FORM MUST BE TYPED

### Articles of Organization

FORM MUST BE TYPED

(General Laws Chapter 156D, Section 2.02; 950 CMR 113.16)

#### ARTICLE I

The exact name of the corporation is:

GZA Michigan, Inc.

#### ARTICLE II

Unless the articles of organization otherwise provide, all corporations formed pursuant to G.L. Chapter 156D have the purpose of engaging in any lawful business. Please specify if you want a more limited purpose:

#### ARTICLE III

State the total number of shares and par value, \* if any, of each class of stock that the corporation is authorized to issue. All corporations must authorize stock. If only one class or series is authorized, it is not necessary to specify any particular designation.

WITHOUT PAR VALUE		WITH PAR VALUE		
TYPE	NUMBER OF SHARES	TYPE	NUMBER OF SHARES	PAR VALUE
Common	100			

*\*G.L. Chapter 156D eliminates the concept of par value, however a corporation may specify par value in Article III. See G.L. Chapter 156D, Section 6.21, and the comments relative thereto.*

#### **ARTICLE IV**

Prior to the issuance of shares of any class or series, the articles of organization must set forth the preferences, limitations and relative rights of that class or series. The articles may also limit the type or specify the minimum amount of consideration for which shares of any class or series may be issued. Please set forth the preferences, limitations and relative rights of each class or series and, if desired, the required type and minimum amount of consideration to be received.

**Only one class of shares**

#### **ARTICLE V**

The restrictions, if any, imposed by the articles of organization upon the transfer of shares of any class or series of stock are:

**No Restrictions**

#### **ARTICLE VI**

Other lawful provisions, and if there are no such provisions, this article may be left blank.

**See Attached**

*Note: The preceding six (6) articles are considered to be permanent and may be changed only by filing appropriate articles of amendment.*



**ARTICLE VII**

The effective date of organization of the corporation is the date and time the articles were received for filing if the articles are not rejected within the time prescribed by law. If a later effective date is desired, specify such date, which may not be later than the 90th day after the articles are received for filing;

**ARTICLE VIII**

The information contained in this article is not a permanent part of the articles of organization,

- a. The street address of the initial registered office of the corporation in the commonwealth:  
**249 Vanderbilt Avenue, Norwood, MA 02062**
- b. The name of its initial registered agent at its registered office:  
**Laurie B. Mahoney**
- c. The names and street addresses of the individuals who will serve as the initial directors, president, treasurer and secretary of the corporation (an address need not be specified if the business address of the officer or director is the same as the principal office location):

President: **Walter Kosinski, 31554 Hees Avenue, Livonia, Michigan 48150**

Treasurer: **Walter Kosinski, 31554 Hees Avenue, Livonia, Michigan 48150**

Secretary: **John Schneider, 33437 Heritage Hills Drive, Farmington Hills, Michigan 48331**

Director(s): **Walter Kosinski, 31554 Hees Avenue, Livonia, Michigan 48150**  
**John Schneider, 33437 Heritage Hills Drive, Farmington Hills, Michigan 48331**

- d. The fiscal year end of the corporation:  
**February 28**
- e. A brief description of the type of business in which the corporation intends to engage:  
**Engineering Services**
- f. The street address of the principal office of the corporation:  
**249 Vanderbilt Avenue, Norwood, MA 02062**
- g. The street address where the records of the corporation required to be kept in the commonwealth are located is:

**249 Vanderbilt Avenue, Norwood, MA 02062** \_\_\_\_\_, which is  
*(number, street, city or town, state, zip code)*

- its principal office;
- an office of its transfer agent;
- an office of its secretary/assistant secretary;
- its registered office.

Signed this 5<sup>th</sup> day of August, 2013 by the incorporator(s):

Signature: 

Name: Laurie B. Mahoney

Address: 249 Vanderbilt Avenue, Norwood, MA 02062

**COMMONWEALTH OF MASSACHUSETTS**

**William Francis Galvin**  
Secretary of the Commonwealth  
One Ashburton Place, Boston, Massachusetts 02108-1512

**Articles of Organization**  
**(General Laws Chapter 156D, Section 2.02; 950 CMR 113.16)**

I hereby certify that upon examination of these articles of organization, duly submitted to me, it appears that the provisions of the General Laws relative to the organization of corporations have been complied with, and I hereby approve said articles; and the filing fee in the amount of \$ \_\_\_\_\_ having been paid, said articles are deemed to have been filed with me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_, at \_\_\_\_\_ a.m./p.m.  
*time*

Effective date: \_\_\_\_\_  
*(must be within 90 days of date submitted)*

**WILLIAM FRANCIS GALVIN**  
*Secretary of the Commonwealth*

\_\_\_\_\_  
Examiner

Filing fee: \$275 for up to 275,000 shares plus \$100 for each additional 100,000 shares or any fraction thereof.

\_\_\_\_\_  
Name approval

**TO BE FILLED IN BY CORPORATION**  
Contact Information:

\_\_\_\_\_  
C

**Jane V. Hawkes c/o Bowditch & Dewey, LLP**

\_\_\_\_\_  
M

**One International Place, 44th Floor**

**Boston, MA 02110**

Telephone: **617-757-6510**

Email: **jhawkes@bowditch.com**

Upon filing, a copy of this filing will be available at [www.sec.state.ma.us/cor](http://www.sec.state.ma.us/cor).  
If the document is rejected, a copy of the rejection sheet and rejected document will be available in the rejected queue.



