

# Great Lakes Protection Fund

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2023 Annual Report



## Background

In 1989, the governors of the Great Lakes states created the Protection Fund to help them protect and restore their shared natural resources. The Fund is the first private endowment created to benefit a specific ecosystem. It is designed to support the creative work of collaborative teams that test new ideas, take risks, and share what they have learned. It is a source of financial support for groups that value innovation and entrepreneurship, focus on tangible benefits for the Great Lakes ecosystem, and learn by doing. Seven Great Lakes states contributed \$81.0 million to the Fund's permanent endowment.

The Fund does three things. First, it invests the endowment to produce income. This income supports regional projects, member states' individual Great Lakes priorities, and operations. Second, it designs and finances regional projects. These projects identify, demonstrate, and promote regional action to enhance the health of the Great Lakes ecosystem. Third, it monitors those regional projects to ensure that they are successful, modified when necessary, or terminated if they are not creating value for the ecosystem.

From its inception through December 2023, the Fund has made a total of 319 grants and program-related investments, representing a \$103.3 million commitment to protecting and restoring the ecological health of the Great Lakes ecosystem. Additionally, the Fund has paid \$58.3 million directly to its seven member states to support their individual Great Lakes priorities. Over the course of the past 34 years, the Great Lakes ecosystem has benefited from the States' initial investment of \$81.0 million with an overall commitment of \$161.6 million.

## Governors' Ongoing Priorities

From time to time the governors establish, modify and renew their ongoing Great Lakes priorities. Currently, the Fund's goals are responsive to the governors' stated priorities including the following:

- Ensure the sustainable use of our water resources while confirming that the States retain authority over water use and diversions of Great Lakes waters.
- Promote programs to protect human health against adverse effects of pollution in the Great Lakes ecosystem.
- Control pollution from diffuse sources into water, land and air.
- Continue to reduce the introduction of persistent bioaccumulative toxics into the Great Lakes ecosystem.
- Stop the introduction and spread of non-native aquatic invasive species.
- Enhance fish and wildlife by restoring and protecting coastal wetlands, fish and wildlife habitats.
- Restore to environmental health the Areas of Concern identified by the International Joint Commission as needing remediation.
- Standardize and enhance the methods by which information is collected, recorded and shared within the region.
- Adopt sustainable use practices that protect environmental resources and may enhance the recreational and commercial value of our Great Lakes.



## Activities During 2023

In the past year, the Fund realized over \$6.0 million in investment income from the endowment. The Fund returned \$1.4 million to its member states to support their individual Great Lakes priorities. The Fund paid \$3.7 million to support regional projects. Audited financial statements can be found in Appendix 1.

The Fund entered 2023 with 24 active projects focused on the priorities identified in our strategic plan: ensuring sustainable use of water resources, controlling pollution from diverse sources, and stopping the introduction and spread of non-native aquatic invasive species. Our focus is on building new solutions to these shared gubernatorial priorities. At the start of the year, these projects represented an investment by the Fund of \$18.3 million.

Over the course of the year, work was completed on 11 of these projects. These completed projects are identified in Appendix 2. All projects generated new and valuable tools that will ultimately improve the health of the Great Lakes ecosystem. Each project provided a unique and positive mission-related return on the Fund's investment.

During 2023, the Fund built, vetted and financed 6 new projects representing an investment of over \$4.7 million. The new projects – detailed in Appendix 3 - include an effort to scale pasture-based systems on small and medium-sized dairy farms to reduce nutrient runoff and open up new markets. Another project is testing a new approach that will allow land conservancies to better target and expand restoration efforts in impaired watersheds, and developing a permanent funding stream to pay for it. A third project is creating a new design, build, finance, and maintain service for green infrastructure for under-resourced communities. Three other projects are smaller, exploratory projects consistent with the Fund's strategic plan which encourages new types and sizes of awards to better target large investments, better engage experts that provide advice, and better engage our audiences. The complete portfolio of supported work, including new projects awarded in 2023, can be found in Appendix 3.

In other activities, we welcomed Erin McCarville as our new Vice President of Programs.

## Evaluation of the Corporation's Performance

The Fund successfully accomplished its objectives during 2023. Most notably, the Fund's endowment ended the year with a market value of \$150,166,874. State shares, paid in the spring of 2024 following our independent audit of financial statements, totaled \$1,352,744 for the year 2023; and \$58,254,028 since inception. These funds are available to member states to address their highest Great Lakes priorities.

We ended the year more financially secure and with a portfolio of active projects nearing \$17 million. Fund staff worked with all our project teams to be sure they were on track, helped them spot opportunities, adjusted work plans as needed, and worked with them to grow their innovations.

## Emerging Trends and Future Needs

The Governors have identified their priorities for Great Lakes Basin ecosystem protection and restoration. The Fund will continue its multi-year support agenda in support of these priorities by executing against our strategic plan.



# Members of the Corporation in 2023

## **Governor of Illinois**

J.B. Pritzker

## **Governor of Michigan**

Gretchen Whitmer

## **Governor of Minnesota**

Tim Walz

## **Governor of New York**

Kathy Hochul

## **Governor of Ohio**

Mike DeWine

## **Governor of Pennsylvania**

Josh Shapiro

## **Governor of Wisconsin**

Tony Evers



# Board of Directors in 2023

Kate Bartter (Columbus, OH)

Timothy Bruno (Erie, PA)

Erin Deeley, appointed, May 2023 (Madison, WI)

Joanne So Young Dill (Barrington, IL)

Judy Drabicki (Dexter, NY)

Tim Eder (Chelsea, MI)

Peter Gove, resigned, May 2023 (St. Paul, MN)

Richard Hylant (Ottawa Hills, OH)

Howard Learner (Chicago, IL)

Jill Jedlicka (Lancaster, NY)

Andrew McElwaine (Pittsburgh, PA)

Don Ness (Duluth, MN)

Laura Rubin (Ann Arbor, MI)

Demetria Smith (Milwaukee, WI)

Rebecca St. George, appointed, August 2023 (Duluth, MN)



# Great Lakes Protection Fund Staff

Stephen Cole – Vice President of Programs, retired October 2023

Shannon Donley – Project Implementation Manager

Carlotta Esposito – Research Fellow, joined March 2023

Collin Knauss – Project Development Manager

Mariela Lawrence – Administrative Assistant

Erin McCarville – Vice President of Programs, joined October 2023

Drew Pfeifer – Vice President of Operations

David Rankin – Executive Director



# Appendix 1

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## 2023 Audited Financial Statements



# Great Lakes Protection Fund

Financial Report  
December 31, 2023





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RSM US LLP

## Independent Auditor's Report

Board of Directors  
Great Lakes Protection Fund

### Opinion

We have audited the financial statements of Great Lakes Protection Fund (the Fund), which comprise the statements of financial position as of December 31, 2023 and 2022, the related statements of activities, and cash flows for the years then ended, and the related notes to the financial statements.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Fund as of December 31, 2023 and 2022, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

### Basis for Opinion

We conducted our audits in accordance with auditing standards generally accepted in the United States of America (GAAS). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Fund and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audits. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Fund's ability to continue as a going concern within one year after the date that the financial statements are issued or available to be issued.

### Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore, is not a guarantee that an audit conducted in accordance with GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

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In performing an audit in accordance with GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Fund's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Fund's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings and certain internal control-related matters that we identified during the audit.

*RSM US LLP*

Chicago, Illinois  
March 19, 2024



**Great Lakes Protection Fund**

**Statements of Financial Position  
December 31, 2023 and 2022**

	2023	2022
<b>Assets</b>		
Cash and cash equivalents	\$ 12,740,013	\$ 9,465,708
Investments	136,904,997	126,010,747
Receivable for security sold	460,000	-
Accrued interest	61,864	42,090
Other assets	54,352	47,190
Operating lease right-of-use asset	341,851	511,525
Furniture, equipment and leasehold improvements, net of accumulated depreciation of \$70,570 and \$62,314 in 2023 and 2022, respectively	11,332	7,720
	<b>\$ 150,574,409</b>	<b>\$ 136,084,980</b>
<b>Liabilities and Net Assets</b>		
Liabilities:		
State shares payable	\$ 1,352,744	\$ 1,332,157
Payable for security purchased	460,000	-
Accrued expenses	172,257	179,707
Operating lease liability	362,154	538,611
	<b>2,347,155</b>	<b>2,050,475</b>
Net assets:		
Without donor restrictions	8,791,717	8,393,301
With donor restrictions	139,435,537	125,641,204
	<b>148,227,254</b>	<b>134,034,505</b>
	<b>\$ 150,574,409</b>	<b>\$ 136,084,980</b>

See notes to financial statements.



**Great Lakes Protection Fund**

**Statements of Activities  
Year Ended December 31, 2023**

	Without Donor Restrictions	With Donor Restrictions	Total
<b>Income:</b>			
Realized investment income and gains, net	\$ 218,234	\$ 5,844,038	\$ 6,062,272
Miscellaneous revenue	-	1,509	1,509
Net assets released from restrictions	7,095,630	(7,095,630)	-
	<u>7,313,864</u>	<u>(1,250,083)</u>	<u>6,063,781</u>
<b>Expenses:</b>			
<b>Mission:</b>			
Regional grant payments	3,741,398	-	3,741,398
State shares	1,352,744	-	1,352,744
Salaries and benefits	754,141	-	754,141
Facilities	114,968	-	114,968
Other mission expenses	174,335	-	174,335
	<u>6,137,586</u>	<u>-</u>	<u>6,137,586</u>
<b>Management and general:</b>			
Salaries and benefits	571,430	-	571,430
Facilities	109,853	-	109,853
Other management and general expenses	276,761	-	276,761
	<u>958,044</u>	<u>-</u>	<u>958,044</u>
<b>Total expenses</b>	<u>7,095,630</u>	<u>-</u>	<u>7,095,630</u>
<b>Increase (decrease) in net assets before other items</b>	218,234	(1,250,083)	(1,031,849)
Unrealized gains	180,182	15,044,416	15,224,598
<b>Increase in net assets</b>	<u>398,416</u>	<u>13,794,333</u>	<u>14,192,749</u>
<b>Net assets:</b>			
Beginning of year	8,393,301	125,641,204	134,034,505
End of year	<u>\$ 8,791,717</u>	<u>\$ 139,435,537</u>	<u>\$ 148,227,254</u>

See notes to financial statements.



**Great Lakes Protection Fund**

**Statements of Activities  
Year Ended December 31, 2022**

	Without Donor Restrictions	With Donor Restrictions	Total
<b>Income:</b>			
Realized investment income and gains, net	\$ 86,122	\$ 5,674,058	\$ 5,760,180
Miscellaneous revenue	-	1,044	1,044
Net assets released from restrictions	6,524,583	(6,524,583)	-
	<u>6,610,705</u>	<u>(849,481)</u>	<u>5,761,224</u>
<b>Expenses:</b>			
<b>Mission:</b>			
Regional grant payments	3,431,672	-	3,431,672
State shares	1,332,157	-	1,332,157
Salaries and benefits	695,477	-	695,477
Facilities	138,328	-	138,328
Other mission expenses	176,533	-	176,533
	<u>5,774,167</u>	<u>-</u>	<u>5,774,167</u>
<b>Management and general:</b>			
Salaries and benefits	461,654	-	461,654
Facilities	106,035	-	106,035
Other management and general expenses	182,727	-	182,727
	<u>750,416</u>	<u>-</u>	<u>750,416</u>
<b>Total expenses</b>	<u>6,524,583</u>	<u>-</u>	<u>6,524,583</u>
<b>Increase (decrease) in net assets before other items</b>	86,122	(849,481)	(763,359)
Unrealized losses	(200,226)	(29,867,095)	(30,067,321)
<b>Decrease in net assets</b>	<u>(114,104)</u>	<u>(30,716,576)</u>	<u>(30,830,680)</u>
<b>Net assets:</b>			
Beginning of year	<u>8,507,405</u>	<u>156,357,780</u>	<u>164,865,185</u>
End of year	<u>\$ 8,393,301</u>	<u>\$ 125,641,204</u>	<u>\$ 134,034,505</u>

See notes to financial statements.



**Great Lakes Protection Fund**

**Statements of Cash Flows  
Years Ended December 31, 2023 and 2022**

	2023	2022
Cash flows from operating activities:		
Cash provided by dividends, interest and miscellaneous	<b>\$ 4,276,574</b>	\$ 3,550,569
Cash payments for:		
Grants	<b>(3,741,398)</b>	(3,431,672)
State shares	<b>(1,332,157)</b>	(1,593,885)
Salaries and benefits	<b>(1,399,818)</b>	(1,211,233)
Facilities	<b>(234,800)</b>	(231,104)
Investment management and advisory fees	<b>(112,970)</b>	(144,487)
Other operating expenses	<b>(486,587)</b>	(405,176)
<b>Net cash used in operating activities</b>	<b>(3,031,156)</b>	(3,466,988)
Cash flows from investing activities:		
Purchases of investments	<b>(7,917,367)</b>	(6,120,300)
Proceeds from sales of investments	<b>14,234,696</b>	8,154,236
Purchases of furniture, equipment and leasehold improvements	<b>(11,868)</b>	(2,684)
<b>Net cash provided by investing activities</b>	<b>6,305,461</b>	2,031,252
<b>Increase (decrease) in cash and cash equivalents</b>	<b>3,274,305</b>	(1,435,736)
Cash and cash equivalents:		
Beginning of year	<b>9,465,708</b>	10,901,444
End of year	<b>\$ 12,740,013</b>	\$ 9,465,708

See notes to financial statements.