William Francis Galvin  
Secretary of the  
Commonwealth

*The Commonwealth of Massachusetts*  
*Secretary of the Commonwealth*  
*State House, Boston, Massachusetts 02133*

August 8, 2013

TO WHOM IT MAY CONCERN:

I hereby certify that according to the records of this office,

**GZA MICHIGAN, INC.**

is a domestic corporation organized on **August 8, 2013**, under the General Laws of the Commonwealth of Massachusetts.

I further certify that there are no proceedings presently pending under the Massachusetts General Laws Chapter 156D section 14.21 for said corporation's dissolution; that articles of dissolution have not been filed by said corporation; that, said corporation has filed all annual reports, and paid all fees with respect to such reports, and so far as appears of record said corporation has legal existence and is in good standing with this office.



In testimony of which,  
I have hereunto affixed the  
Great Seal of the Commonwealth  
on the date first above written.

*William Francis Galvin*

Secretary of the Commonwealth

Processed By: PM



**Department of Licensing and Regulatory Affairs**

**Lansing, Michigan**

*This is to Certify That*

**GZA MICHIGAN, INC.**

*a corporation existing under the laws of the State of MASSACHUSETTS was validly authorized to transact business in Michigan on the 15th day of August, 2013, in conformity with 1972 PA 284, as amended.*

*Said corporation is authorized to transact in this state any business of the character set forth in its application which a domestic corporation formed under this act may lawfully conduct. The authority shall continue as long as said corporation retains its authority to transact such business in the jurisdiction of its incorporation and its authority to transact business in this state has not been surrendered, suspended or revoked.*

*This certificate is in due form, made by me as the proper officer, and is entitled to have full faith and credit given it in every court and office within the United States.*



*In testimony whereof, I have hereunto set my hand, in the City of Lansing, this 15th day of August, 2013.*

*Alan J. Schefke, Director  
Corporations, Securities & Commercial Licensing Bureau*

**GOLD SEAL APPEARS ONLY ON ORIGINAL**

## DIVERSITY AND INCLUSION STATEMENT

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GZA is committed to providing a diverse and inclusive work environment.

As part of these efforts, GZA's Board of Directors established a standing Board Committee, the Diversity, Inclusion and Equity (DEI) Committee. This was done in recognition of the importance of this issue to the Board, and the Board's strong desire to strengthen the organization for future success and make sure all employees (and potential employees) feel welcomed, valued and respected.

The Vision Statement for the D&I states GZA's goal is:

***To be recognized as an employer of choice by all, with a diverse and compassionate workforce that embraces our differences and seeks excellence through the exchange of creative ideas and teamwork, and where everyone feels valued and respected.***

To give our employees a strong voice and direct involvement in this process, there are four DEI Advisory Groups, focusing on the following areas:

- ❖ Training;
- ❖ Culture;
- ❖ Recruitment; and
- ❖ Outreach.

All GZA employees are welcome to join one or more of the Advisory Groups.

The purpose of the D&I Committee is to:

- ❖ Provide guidance, support, and other assistance as the D&I Committee deems necessary and appropriate to Management, particularly on issues related to diversity and inclusion in recruitment, onboarding, retention, training and benefits; and
- ❖ Provide general guidance to the Company on the development and implementation of policies, procedures and goals affecting diversity and inclusion at GZA.

As a company, we strive to create an inclusive environment where everyone feels valued and respected and is supported to seek excellence in their personal and professional lives. To help accomplish this, the Committee works closely with our Human Resources department with respect to recruiting efforts and training programs for our employees.





## PART II | COST PROPOSAL



Known for excellence. Built on trust.

# COST PROPOSAL | DAM INUNDATION STUDY, P-900-21-1150

## INTRODUCTION AND STATEMENT REGARDING PROPOSED BUDGET

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GZA has provided our proposed budget estimate on the form provided by the Authority based upon our current knowledge of site conditions at the four dams including: Kent Lake Dam at Kensington Metropark in Livingston County; Flat Rock Dam at Oakwood Metropark in Wayne County; and the Upper and Lower Stony Creek Dams at the Stony Creek Metropark in Macomb County.

You will note that GZA did not provide estimated costs specifically related to Category 1 for: development of drawings and specifications for contractor work for implementing a detailed inspection project; permit submission; inspection services and oversight for developed project(s); development of drawings and specifications for work to address any findings from the historical data review and site / dam inspections; and, engineering oversight for work to address report findings, since these specific tasks would need to be carefully planned on behalf of the Authority based on the results of our historical data review and site / dam inspections. The estimated costs included in Category 1 are for the historical data review, dam inspection, report preparation and meeting with the Authority to define the potential tasks that may need to be performed for each dam.

Category 2 estimated costs are generalized based on our experience with inundation mapping and assumes a reasonable number of scenarios will be selected between the Authority and GZA. Subsequent revisions and/or modification to the estimated costs will be based on time and materials estimates utilizing the attached schedule of fees.

## SERVICE AGREEMENT

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GZA has reviewed the example Services Agreement prepared by the Huron-Clinton Metropolitan Authority (HCMA or “Authority”) and believes we can reach a mutually satisfactory agreement. GZA will propose several specific modifications with respect to the indemnification and limit of liability clauses contained in Section 6, and elsewhere throughout the Services Agreement. These items will be discussed with the Authority following your review of GZA’s qualifications and cost estimate for the services proposed for Category 1 and 2 tasks.





**HURON CLINTON METROPOLITAN AUTHORITY  
 REQUEST FOR PROPOSAL STANDARD COST FORM**

(TO BE SUBMITTED WITH PROPOSAL PART II)

PROJECT TITLE: Dam Study

PARK NAME: Stony Creek, Oakwood, Kensington Metroparks

RFP No.: P-900-21-1150

DUE DATE: July 1, 2021

	ESTIMATED HOURS	ESTIMATED COST
<b>Category 1 (See RFP)</b>		
Review of Historical Information <b>(estimated 16 hrs each dam)</b>	64	\$8,000
Development of drawings and specifications for contractor work for implementing a detailed inspection project	TBD	TBD
Permit submission	TBD	TBD
Inspection Services and oversight for developed project <b>(inspection at 4 dams; estimated 24 hrs each dam)</b>	96	\$12,000
Written summary of findings dam inspection report <b>(estimated 16 hrs each dam)</b>	64	\$8,000
Development of drawings and specifications for work to address any findings	TBD	TBD
Engineering oversight for work to address report findings	TBD	TBD
Meetings with Metroparks staff <b>(estimated hours; 4 hrs each dam)</b>	16	\$2,000
Other Items? List below		
<b>Subtotal Category 1 (60 hrs each dam for 4 dams = \$7,500 each dam)</b>	240	\$30,000
<b>Category 2 (See RFP)</b>		
Review possible failure modes and results <b>(estimated 60 hours each dam)</b>	240	\$21,600
Develop inundation maps for response planning <b>(estimated 160 hours each dam)</b>	640	\$57,600
Provide cost estimates to implement response actions, equipment, and implementation components <b>(estimated 60 hours each dam)</b>	240	\$21,600
Provide updated Emergency Action Plans <b>(estimated 40 hours each dam)</b>	160	\$14,400
Meetings Metroparks staff <b>(estimated 40 hours each dam)</b>	160	\$20,000
Other Items? List Below	TBD	TBD
<b>Subtotal Category 2 (360 hrs each dam for 4 dams = \$33,800 each dam)</b>	1440	\$135,200

Include estimated hours for all work performed except provided by subconsultant as lump sum.

Proposal Cost (Not to Exceed)
<b>\$165,200</b>



**HURON CLINTON METROPOLITAN AUTHORITY  
REQUEST FOR PROPOSAL STANDARD COST FORM  
(SUBCONSULTANT INFORMATION)**

Subconsultant: <b>TBD; potential surveyor</b>
Discipline: <b>Surveying</b>
Contact Information:
Subconsultant:
Discipline:
Contact Information:
Subconsultant:
Discipline:
Contact Information:
Subconsultant:
Discipline:
Contact Information:

**GZA GEOENVIRONMENTAL, INC.  
GREAT LAKES REGION - MICHIGAN  
SCHEDULE OF FEES**

FOR PROPOSAL FOR SERVICES DATED: **July 1, 2021**  
FILE NO. **07.P000073.22**

<u>LABOR</u>	<u>Per Hour**</u>
Principal / Associate Principal.....	\$185.00
Senior Consultant / Project Reviewer.....	\$160.00
Senior Project Manager / Senior Technical Specialist.....	\$145.00
Project Manager / Technical Specialist.....	\$128.00
Assistant Project Manager.....	\$110.00
Engineer / Geologist / Environmental Specialist I *.....	\$ 90.00
Engineer / Geologist / Environmental Specialist II *.....	\$ 80.00
Sr. CAD / Technical Designer.....	\$ 110.00
CAD / Technical Designer *.....	\$ 90.00
Administrative Assistant *.....	\$ 60.00
Outside Services and Subcontractors.....	Cost plus 10%
Expenses.....	Cost plus 10%

- \* For these personnel, overtime work will be charged at a rate equal to 1.5 times the Standard Rate.
- \*\* A fifty percent (50%) premium will be added to the above rates for expert witness and other special services.

The above rates for technical and support personnel will be charged for actual time worked on the project, including time required for travel from company office to job or meeting site and return. For work requiring out-of-town overnight stay, the minimum charge for work on the project will be eight (8) hours per day.

The above-listed rates are valid for the calendar year in which this proposal is accepted by Client. GZA reserves the right to modify this rate schedule on an annual basis to reflect changes in employee compensation and Client acknowledges labor rates may change during the execution of this project.

**EXPENSES**

- ▶ Laboratory service, rental of specialized field or monitoring equipment and vehicle charges based on GZA standard unit prices.
- ▶ Transportation, lodging and subsistence for out-of-town travel.
- ▶ Printing, reproduction, plotting, photographs, wide-format scanning and material purchases.
- ▶ Express mail and shipping charges.
- ▶ Personal vehicle travel for projects at IRS rates.
- ▶ Project-specific computer hardware and software.
- ▶ Long distance, local and cellular telephone, facsimile and postage (via U.S. Postal Service) are included in a flat rate Communication Fee of 3 percent per invoice on labor only.

**INVOICES**

GZA will submit invoices periodically and payment will be due within 30 days from invoice date. Overdue payments will bear interest at 1½ percent per month or, if lower, the maximum lawful rate. GZA may terminate its services upon 10 days' written notice any time your payment is overdue on this or any other project, and you will pay for all services through termination, plus termination costs unless alternate payment terms have been mutually agreed upon by both parties. You will reimburse GZA's costs for collecting overdue invoices, including reasonable attorneys' fees.

**BUDGETS**

The Budget contained within GZA's Proposal represents our estimate of the work involved. Actual charges can vary either upward or downward depending upon many factors.

**RETAINER**

Any retainer specified in GZA's Proposal shall be due prior to the start of services and will be applied to the final invoice for services.