## Great Lakes Protection Fund

### Notes to Financial Statements

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#### Note 1. Nature of Activities and Significant Accounting Policies

Great Lakes Protection Fund (the Fund) is a nonprofit organization designed to have as its members the governors of the eight states bordering on the Great Lakes. Seven of the states have joined the Fund and have made contributions, as specified in the Fund's articles of incorporation, to establish their membership in the Fund. Income earned on the contributions is used to provide grants which finance projects advancing the health of the ecosystem of the Great Lakes Basin.

**Basis of accounting:** Under accounting principles generally accepted in the United States of America (U.S. GAAP), nonprofit organizations report net assets in two classes: net assets with donor restrictions or net assets without donor restrictions, based on the existence or absence of donor-imposed restrictions.

**Cash and cash equivalents:** For purposes of the financial statements, the Fund considers money market funds to be cash equivalents.

The Fund maintains cash accounts at financial institutions, which at times may exceed \$250,000. A significant portion of cash equivalents is invested in interest-bearing money market accounts. Such amounts are insured by the Federal Deposit Insurance Corporation (FDIC) up to \$250,000 per taxpayer ID number. The Fund has not experienced any losses in such accounts. Management believes that the Fund is not exposed to any significant credit risk on cash and cash equivalents.

**Investments:** Investments are reflected at fair value based on quoted market prices. Realized gains on the sale of mutual funds are computed using the specific identification method. Realized gains on the sale of other investments are computed using the first-in, first-out method (FIFO). Purchases and sales of investments are recorded on a trade date basis. Interest is recorded on the accrual basis. Dividend income is recorded on the ex-dividend date. Endowment fund investment income or loss (including gains and losses on investments, interest and dividends) is recorded as increases or decreases in net assets with donor restrictions until appropriated for expenditure by the Fund. Other investment income or loss is included in the statements of activities as increases or decreases in net assets without donor restrictions unless the income or loss is restricted by donor or law. Changes in fair value are recorded as unrealized gains/losses in the statements of activities.

The Fund invests in various investments. Such investments are exposed to various risks such as interest rate, market and credit risk. Due to the level of risk associated with certain investments, it is at least reasonably possible that changes in the values of investments will occur in the near term and that such changes could materially affect the amounts reported in the statements of financial position.

**Furniture, equipment and leasehold improvements:** Furniture, equipment and leasehold improvements are stated at cost. Depreciation is recorded on a straight-line basis over the estimated useful lives of the assets ranging from three to seven years. Leasehold improvements are amortized over the lesser of useful life or lease term.

**Leases:** The Fund follows the lease accounting guidance in FASB ASC Topic 842. The Fund determines if an arrangement is a lease at the inception of the contract. Under Topic 842, a lease is a contract, or part of a contract, that conveys the right to control the use of identified property or equipment (i.e., an identified asset) for a period of time in exchange for consideration. The Fund's contracts determined to be or contain a lease include explicitly or implicitly identified assets where the Fund has the right to obtain substantially all of the economic benefits of the asset and has the ability to direct how and for what purpose the assets are used during the lease term.





## Great Lakes Protection Fund

### Notes to Financial Statements

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#### **Note 1. Nature of Activities and Significant Accounting Policies (Continued)**

Leases are classified as either operating or financing. For operating leases, the Fund recognizes a lease liability equal to the present value of the remaining lease payments, and a right of use asset equal to the lease liability, subject to adjustments, such as for prepaid rent. The lease term may include options to extend or terminate the lease when it is reasonably certain that the Fund will exercise the option. The Fund has elected to use an estimate of their incremental borrowing rate as the discount rate.

**Grant commitments:** Payment of grants beyond the initial installments is contingent on the satisfaction by the recipients of agreed-upon requirements. Unpaid amounts are accrued only if the conditions have been met. Most grants cover a three to five year period.

**State shares:** In accordance with the articles of incorporation, the Fund is required to disburse to the member states one-third of its realized income after deducting operating expenses, excluding grants. Amounts paid to the states are to be used for the furtherance of the Fund's activities and are allocated on the basis of the state's respective contribution.

**Functional expenses:** The costs of providing the Fund's mission and other activities have been summarized on a functional basis in the statements of activities. Accordingly, certain costs have been allocated among mission and management and general expenses.

The financial statements report certain categories of expenses that are attributed to more than one function. Therefore, expenses require allocation on a reasonable basis that is consistently applied. The expenses that are allocated include salaries and benefits, which are allocated on the basis of estimates of time and effort, as well as facilities, which are allocated on a square footage basis.

**Use of estimates:** The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions affecting the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Actual results could differ from the estimates.

**Income taxes:** The Fund is exempt from income taxes under Section 115(1) of the Internal Revenue Code (IRC) and applicable state law.

The Fund follows the accounting guidance related to accounting for uncertainty in income taxes, which addresses the determination of whether tax benefits claimed or expected to be claimed on a tax return should be recorded in the financial statements. Under this guidance, the Fund may recognize the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities, based on the technical merits of the position. Examples of tax positions include the tax-exempt status of the Fund and various positions related to the potential sources of unrelated business taxable income. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than 50% likelihood of being realized upon ultimate settlement. At December 31, 2023 and 2022, there were no unrecognized tax benefits identified or recorded as liabilities.

**Subsequent events:** The Fund has evaluated subsequent events for potential recognition and/or disclosure through March 19, 2024, the date the financial statements were available to be issued.



**Great Lakes Protection Fund**

**Notes to Financial Statements**

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**Note 2. Liquidity and Availability**

The Fund regularly monitors liquidity to meet its grant payments, operating needs and the annual state share payments (general expenditures). The Fund relies on investment income and available financial assets to meet general expenditures over the next 12 months.

The tables below present information related to financial assets available for general expenditures within one year at December 31, 2023 and 2022:

	2023	2022
Financial assets at year-end:		
Cash and cash equivalents	\$ 12,740,013	\$ 9,465,708
Investments	136,904,997	126,010,747
Receivable for security sold	460,000	-
Accrued interest	61,864	42,090
	<u>\$150,166,874</u>	<u>\$135,518,545</u>
Financial assets not available for general expenditures within one year:		
Donor-restricted endowment	\$ 81,000,000	\$ 81,000,000
Donor-restricted earnings on endowment, less future year estimated appropriations of \$7,379,000 and \$7,537,000, respectively	51,056,537	37,104,204
	<u>\$132,056,537</u>	<u>\$118,104,204</u>
Financial assets available for general expenditures within one year	<u>\$ 18,110,337</u>	<u>\$ 17,414,341</u>

Cash and cash equivalents are available on demand. All investments at year-end can be converted to cash within three days of a sale.



## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 3. Investments

Investments consist of the following:

	2023	
	Cost	Fair Value
Exchange-traded funds:		
Global equity:		
Global equity index	\$ 3,820,495	\$ 6,576,464
International equity:		
Developed markets index	5,250,000	5,530,880
Mutual funds:		
Domestic equity:		
Large cap index	15,238,311	54,564,881
Mid cap index	3,910,881	7,498,899
Small cap index	3,918,055	7,224,577
International equity:		
Emerging markets	7,007,858	7,449,522
Small cap	2,237,851	2,286,308
Developed markets index	4,401,584	5,250,176
Global equity:		
Global impact	1,000,000	1,203,307
Fixed income:		
Core plus	12,715,049	11,512,098
Core impact	500,000	482,334
Core	6,600,000	5,852,158
Strategic income	8,936,055	8,294,376
Short-term treasury	4,150,000	4,036,318
Intermediate-term government	4,066,667	3,723,785
U.S. government securities	5,449,904	5,418,914
	<u>\$ 89,202,710</u>	<u>\$ 136,904,997</u>



## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 3. Investments (Continued)

	2022	
	Cost	Fair Value
Exchange-traded funds:		
Global equity:		
Global equity index	\$ 4,500,396	\$ 6,464,478
Mutual funds:		
Domestic equity:		
Large cap index	17,851,893	47,446,562
Mid cap index	4,525,858	7,604,914
Small cap index	4,551,703	7,221,783
International equity:		
Emerging markets	7,800,040	7,451,737
Small cap	2,237,851	2,116,715
Developed markets index	4,401,445	4,567,154
Foreign large value	5,163,008	4,687,973
Global equity:		
Global impact	1,000,000	1,055,244
Fixed income:		
Core plus	11,805,049	10,304,134
Core impact	500,000	472,698
Core	6,600,000	5,697,842
Strategic income	8,936,055	8,092,074
Short-term treasury	4,150,000	3,928,630
Intermediate-term government	4,066,667	3,666,888
U.S. government securities	5,443,093	5,231,921
	<u>\$ 93,533,058</u>	<u>\$ 126,010,747</u>

#### Note 4. Fair Value Disclosures

The accounting guidance on fair value provides a framework for measuring fair value and defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants on the measurement date. That framework provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

Financial assets and liabilities carried at fair value will be classified and disclosed in one of the following three categories:

- Level 1:** Valuations for assets and liabilities traded in active exchange markets, such as the New York Stock Exchange (NYSE). Level 1 assets primarily include listed equities, money market funds, government securities, mutual funds and exchange-traded funds. Valuations are obtained from readily available pricing sources for market transactions involving identical assets or liabilities.
- Level 2:** Valuations for assets and liabilities traded in less active dealer or broker markets. Valuations are obtained from third-party pricing services for identical or similar assets or liabilities. Level 2 assets primarily include equities traded in over-the-counter markets.



**Great Lakes Protection Fund**

**Notes to Financial Statements**

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**Note 4. Fair Value Disclosures (Continued)**

**Level 3:** Valuations for assets and liabilities that are derived from other valuation methodologies, including option pricing models, discounted cash flow models and similar techniques, and not based on market exchange, dealer, or broker-traded transactions. Level 3 valuations incorporate certain assumptions and projections in determining the fair value assigned to such assets or liabilities.

In certain cases, the inputs used to measure fair value may fall into different levels of the fair value hierarchy. In such cases, an investment's level within the fair value hierarchy is based on the lowest level of input that is significant to the fair value measurement. The Fund's assessment of the significance of a particular input to the fair value measurement in its entirety requires judgment, and considers factors specific to the investment.

For the years ended December 31, 2023 and 2022, the application or valuation techniques applied to similar assets and liabilities have been consistent. The following is a description of the valuation methodology used for assets measured at fair value:

Investments in securities traded on a national securities exchange, or reported on the NASDAQ national market, are stated at the last reported sales price on the day of valuation. These financial instruments are classified as Level 1 in the fair value hierarchy.

The Fund assesses levels of the investments at each measurement date, and transfers between levels are recognized on the actual date of an event or change in circumstances that caused the transfer. For the years ended December 31, 2023 and 2022, there were no such instances.

All of the Fund's investments are classified as Level 1 as of December 31, 2023 and 2022.

**Note 5. Grants Activity**

Grants activity for 2023 and 2022 is as follows:

	Grants Approved	Grants Paid	Grants Payable
2023	\$ 4,670,000	\$ 3,741,398	\$ -
2022	4,700,000	3,431,672	-

As of December 31, 2023, total grants approved since the Fund's inception amounted to approximately \$103.3 million. At December 31, 2023 and 2022, the Fund had approved approximately \$8.4 million and \$7.4 million of grants, respectively, for which the conditions, which generally represent project goals and objectives, have not yet been met and therefore, grant expenses have not yet been recognized. Upon satisfaction of the conditions by the recipients, the Fund will recognize the grant expenses and disburse the remaining payments. The terms of most grants cover a three-to five-year period.



## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 6. Net Assets

**Net assets without donor restrictions:** Net assets that are not subject to donor-imposed restrictions and may be expended for any purpose in performing the primary objectives of the Fund. Certain net assets without donor restrictions have been designated by the Board of Directors as a Sequestration Fund and a Temporary Reserve Fund. Combined, the Sequestration Fund and the Temporary Reserve Fund represent an estimate of amounts sufficient to provide for 18 months of expenses so the Fund can continue to pursue its mission in the event of long-term economic downturn. The balances of \$8,791,717 and \$8,393,301 in net assets without donor restrictions for 2023 and 2022, respectively, represents the combined unspent portion of the Sequestration Fund and Temporary Reserve Fund of \$8,000,000, plus any interest earned.

**Net assets with donor restrictions:** Net assets subject to stipulations imposed by donors and grantors. Some donor restrictions are temporary in nature; those restrictions will be met by actions of the Fund or by the passage of time. Other donor restrictions are perpetual in nature, where the donor has stipulated the funds be maintained in perpetuity.

Net assets with donor restrictions were as follows for the years ended December 31, 2023 and 2022:

	2023	2022
Original donor-restricted endowment contribution amount and amounts required to be retained by donor:		
Illinois	\$ 15,000,000	\$ 15,000,000
Michigan	25,000,000	25,000,000
Minnesota	1,500,000	1,500,000
New York	12,000,000	12,000,000
Ohio	14,000,000	14,000,000
Pennsylvania	1,500,000	1,500,000
Wisconsin	12,000,000	12,000,000
	<u>81,000,000</u>	<u>81,000,000</u>
Accumulated investment gains on endowment funds, which, once appropriated, are expendable to support the activities of the Fund	58,435,537	44,641,204
Total net assets with donor restrictions	<u>\$139,435,537</u>	<u>\$125,641,204</u>

Donor-restricted endowment contributions represent the contributions received from member states in accordance with the Fund's articles of incorporation. These amounts cannot be expended.