**FUNDS PAYABLE IN UNITED STATES CURRENCY**





To: Board of Commissioners  
From: Mike Henkel Chief of Engineering Services  
Project No: 712-21-135  
Project Title: Wave Pool Marcite Repairs  
Project Type: Major Maintenance  
Location: Lake Erie Metropark  
Date: August 6, 2021

Bids Opened: Tuesday August 3, 2021 at 2:00 p.m.

**Action Requested: Motion to Approve**

That the Board of Commissioners (1) award Contract No. 712-21-135 to the low responsive, responsible bidder, Advanced Pool Services in the amount of \$379,864; and (2) approve the transfer of \$191,864 from the Kensington Unallocated account to cover the remaining cost of the project as recommended by Chief of Engineering Services Mike Henkel and staff.

**Fiscal Impact:** The project was budgeted at \$188,000 is over budget in the amount of \$191,864. The additional funding needed for this project is available from the Kensington Trail Improvement – Martindale north to Shore Fishing, which has \$377,000 available. This work will require a more extensive design effort and can be completed next year.

**Scope of Work:** The work includes approximately 11,000 square feet of pool surfacing along the walls and shallow section for removal and replacement, hand chipping selected areas, limited concrete repairs and caulking.

**Background:** The existing pool finish is delaminated from the underlying pool substrate. The delamination occurs due to the age, moisture migration, freeze thaw seasonal cycles and drying of the finish surface. At the end of last year, the pool bottom was sounded to map and find any hollow delaminated areas. Additional areas have developed. However, once repair work begins more delamination may become evident as the work progresses. During the start up of the pool this year a section of surfacing broke loose and was not able to be repaired by park forces.

<u>Contractor</u>	<u>City</u>	<u>Amount</u>
1. Advanced Pool Services*	Highland	\$379,864.00
<i>*only one bid was received</i>		
Budget for Contract Services		
- Wave Pool Marcite Repairs		\$188,000.00
- Kensington Trail Improvements Martindale to Shore Fishing		<u>\$191,864.00</u>
o Total		\$379,864.00
Work Order Amount		
- Contract Amount		
- Advanced Pool Services		\$ 379,864.00
- Contract Administration		<u>\$ 15,000.00</u>
o Total Proposed Work Order Amount (Rounded)		\$ 394,864.00

*The following reviewed plans but did not submit a bid: Miracle Midwest, Holly; Total Control LLC, Livonia; Aquatic Source, Brighton; Pullman SST, Inc., Trenton; B & B Pools and Spas, Livonia.*

*This project was reported and publicly advertised in the following construction reporting outlets: Michigan Inter-governmental trade network, MITN; Construction Association of Michigan, Construction Connect, Washtenaw Contractors Association, Builders Exchange of Lansing and Central Michigan.*



To: Board of Commissioners  
From: Amy McMillan, Director  
Subject: Approval – Chief Financial Officer  
Date: August 6, 2021

**Action Requested: Motion to Approve**

That the Board of Commissioners approve the employment of Shedreka Miller as the Chief Financial Officer for the Huron-Clinton Metropolitan Authority with an annual salary of \$120,115 as recommended by Director McMillan and staff.

**Background:** Due to the retirement of current Chief Financial Officer, Rebecca Franchock, the Board approved hiring Kapstone Employment Services at the Jan. 14, 2021 meeting. Kapstone then conducted a nationwide search, screened applicants and presented candidates meeting the position requirements to administration. Candidates were then interviewed by a committee consisting staff leadership.

After careful consideration, staff recommends that the Board of Commissioners approve the confirmation of Shedreka Miller as the chief financial officer.

HURON-CLINTON METROPARKS MONTHLY STATISTICS

July, 2021

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	77,408	84,084	74,662	4%	\$ 327,498	\$ 379,439	\$ 330,435	-1%
Wolcott Mill	4,435	3,230	3,609	23%	\$ 4,720	\$ 3,178	\$ 4,780	-1%
Stony Creek	99,847	118,964	100,655	-1%	\$ 380,296	\$ 451,249	\$ 415,817	-9%
Indian Springs	12,425	14,695	13,875	-10%	\$ 42,467	\$ 47,874	\$ 43,443	-2%
Kensington	120,335	132,787	114,279	5%	\$ 453,463	\$ 523,272	\$ 455,823	-1%
Huron Meadows	13,189	14,557	12,202	8%	\$ 1,219	\$ 1,110	\$ 2,053	-41%
Hudson Mills	33,438	38,952	30,452	10%	\$ 91,777	\$ 100,792	\$ 82,032	12%
Lower Huron/Willow/Oakwoods	69,301	62,321	69,394	0%	\$ 185,859	\$ 110,284	\$ 199,720	-7%
Lake Erie	30,368	28,969	30,282	0%	\$ 69,070	\$ 61,629	\$ 91,472	-24%
<b>Monthly TOTALS</b>	<b>460,746</b>	<b>498,559</b>	<b>449,409</b>	<b>3%</b>	<b>\$ 1,556,369</b>	<b>\$ 1,678,827</b>	<b>\$ 1,625,577</b>	<b>-4%</b>

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	335,529	337,768	280,756	20%	\$ 1,636,523	\$ 1,502,945	\$ 1,288,742	27%
Wolcott Mill	26,478	12,826	20,965	26%	\$ 23,955	\$ 7,145	\$ 35,694	-33%
Stony Creek	444,292	495,677	389,427	14%	\$ 2,254,291	\$ 2,446,003	\$ 1,957,548	15%
Indian Springs	64,325	65,822	55,820	15%	\$ 297,333	\$ 274,080	\$ 234,705	27%
Kensington	574,606	564,137	495,705	16%	\$ 2,528,978	\$ 2,400,952	\$ 2,066,293	22%
Huron Meadows	74,963	63,745	54,708	37%	\$ 52,016	\$ 26,858	\$ 33,572	55%
Hudson Mills	165,823	170,317	133,310	24%	\$ 484,794	\$ 472,610	\$ 384,739	26%
Lower Huron/Willow/Oakwoods	368,272	345,288	326,913	13%	\$ 705,343	\$ 624,882	\$ 680,027	4%
Lake Erie	142,758	146,756	126,536	13%	\$ 490,796	\$ 510,748	\$ 472,297	4%
<b>Monthly TOTALS</b>	<b>2,197,046</b>	<b>2,202,336</b>	<b>1,884,141</b>	<b>17%</b>	<b>\$ 8,474,029</b>	<b>\$ 8,266,223</b>	<b>\$ 7,153,618</b>	<b>18%</b>

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	\$ 480,448	\$ 443,236	\$ 446,592	8%	\$ 2,183,229	\$ 1,839,635	\$ 1,773,929	23%
Wolcott Mill	\$ 11,814	\$ 7,481	\$ 12,128	-3%	\$ 91,210	\$ 49,924	\$ 130,132	-30%
Stony Creek	\$ 845,776	\$ 937,001	\$ 809,345	5%	\$ 3,815,904	\$ 3,607,613	\$ 3,064,730	25%
Indian Springs	\$ 261,383	\$ 227,198	\$ 205,044	27%	\$ 1,058,298	\$ 745,641	\$ 720,886	47%
Kensington	\$ 1,074,388	\$ 976,737	\$ 911,126	18%	\$ 4,259,029	\$ 3,442,828	\$ 3,297,020	29%
Huron Meadows	\$ 229,622	\$ 197,907	\$ 173,240	33%	\$ 848,271	\$ 507,620	\$ 539,482	57%
Hudson Mills	\$ 260,641	\$ 253,761	\$ 212,616	23%	\$ 1,036,955	\$ 856,170	\$ 759,528	37%
Lower Huron/Willow/Oakwoods	\$ 504,157	\$ 339,492	\$ 675,643	-25%	\$ 1,532,079	\$ 1,114,714	\$ 1,622,348	-6%
Lake Erie	\$ 307,212	\$ 278,875	\$ 357,800	-14%	\$ 1,277,988	\$ 1,048,195	\$ 1,137,400	12%
<b>Y-T-D TOTALS</b>	<b>\$ 3,975,441</b>	<b>\$ 3,661,688</b>	<b>\$ 3,803,534</b>	<b>5%</b>	<b>\$ 16,102,964</b>	<b>\$ 13,212,339</b>	<b>\$ 13,045,454</b>	<b>23%</b>

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	806,299	846,271	691,149	17%	6,090,344	5,497,172	4,968,790	23%
Western	879,717	864,021	739,543	19%	7,202,553	5,552,258	5,316,917	35%
Southern	511,030	492,044	453,449	13%	2,810,067	2,162,909	2,759,747	2%

HURON-CLINTON METROPARKS MONTHLY STATISTICS

July, 2021

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	6,655	7,527	6,430	4%	\$ 231,033	\$ 249,413	\$ 210,797	10%
Indian Springs	6,129	5,804	5,222	17%	\$ 190,834	\$ 178,624	\$ 155,655	23%
Kensington	6,992	7,300	6,385	10%	\$ 234,736	\$ 227,974	\$ 201,890	16%
Huron Meadows	6,218	6,483	5,540	12%	\$ 226,903	\$ 195,297	\$ 170,287	33%
Hudson Mills	5,416	5,461	4,590	18%	\$ 149,096	\$ 131,147	\$ 112,163	33%
Willow	4,199	6,360	5,227	-20%	\$ 130,574	\$ 189,026	\$ 154,066	-15%
Lake Erie	6,164	6,179	5,399	14%	\$ 186,414	\$ 171,132	\$ 151,686	23%
Total Regulation	41,773	45,114	38,793	8%	\$ 1,349,591	\$ 1,342,613	\$ 1,156,544	17%
LSC Par 3	1,415	1,268	1,464	-3%	\$ 10,816	\$ 10,248	\$ 9,824	10%
LSC Foot Golf	175	206	181	-3%	\$ 1,330	\$ 1,694	\$ 1,115	19%
<b>Total Golf</b>	<b>43,363</b>	<b>46,588</b>	<b>40,437</b>	<b>7%</b>	<b>\$ 1,361,737</b>	<b>\$ 1,354,555</b>	<b>\$ 1,167,483</b>	<b>17%</b>

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	22,946	18,121	17,382	32%	\$ 795,602	\$ 576,614	\$ 561,815	42%
Indian Springs	20,896	14,542	14,465	44%	\$ 659,555	\$ 440,256	\$ 429,126	54%
Kensington	25,135	18,785	19,015	32%	\$ 814,158	\$ 575,885	\$ 584,618	39%
Huron Meadows	20,775	15,638	15,824	31%	\$ 734,733	\$ 453,571	\$ 478,722	53%
Hudson Mills	18,140	13,606	12,757	42%	\$ 479,819	\$ 325,086	\$ 304,554	58%
Willow	17,907	13,920	12,412	44%	\$ 544,501	\$ 400,834	\$ 359,745	51%
Lake Erie	20,837	14,970	14,682	42%	\$ 624,795	\$ 397,970	\$ 402,372	55%
Total Regulation	146,636	109,582	106,537	38%	\$ 4,653,164	\$ 3,170,217	\$ 3,120,952	49%
LSC Par 3	3,883	4,219	3,921	-1%	\$ 33,890	\$ 34,730	\$ 27,963	21%
LSC Foot Golf	449	372	328	37%	\$ 3,388	\$ 2,998	\$ 2,215	53%
<b>Total Golf</b>	<b>150,968</b>	<b>114,173</b>	<b>110,786</b>	<b>36%</b>	<b>\$ 4,690,442</b>	<b>\$ 3,207,945</b>	<b>\$ 3,151,130</b>	<b>49%</b>