With the exception of Indiana, all states have made their required contributions. There is no due date for the contribution payable by Indiana, which has not yet joined the Fund.

#### Note 7. Endowment Net Assets

The Fund's endowment net assets are comprised of restricted contributions made by the member states, as well as the net effect of the realized and unrealized investment returns and losses on those investments and the operating expenses of the Fund. As the original contributions were made for the purpose of establishing a fund of assets to provide income for the Fund, the Fund's net assets are considered an endowment, as defined by accounting guidance related to financial statement presentation for nonprofit organizations.



**Great Lakes Protection Fund**

**Notes to Financial Statements**

**Note 7. Endowment Net Assets (Continued)**

**Interpretation of relevant law:** The Fund has interpreted the Illinois Uniform Prudent Management of Institutional Funds Act (UPMIFA) as requiring the preservation of the fair value of the original contribution as of the contribution date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Fund classifies as net assets with donor restrictions (a) the original value of contributions donated to the permanent endowment, (b) the original value of subsequent contributions to the permanent endowment and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor contribution instrument at the time the accumulation is added to the Fund. In accordance with UPMIFA, the Fund considers the following factors in making a determination to appropriate or accumulate earnings on donor-restricted endowment funds:

1. The duration and preservation of the Fund
2. The purpose of the Fund and the donor-restricted endowment fund
3. General economic conditions
4. The possible effect of inflation and deflation
5. The expected total return from income and the appreciation of investments
6. Other resources of the Fund
7. The investment policies of the Fund

The changes in endowment net assets for the Fund were as follows for 2023 and 2022:

	2023	2022
	With Donor Restrictions	With Donor Restrictions
Endowment net assets, beginning of year	\$125,641,204	\$156,357,780
Realized income and gains, net	5,844,038	5,674,058
Miscellaneous revenue	1,509	1,044
Unrealized gain (loss) on investments	15,044,416	(29,867,095)
Amounts appropriated for expenditure	(7,095,630)	(6,524,583)
Endowment net assets, end of year	<u>\$139,435,537</u>	<u>\$125,641,204</u>

**Return objectives and risk parameters:** The Fund has adopted endowment investment and spending policies that attempt to provide a predictable stream of funding to its programs while ensuring that the original value of the endowment contributions is preserved. Assets are invested in a manner intended to achieve an annualized nominal return of 5% to 8%. Actual returns in any given year may vary from this amount.

**Strategies employed for achieving objectives:** To satisfy its long-term rate-of-return objectives, the Fund relies on a total return strategy in which returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Fund targets a diversified asset allocation that places a greater emphasis on equity-based investments to achieve its long-term return objectives within prudent risk constraints.

**Spending policy and how the investment objectives relate to spending policy:** The Fund has a policy of appropriating an estimate of expenditures each year as part of a formal, annual budget. Adjustments to appropriations are also approved during the year as unexpected changes arise.



**Great Lakes Protection Fund**

**Notes to Financial Statements**

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**Note 8. Lease Obligation**

The Fund leases office space under a lease classified as an operating lease. The office lease expires in November 2025, with an option to extend the lease for an additional five-year period. The five-year extension option is not recognized as part of the Funds' right-to-use asset and lease liability as it is not reasonably certain the option will be exercised. The Fund's lease agreement does not provide an implicit rate. As the Fund did not have any external borrowings at the transition date with comparable terms to its lease agreement, the Fund estimated its incremental borrowing rate based on rates in the market for collateralized debt at the transition date with the same term as the associated lease. The Fund elected to use a discount rate of 3.25%. Lease related information for the years ended December 31, 2023 and 2022, is as follows:

	2023	2022
Operating lease cost	\$ 184,053	\$ 184,053
Cash paid for amounts included in the measurement of lease liabilities: Operating cash flows from operating leases	\$ 190,831	\$ 188,252
Weighted-average remaining lease term—operating leases		1.9 years
Minimum payments required under the lease are as follows:		
2024		\$ 193,411
2025		179,658
		<u>373,069</u>
Less amounts representing interest		(10,915)
Total obligation		<u>\$ 362,154</u>

**Note 9. Retirement Plan**

The Fund maintains a retirement plan under the provisions of Section 401(a) of the IRC applicable to governmental retirement plans. The Fund makes contributions under two provisions in the plan:

- (1) Contributions equal to 10% of each employee's compensation. All employees must participate upon commencement of employment.
- (2) Discretionary matching contributions in the amount of 100% of the employee's deferral contributions to the Fund's 457(b) deferred compensation plan (Note 10). The Fund's discretionary matching contributions are limited to 6% of the employee's compensation for the year. All employees contributing to the Fund's 457(b) deferred compensation plan are eligible to participate.

All Fund contributions on behalf of employees are 100% vested when made. The Fund contributed \$172,998 and \$148,422 to the retirement plan for 2023 and 2022, respectively.





## **Great Lakes Protection Fund**

### **Notes to Financial Statements**

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#### **Note 10. Deferred Compensation Plan**

The Fund maintains a deferred compensation plan under the provisions of Section 457(b) of the IRC. All employees are eligible to voluntarily participate upon commencement of employment. Participants can elect to participate in the deferred compensation to the extent permitted by applicable contribution limits under Section 457(b) of the IRC.

The Fund makes discretionary matching contributions to the retirement plan (Note 9) in the amount of 100% of the employee's deferral contributions to the Fund's 457(b) deferred compensation plan. The Fund's discretionary matching contributions are limited to 6% of the employee's compensation for the year. Only employee contributions were made to the deferred compensation plan for 2023 and 2022.



# Appendix 2

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## Projects Completed in 2023



### **Great Lakes One Water Partnership: Path to Sustainability (\$532,000)**

Public Sector Consultants, Inc.  
Contact: Elizabeth Riggs

This project established a path to sustainability for the Great Lakes One Water (GLOW) partnership, a first-of-its-kind effort to bring the region's shoreline community foundations together to develop solutions around water. The GLOW partnership encompassed 27 lakeshore community foundations working together in six regional teams (Upper Great Lakes, Lake Erie, Lake Huron, Lake Ontario, Lower Lake Michigan, and Upper Lake Michigan) to address the water infrastructure issues in their respective communities. The project built transformational leadership on water issues and expanded the ability of the region's shoreline communities to address the water quality and human health challenges posed by aging water, stormwater, and wastewater systems.

This project's focus was on building the local capacity within the GLOW partnership to ensure its success and long-term sustainability and included up to \$210,000 for grants that directly supported the water-focused action agendas built by the six regional teams. This project developed tools to help the GLOW partnership communicate with the public, local decision-makers, and elected officials, and expanded the ability of its members to raise funds locally and regionally to support their activities. This network of strong regional partnerships can be a model for other regions that are ready to collaborate and take action on water issues across their communities.

### **Identifying the Extent and Impact of Farmer-Centered Conservation Networks in the Great Lakes Basin (\$65,000)**

National Wildlife Federation  
Contact: Adam Reimer

This team created an inventory of farmer-centered networks within the region. Through interviews with key individuals and organizations, supported by surveys and targeted interviews with existing networks, the team built a database of existing farmer-centered networks to characterize them. This inventory enabled supporting organizations to better understand what segments of the farming population are currently being served by networks, and which are currently underserved. The collaborative process required to develop the inventory provided an important first step in understanding how to scale up network-based approaches to support farmers and increase agricultural practices that improve water quality.

### **Overcoming Barriers to Municipal Green Infrastructure Implementation (\$150,000)**

Delta Institute  
Contact: William Schleizer

This design project examined the primary obstacles to developing green infrastructure and other stormwater management projects in small and mid-size communities. Stormwater management projects in municipalities are becoming increasingly urgent, driven by frequent flooding and exacerbated by more frequent and intense storms. These problems develop most acutely in low-income and disadvantaged communities where governments and sewer districts lack the resources to deliver effective solutions. Often, smaller communities have fewer financing



options for green infrastructure and stormwater management projects than their larger counterparts. At the same time there is growing investor interest in financing green infrastructure projects in these communities.

This project was an important first step in connecting these communities in need with interested investors and other sources of project financing. The project team worked with managers from small and under-resourced Great Lakes municipalities to better understand their challenges and barriers to green infrastructure. They also worked with potential investors to design financial “prototype” products that bridge this gap.

The Fund’s Board of Directors awarded up to \$1,400,000 to pilot the strategies developed in the design phase.

### **Permanently Protect Problematic Watersheds Through Great Lakes-Friendly Product Labelling (\$90,000)**

Freshwater Society  
Contact: Carrie Jennings

This design project sought to develop a program to identify the smaller parcels of land that contribute disproportionately to nutrient pollution and create a permanent funding stream to remove them from agricultural use and restore them to perennial vegetation. The team worked with subject matter experts to develop a methodology for identifying land to put into conservation, created partnerships to buy and manage the land, and began to develop an income stream to fund the program.

The Fund’s Board of Directors awarded up to \$1,500,000 to pilot the strategies developed in the design phase.

### **Extending the Great Lakes Impact Investment Platform (\$170,000)**

Great Lakes St. Lawrence Governors and Premiers  
Contact: David Naftzger

The goal of this project was to establish a sustainable business model that would generate a permanent revenue stream for the Great Lakes Impact Investment Platform (Platform). Under a previous award, the team developed the Platform as a new model to catalyze impact investing in the Great Lakes region for the benefit of the environment. The purpose of the Platform was to showcase investments (green bonds, environmental impact bonds, and other lending instruments) that deliver positive Great Lakes environmental outcomes and contribute to the vitality of the region. The Platform also tracked the performance of these investments against key environmental outcomes for the Great Lakes. These outcomes are gallons of water saved, kilowatts of energy saved, tons of carbon reduced or stored, tons of nutrients reduced, and acres of forest and farmland certified. By increasing attention to such investments, investors will be more motivated to make them in the region.

Two new initiatives were created to provide funding support to the Platform. One is the *Great Lake St. Lawrence Trees Initiative*, a new regional effort to plant 250 million trees by 2033. The second is a new program called *Great Lakes Green Events* that incentivizes sustainable conferences and other events in the region.



### **Creating the Foundation for Dairy Farm Transitions to Low Overhead Regenerative Grazing (\$150,000)**

Wallace Center at Winrock International

Contact: Elisabeth Spratt

This design effort developed pathways for small and medium-sized farms to transition their conventional dairy operations to regenerative grazing (i.e. maintaining perennial pasture for dairy herds without tillage and with minimal synthetic inputs). Low-overhead regenerative dairy farming offers a compelling opportunity for small and medium-sized dairy farmers to enter into a profitable, ecologically friendly system. The team identified areas in the Great Lakes basin with the highest economic and ecological benefits, and developed transition pathways for small-and medium-sized dairy farms.

The Fund's Board of Directors awarded up to \$1,560,000 to pilot the strategies developed in the design phase.

### **Great Lakes Compact Gala (\$10,000)**

Great Lakes St. Lawrence Governors and Premiers

Contact: David Naftzger

The Fund provided funding for the Great Lakes Compact Gala, celebrating the 15<sup>th</sup> anniversary of the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Compact (Compact). This symposium provided a unique opportunity to hear from those who negotiated the Compact and Agreement, the challenges they see for the future, and the lessons that were learned to share with others trying to develop other multijurisdictional policies. It also provided an opportunity for current members of the Regional Body and Compact Council to meet with those who developed the Compact and Agreement.

### **Healthy Port Futures (\$1,590,000)**

University of Pennsylvania

Contact: Sean Burkholder, Brian Davis (University of VA, co-lead)

Awarded in 2017, and developed through a project design award, the team piloted new passive sediment management (PSM) strategies at river mouths and nearshore areas to create critical wetland habitat, improve water quality, support local economies, and greatly reduce the cost and environmental impacts from dredging.

Ports and harbors are located at river mouths, formerly rich ecosystems, that are still some of the most ecologically productive and sensitive areas in the region. Managing sediment is a significant challenge in these systems addressed with a limited set of conventional tools –dredging, confined and open lake disposal, and limited beneficial reuse. PSM uses the natural flows and river processes to direct sediment to desirable areas (such as shorelines and shallow areas) and away from undesirable areas (deep channels). This creates healthy wetland and benthic habitat benefiting both aquatic and terrestrial wildlife, creates recreational and tourism opportunities in the ports, and greatly reduces the need for dredging.

With Fund support, this team successfully piloted different PSM strategies at four locations in the Great Lakes: Ashtabula, OH, and Lorain, OH (both on Lake Erie); Port Bay, NY (Lake Ontario); and Illinois Beach State Park, Waukegan, IL (Lake Michigan). The project was selected as one of six projects from across the world by the



American Society of Landscape Architecture ASLA Professional Awards. It was featured in two books, *Design with Nature Now* published by the Lincoln Institute of Land Policy, and *Fresh Water: Design Research for Inland Water Territories*, published by Applied Research and Design; and was covered by the press in numerous articles.

### **Advancing Systemic and Fundamental Changes in Agricultural Water Resources Management (\$1,135,000)**

Kieser & Associates, LLC  
Contact: Mark S. Kieser

Awarded in 2016, this project reshaped traditional agricultural operations by demonstrating approaches that merge drainage management authority objectives with conservation services that follow circular economy principles. Testing three different strategies, the team sought to improve water quality, rebuild soil health, and increase crop resiliency while benefiting farm economics and creating new business opportunities throughout the region.