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	18,621	5,808	14,117	32%	\$ 90,343	\$ 23,151	\$ 68,466	32%
Stony Creek Rip Slide	10,744	0	6,266	71%	\$ 59,768	\$ -	\$ 31,985	87%
KMP Splash	21,512	17,960	17,351	24%	\$ 146,360	\$ 74,560	\$ 98,173	49%
Lower Huron	12,826	0	25,178	-49%	\$ 128,108	\$ -	\$ 269,124	-52%
Willow	7,852	4,676	7,688	2%	\$ 33,547	\$ 20,913	\$ 34,104	-2%
Lake Erie	0	0	9,401	-	\$ -	\$ -	\$ 75,227	-
<b>TOTALS</b>	<b>71,555</b>	<b>28,444</b>	<b>80,002</b>	<b>-11%</b>	<b>\$ 458,126</b>	<b>\$ 118,624</b>	<b>\$ 577,079</b>	<b>-21%</b>

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	29,372	6,342	23,950	23%	\$ 133,773	\$ 25,666	\$ 117,600	14%
Stony Creek Rip Slide	19,103	0	10,920	75%	\$ 104,254	\$ -	\$ 54,962	90%
KMP Splash	32,774	24,411	26,880	22%	\$ 192,156	\$ 101,536	\$ 157,109	22%
Lower Huron	13,058	0	40,559	-68%	\$ 130,435	\$ -	\$ 434,310	-70%
Willow	12,409	5,185	11,564	7%	\$ 54,062	\$ 23,035	\$ 52,940	2%
Lake Erie	0	0	16,199	-	\$ -	\$ 75	\$ 128,403	-
<b>TOTALS</b>	<b>106,716</b>	<b>35,938</b>	<b>130,072</b>	<b>-18%</b>	<b>\$ 614,680</b>	<b>\$ 150,312</b>	<b>\$ 945,325</b>	<b>-35%</b>

HURON-CLINTON METROPARKS MONTHLY STATISTICS

July, 2021

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
<b>Lake St. Clair</b>								
Welsh Center	4	0	2	140%	\$ 7,000	\$ -	\$ 1,467	377%
Shelters	28	75	47	-40%	\$ 10,593	\$ 13,468	\$ 11,163	-5%
Boat Launches	1,344	2,394	1,316	2%	\$ -	\$ -	\$ -	-
Marina	212	470	446	-52%	\$ 4,560	\$ 5,352	\$ 4,863	-6%
Mini-Golf	3,080	2,042	2,246	37%	\$ 14,141	\$ 9,155	\$ 8,820	60%
<b>Wolcott</b>								
Activity Center	1	0	6	-83%	\$ 500	\$ -	\$ 1,010	-50%
<b>Stony Creek</b>								
Disc Golf Daily	0	2,566	2,042	-	\$ 7,846	\$ 8,670	\$ 6,958	13%
Disc Golf Annual	3	6	3	-10%	\$ 180	\$ 360	\$ 200	-10%
Total Disc Golf	3	2,572	2,045	-100%	\$ 8,026	\$ 9,030	\$ 7,158	12%
Shelters	58	67	54	7%	\$ 12,793	\$ 15,075	\$ 12,133	5%
Boat Rental	6,073	10,024	7,090	-14%	\$ 66,782	\$ 101,861	\$ 73,266	-9%
Boat Launches	49	267	209	-77%	\$ -	\$ -	\$ -	-
<b>Indian Springs</b>								
Shelters	18	8	10	74%	\$ 1,875	\$ 700	\$ 1,342	40%
Event Room	9	0	2	286%	\$ 25,800	\$ -	\$ 3,722	593%
<b>Kensington</b>								
Disc Golf Daily	4,218	3,785	2,988	41%	\$ 14,858	\$ 12,371	\$ 9,443	57%
Disc Golf Annual	10	0	5	100%	\$ 560	\$ -	\$ 263	113%
Total Disc Golf	4,228	3,785	2,993	41%	\$ 15,418	\$ 12,371	\$ 9,706	59%
Shelters	72	101	68	5%	\$ 14,790	\$ 20,475	\$ 14,775	0%
Boat Rental	4,870	8,421	7,069	-31%	\$ 90,425	\$ 99,215	\$ 85,930	5%
<b>Huron Meadows</b>								
Shelters	9	10	6	59%	\$ 1,500	\$ 1,500	\$ 967	55%
<b>Hudson Mills</b>								
Disc Golf Daily	1,575	1,157	1,005	57%	\$ 4,725	\$ 3,471	\$ 3,015	57%
Disc Golf Annual	1	8	6	-82%	\$ 60	\$ 480	\$ 333	-82%
Total Disc Golf	1,576	1,165	1,011	56%	\$ 4,785	\$ 3,951	\$ 3,348	43%
Shelters	22	11	10	120%	\$ 3,600	\$ 1,800	\$ 1,867	93%
Canoe Rental	4,677	3,344	2,979	57%	\$ 9,505	\$ 15,279	\$ 9,468	0%
<b>Lower Huron / Willow / Oakwoods</b>								
Disc Golf Daily	173	244	211	-18%	\$ 519	\$ 732	\$ 637	-19%
Disc Golf Annual	0	0	0	-	\$ -	\$ -	\$ -	-
Total Disc Golf	173	244	211	-18%	\$ 519	\$ 732	\$ 637	-19%
Shelters	139	32	30	363%	\$ 15,850	\$ 6,125	\$ 6,125	159%
<b>Lake Erie</b>								
Shelters	24	10	10	148%	\$ 4,700	\$ 1,800	\$ 1,933	143%
Boat Launches	2,226	2,746	2,459	-9%	\$ -	\$ -	\$ -	-
Marina	0	0	194	-	\$ 46,561	\$ 44,314	\$ 36,559	27%



HURON-CLINTON METROPARKS MONTHLY STATISTICS

July, 2021

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
<b>Lake St. Clair</b>								
Welsh Center	25	13	34	-26%	\$ 46,700	\$ 17,700	\$ 28,458	64%
Shelters	379	246	241	57%	\$ 77,270	\$ 54,954	\$ 58,663	32%
Boat Launches	4,724	6,823	3,769	25%	\$ -	\$ -	\$ -	-
Marina	805	954	1,010	-20%	\$ 13,565	\$ 9,945	\$ 11,604	17%
Mini-Golf	5,190	3,830	4,708	10%	\$ 23,794	\$ 15,787	\$ 17,982	32%
<b>Wolcott</b>								
Activity Center	6	22	36	-83%	\$ 7,225	\$ 6,000	\$ 11,043	-35%
<b>Stony Creek</b>								
Disc Golf Daily	8,835	9,137	7,992	11%	\$ 37,540	\$ 30,451	\$ 26,637	41%
Disc Annual	121	41	82	47%	\$ 7,060	\$ 2,440	\$ 4,630	52%
Total Disc Golf	8,956	9,178	8,074	11%	\$ 44,600	\$ 32,891	\$ 31,267	43%
Shelters	461	286	305	51%	\$ 103,494	\$ 64,076	\$ 68,475	51%
Boat Rental	12,706	21,591	14,364	-12%	\$ 154,577	\$ 202,526	\$ 143,092	8%
Boat Launches	362	725	635	-43%	\$ -	\$ -	\$ -	-
<b>Indian Springs</b>								
Shelters	78	39	46	71%	\$ 10,250	\$ 4,576	\$ 6,617	55%
Event Room	31	12	21	50%	\$ 76,600	\$ 22,000	\$ 35,667	115%
<b>Kensington</b>								
Disc Golf Daily	20,772	15,994	13,417	55%	\$ 73,369	\$ 54,614	\$ 45,139	63%
Disc Annual	340	178	176	93%	\$ 19,840	\$ 10,500	\$ 10,062	97%
Total Disc Golf	21,112	16,172	13,593	55%	\$ 93,209	\$ 65,114	\$ 55,201	69%
Shelters	509	366	377	35%	\$ 108,697	\$ 76,008	\$ 82,790	31%
Boat Rental	9,505	14,383	12,451	-24%	\$ 167,404	\$ 158,029	\$ 151,142	11%
<b>Huron Meadows</b>								
Shelters	49	29	26	86%	\$ 8,200	\$ 4,800	\$ 4,933	66%
<b>Hudson Mills</b>								
Disc Golf Daily	6,584	4,888	4,322	52%	\$ 19,752	\$ 14,664	\$ 12,966	52%
Disc Annual	89	165	152	-42%	\$ 5,220	\$ 9,700	\$ 8,668	-40%
Total Disc Golf	6,673	5,053	4,474	49%	\$ 24,972	\$ 24,364	\$ 21,634	15%
Shelters	132	46	64	106%	\$ 23,000	\$ 7,550	\$ 12,717	81%
Canoe Rental	7,511	6,513	4,987	51%	\$ 13,783	\$ 15,279	\$ 9,835	40%
<b>Lower Huron / Willow / Oakwoods</b>								
Disc Golf Daily	1,287	893	772	67%	\$ 3,867	\$ 2,679	\$ 2,320	67%
Disc Annual	9	6	9	-4%	\$ 500	\$ 340	\$ 515	-3%
Total Disc Golf	1,296	899	782	66%	\$ 4,367	\$ 3,019	\$ 2,835	54%
Shelters	400	164	211	89%	\$ 70,825	\$ 33,225	\$ 45,308	56%
<b>Lake Erie</b>								
Shelters	78	41	53	48%	\$ 16,500	\$ 8,800	\$ 11,367	45%
Boat Launches	9,205	12,177	11,471	-20%	\$ -	\$ -	\$ -	-
Marina	0	0	502	-	\$ 153,729	\$ 132,440	\$ 117,166	31%