One strategy focused on restructuring the taxes (or fees) farmers and other landowners make to drainage districts to reward those who manage their land to improve water quality. Agricultural landowners in legal drainage districts must pay fees to maintain and improve the public drainage systems that serve them. These fees are generally based purely on acreage and/or linear extent of the adjacent drainage. In the St. Joseph River Basin (Lagrange County), the team piloted a new approach to assessing drainage fees so that some landowners paid less in fees and some paid more depending on how they managed their land to improve soil and water quality.

In addition to a new drainage fee assessment program, the team tested two other treatment approaches supporting circular economy principles on fields in Michigan and Wisconsin – 1) a specialized compost produced from food wastes and other traditionally landfilled organic waste streams, and; 2) the application of special filters installed at the end of a tile drain outlet to capture soluble phosphorus leaving farm fields. The team created the patent-pending Compact Agricultural Phosphorus Treatment Structure (or CAPTURE™ system) that can easily be installed at the end of a tile drain to remove soluble phosphorus, providing a much-needed small-footprint solution.

### **Massively-scalable Water Information Systems (\$905,000)**

HyFi, LLC  
Contact: Brandon Wong

Awarded in 2019, this project sought to improve the ecological health of the Great Lakes by developing and deploying large-scale, hyper-resolution sensor networks that would enable stormwater, watershed, and emergency managers to respond better to changing weather patterns and extreme weather events. To meet this goal, the team developed a novel, affordable sensor that's easy to install and maintain and a software package that allows managers to remotely see water levels in real-time, providing critical data to inform flood warnings, emergency response, and watershed management decisions.



The team piloted their sensor networks across the Shiawassee River watershed in Michigan, the Chagrin and Cuyahoga River watersheds in the greater Cleveland area, and the Owasco Lake watershed in Auburn, New York. Each network contained about 50 sensors, each reporting water level data continuously. The team built one of the largest water information systems in existence, with three states (MI, OH, NY), over 35 counties and municipalities, over 140 active users, and 150 sensors.

### **Great Lakes Resiliency and Finance Cluster (\$1,230,000)**

Environmental Consulting & Technology, Inc.

Contact: Sanjiv Sinha

Awarded in 2019, this project created a 1st-for-the-Great Lakes network of professionals focused on market-based, efficient, and effective delivery of green stormwater infrastructure (GSI) across the region. The team recruited municipal leaders, stormwater experts, and finance professionals to form the Resilient Infrastructure Sustainable Communities (RISC) cluster – a self-sustaining and permanent network of professionals committed to large-scale GSI. During the project, the team, with support and guidance from RISC, performed important foundational work to drive down transaction costs, maximize benefits, and prioritize investments to make it easier for Great Lakes communities to implement GSI.

In addition, the team developed a business plan to restore forests and wetlands across the greater Milwaukee region for the Milwaukee Metropolitan Sewerage District (MMSD), and a plan to scale GSI in underserved communities across the greater Chicago region for the Metropolitan Water Reclamation District (MWRD) of Greater Chicago.



# Appendix 3

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## Portfolio of Projects as of December, 2023





*Team composition described includes both paid and unpaid collaborators.*

### **Improving the Health of the Great Lakes through Profitable Low Overhead Dairy Grazing (\$1,560,000)**

This project will demonstrate how low-overhead dairy grazing could revitalize the dairy sector by offering a scalable solution for farmers, the environment, and Great Lakes communities. Low-overhead dairy grazing (LODG) is an approach to dairy farming that keeps perennial pasture on the landscape without tillage and with minimal synthetic inputs, reducing sediment and nutrient loss from land and improving water quality.

The US dairy industry is a significant contributor to phosphorus pollution in the Great Lakes basin. At the same time, small and medium-sized dairy farms in the Great Lakes basin face unprecedented economic pressure and often are pushed to exit the industry. Due to these challenging economics, there is great potential in the dairy industry for innovations that increase profitability and reduce nutrient runoff. LODG is not only an economical option but also has significantly less environmental impact.

The team will design and pilot a hub-based model that will more easily provide a scalable and competitive solution for dairy farms transitioning to regenerative LODG. Hubs will serve as central entities that manage common needs across a group of dairy farms including training, human resources, purchasing, research, and supply chain logistics.

#### **Team Composition:**

Winrock International (Fiscal Agent)  
Compeer Financial  
Michigan State University  
Dairy Grazing Apprenticeship  
Food System 6  
Michigan Agricultural Advancement  
Michigan Food and Farming Systems  
University of Wisconsin – Madison  
Wisconsin Office of Rural Prosperity  
Wisconsin State Innovation Exchange

### **Expand Disadvantaged Communities' Access to State Revolving Funds (\$1,650,000)**

This team will launch a predevelopment loan fund (with \$1 million of initial financing) that supports disadvantaged communities that typically don't apply to their state's clean water revolving fund (SRF) because the process is expensive, complex, and requires upfront investments in planning. Sharply increased funding to SRFs from the 2021 Infrastructure Investment and Jobs Act (IIJA) makes money available to these communities to improve their water systems. However, smaller communities with fewer financial resources are unable to pay for the technical assistance needed to create applications for SRF programs and may not be able to access these funds.

This project will identify and engage disadvantaged communities and provide them with loans to pay for the required technical assistance support. These loans will be repaid from the SRF grant or loan. The team expects to make 20 to 30 loans from the fund's initial capitalization, delivering up to \$100 million in SRF support to needy



communities. The program's success will attract additional capital and support its expansion to all Great Lakes states.

**Team Composition:**

Environmental Policy Innovation Center (Fiscal Agent)  
Sand County Foundation  
Greenprint Partners  
Clean Wisconsin  
Moonshot Missions  
Bowman Environmental Consulting  
Illinois Facilities Fund

**RISC Network Support (\$50,000)**

This money is intended to aid in transitioning the RISC Network to the Green Infrastructure Leadership Exchange.

**Team Composition:**

Green Infrastructure Leadership Exchange  
Global Philanthropy Partnership (Fiscal Agent)

**Commercialize an Innovative Phosphorous Capture Product (\$105,000)**

This team will develop a business plan to commercialize an innovative agricultural phosphorus filtering product (the CAPTURE™ system). This product removes dissolved phosphorus from runoff in agricultural tile drains. It is designed to exceed the USDA's 40% phosphorus reduction target; 2022 pilot testing in Wisconsin has demonstrated over 85% phosphorus capture. The product was developed and successfully tested with Fund support, and the Fund has filed a patent application for it.

Kieser & Associates is working with team members Cimbria Consulting and Global Water Advisors, and these teams will clarify the market size, establish revenue projections, and develop the value proposition for potential investors and customers. They will also expand on the operating side of the business, including how they plan to manufacture, distribute, install, and service the CAPTURE™ systems.