INTERPRETIVE FACILITIES								
PARK	Monthly Patrons Served				YTD Patrons Served			
	(total program participants and non-program visitors)				(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	18,086	18,950	20,484	-12%	93,892	93,130	99,727	-6%
Wolcott Mill	5,022	1,137	2,854	76%	31,575	7,972	16,740	89%
Wolcott Farm	5,231	4,029	5,351	-2%	28,299	9,236	23,701	19%
Stony Creek	26,649	20,256	22,695	17%	128,694	108,908	115,923	11%
Eastern Mobile Center	179	0	199	-10%	1,887	1,072	3,312	-43%
Indian Springs	2,911	4,779	4,954	-41%	26,888	33,579	34,908	-23%
Kens NC	30,312	36,930	32,402	-6%	233,672	234,551	211,732	10%
Kens Farm	28,586	40,781	33,604	-15%	168,274	82,972	134,986	25%
Western Mobile Center	512	0	396	29%	2,431	1,954	3,828	-36%
Hudson Mills	3,672	3,500	3,605	2%	21,219	19,811	22,026	-4%
Oakwoods	14,299	16,048	15,303	-7%	85,743	100,056	90,533	-5%
Lake Erie	17,764	19,257	17,495	2%	115,290	116,099	106,308	8%
Southern Mobile Center	649	0	335	94%	3,320	1,910	5,263	-37%
Totals	153,872	165,667	159,676	-4%	941,184	811,250	868,988	8%

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	\$ 1,200	\$ -	\$ 1,332	-10%	\$ 2,916	\$ 6,237	\$ 13,719	-79%
Wolcott Mill	\$ 20	\$ -	\$ 443	-95%	\$ 3,464	\$ 845	\$ 6,019	-42%
Wolcott Farm	\$ 1,249	\$ -	\$ 671	86%	\$ 4,373	\$ 2,444	\$ 34,276	-87%
Wagon Rides	\$ -	\$ -	\$ 222	-	\$ -	\$ -	\$ 2,170	-
Livestock/Produce	\$ 3,569	\$ 1,949	\$ 2,267	57%	\$ 25,261	\$ 16,773	\$ 21,962	15%
<b>FARM TOTAL</b>	<b>\$ 4,818</b>	<b>\$ 1,949</b>	<b>\$ 3,160</b>	<b>52%</b>	<b>\$ 29,634</b>	<b>\$ 19,217</b>	<b>\$ 58,408</b>	<b>-49%</b>
Stony Creek	\$ 715	\$ -	\$ 707	1%	\$ 3,465	\$ 3,681	\$ 11,297	-69%
Eastern Mobile Center	\$ 1,075	\$ -	\$ 575	87%	\$ 1,075	\$ 3,013	\$ 8,063	-87%
Indian Springs	\$ 407	\$ -	\$ 882	-54%	\$ 3,588	\$ 4,728	\$ 14,251	-75%
Kens NC	\$ 2,185	\$ -	\$ 1,949	12%	\$ 7,093	\$ 4,000	\$ 15,697	-55%
Kens Farm	\$ 4,417	\$ 457	\$ 3,192	38%	\$ 25,090	\$ 13,753	\$ 35,915	-30%
Wagon Rides	\$ 1,743	\$ 100	\$ 1,003	74%	\$ 2,096	\$ 3,451	\$ 8,462	-75%
Livestock/Produce	\$ 940	\$ 270	\$ 669	41%	\$ 940	\$ 1,346	\$ 2,251	-58%
<b>FARM TOTAL</b>	<b>\$ 7,100</b>	<b>\$ 827</b>	<b>\$ 4,864</b>	<b>46%</b>	<b>\$ 28,126</b>	<b>\$ 18,550</b>	<b>\$ 46,628</b>	<b>-40%</b>
Western Mobile Center	\$ 1,824	\$ -	\$ 1,058	72%	\$ 1,824	\$ 4,050	\$ 10,327	-82%
Hudson Mills	\$ 235	\$ -	\$ 346	-32%	\$ 7,200	\$ 1,562	\$ 7,066	2%
Oakwoods	\$ 422	\$ -	\$ 583	-28%	\$ 2,884	\$ 1,763	\$ 9,623	-70%
Lake Erie	\$ 467	\$ -	\$ 657	-29%	\$ 2,343	\$ 1,168	\$ 5,114	-54%
Southern Mobile Center	\$ -	\$ -	\$ 421	-	\$ -	\$ 6,045	\$ 10,156	-
Totals	\$ 20,468	\$ 2,776	\$ 16,977	21%	\$ 93,613	\$ 74,859	\$ 216,368	-57%

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	31	594	-	-	-	-	-	-
Wolcott Mill	-	-	-	-	-	-	-	-
Wolcott Farm	13	150	-	-	-	-	-	-
Stony Creek	15	149	50	156	-	-	-	-
Eastern Mobile Center					9	179	-	-
Indian Springs	11	161	-	-	1	22	-	-
Kens NC	12	222	-	-	-	-	-	-
Kens Farm	96	1,037	-	-	-	-	-	-
Western Mobile Center					21	512	-	-
Hudson Mills	9	131	-	-	2	41	-	-
Oakwoods	8	129	-	-	10	452	-	-
Lake Erie	11	128	-	-	1	31	-	-
Southern Mobile Center					16	649	-	-
<b>Totals</b>	<b>206</b>	<b>2,701</b>	<b>50</b>	<b>156</b>	<b>60</b>	<b>1,886</b>	<b>-</b>	<b>-</b>

BREAKDOWN OF ATTENDANCE	OTHER VISITORS (Non-programs)	
	Current	Previous
Lake St Clair	17,492	18,950
Wolcott Mill	5,022	1,137
Wolcott Farm	5,081	4,029
Stony Creek	26,500	20,100
Indian Springs	2,728	4,779
Kens NC	30,090	36,930
Kens Farm	27,549	40,781
Hudson Mills	3,500	3,500
Oakwoods	13,718	16,048
Lake Erie	17,605	19,257
<b>Totals</b>	<b>149,285</b>	<b>165,511</b>

"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.