The team will develop a range of options for future business development. This could include the creation of a new company to manufacture, sell and distribute the system. Alternatively, investors or industry partners could license the product from the Fund.

**Team Composition:**

Kieser & Associates, LLC (Fiscal Agent)  
Global Water Advisors, Inc.  
Cimbria Consulting  
Delta Institute



### **Performance-Based Financing Models for Sustainable Agriculture in the Great Lakes Basin (\$600,000)**

This team will create a new class of agriculture investment products for institutional ESG investors that are measured by the carbon footprint of fertilizer used in crop production. These investment products will have preferred (lower) interest rates based on their performance in delivering environmental benefits by reducing nutrients applied to the land or lost to the water system.

This project is part of a multi-phase strategy that reduces nutrient use in the region by expressing them as reduced carbon emissions. This aligns improved nutrient management on farms with ESG investors' climate change strategies. Corporations and institutional investors can meet their sustainability goals by passing performance requirements for nutrient management through their value chains.

This team will explore which customers value reframing nutrient use and loss as their carbon footprint equivalents. Significantly, this testing will also help the team understand how these products would result in farmers and landowners implementing conservation practices. This work will set the stage for field testing -in a later phase -the financial products the team has developed.

#### **Team Composition:**

University of Michigan (Fiscal Agent)  
Croatan Institute  
Limno-Tech, Inc.  
Farmers Business Network  
Cornell University

### **Empower Land Conservancies to Prioritize Nutrient Pollution (\$1,500,000)**

This team will create a new regional enterprise co-managed by land trusts that will retire and restore problematic agricultural parcels; and develop a permanent funding stream that pays for it. Farmland that contributes to nutrient pollution will be restored to native perennial vegetation in the Maumee, St.Louis, and Saginaw River watersheds. This new enterprise will be a hub for expansion across the basin and a model for other land trusts.

The team will create this new enterprise by pursuing three workstreams.

- Develop a land trust community of practice with the following five land trusts who will be critical, on-the-ground partners: Minnesota Land Trust, Wisconsin Landmark Conservancy, Saginaw Basin Land Conservancy, Little Forks Conservancy, and Black Swamp Conservancy.
- Create a technical advisory committee – including the five land trust partners – to develop an ensemble model to prioritize cropland with the highest phosphorus reduction potential.
- Generate a steady source of flexible funding for the land trusts that can be used for land purchase, outreach, restoration, and land stewardship to improve Great Lakes water quality.

The project will provide value to the Great Lakes community through the new community of practice, the land prioritization modeling results, and the increased capacity within the land trusts created by the project.

#### **Team Composition:**

Freshwater Society (Fiscal Agent)



Minnesota Land Trust  
Wisconsin Landmark Conservancy  
Saginaw Basin Land Conservancy  
Little Forks Conservancy  
Black Swamp Conservancy  
Conservation Fund  
Bolin Agency  
Ulrich Consulting

### **Increase Under-Resourced Municipalities' Access to Green Infrastructure (\$1,400,000)**

Decades of underinvestment in wastewater and stormwater infrastructure have degraded Great Lakes water quality and increased ecosystem and community vulnerability to the impacts of severe flooding. Many large municipalities can pay for these services or have experts on staff. However, in small to mid-sized cities, the work is often done only as staff time and budgets allow. As a result, planning and implementing green infrastructure projects remains out of reach for many municipalities that could benefit from it.

This team will improve Great Lakes water quality by reducing stormwater runoff and flooding in smaller communities. They will establish an integrated design, build, finance, and maintain service for green infrastructure that will primarily focus on disadvantaged and under-resourced municipalities that don't implement green infrastructure projects independently. The team will work with at least ten municipalities, as well as community members and community-based organizations to design the service program so that it is an integrated approach to planning, implementing, maintaining, and monitoring green infrastructure projects across many municipalities. The team will assess alternative funding sources for these projects, including federal and state financing programs and philanthropy. They will also explore the potential of a new low-cost micro-bond product explicitly designed for small communities to implement and maintain green infrastructure. The team will pilot the program in Lansing, MI, and Manitowoc, WI.

#### **Team Composition:**

Delta Institute (Fiscal Agent)  
Stantec  
Regiment Securities  
389nm  
City of Lansing, MI  
City of Manitowoc, WI

### **Permanent Destruction of PFAS in Landfill Leachates and Wastewater (\$690,000)**

The project team is developing an innovative approach to destroying PFAS in the Great Lakes region, and they anticipate their work will raise the bar for PFAS destruction technology. Its success will activate a marketplace for technologies that destroy PFAS, permanently removing these dangerous compounds from the Great Lakes ecosystem. Current treatments remove PFAS from water by filtration, adsorption, and reverse osmosis; however, these methods produce solid waste and wastewater with highly-concentrated PFAS that are often stored on industrial sites or in landfills from where they can re-enter the environment.



The team, led by Michigan State University and Fraunhofer USA, will test, validate, and scale their technology, a magnetically enhanced arc plasma (MEAP), which has been shown to permanently destroy PFAS, removing the risk that these compounds will re-contaminate Great Lakes water. Their work has shown this process to be more effective, faster, and less energy-intensive than other emerging PFAS destruction technologies. The project team, which includes industry, academic, municipal, and not-for-profit participants, will evaluate MEAP technology’s performance in treating landfill leachates and wastewater –two significant sources of PFAS in the environment – and create a foundation for its widespread adoption after Fund support ends.

**Team Composition:**

Michigan State University (Fiscal Agent)  
Fraunhofer USA Center Midwest CMW  
City of Grand Rapids, MI  
Granger Waste Services  
Ampres, Inc.

**Forging New Pathways to Improved Water Quality and Climate Resiliency in the Great Lakes (\$1,215,000)**

The 2021 Bipartisan Infrastructure Law (BIL) has created a unique opportunity to reinvest in the region’s water infrastructure through state revolving fund (SRF) loans and grants over the next five years. Many water utilities in the Great Lakes basin need significant capital reinvestment, especially those serving smaller and disadvantaged communities, which often lack technical, managerial, and financial resources. Historically, SRF support has been used to replace aging water infrastructure with the same conventional infrastructure. While this approach may improve the performance of some systems, it is unlikely to reduce the burden on ratepayers, which is often unbearably high for small and disadvantaged communities. This is a cycle in need of disruption, and we expect the project team’s efforts to change the trajectories of these communities.

The project team—Moonshot Missions, technical experts, and the partner utilities—will spearhead this disruption by developing “Moonshot Modules” that incorporate natural infrastructure and resiliency solutions while also standardizing, simplifying, and reducing the cost of improvements relevant to many utilities. They will develop, pilot, and then package these Modules at six utilities that represent the diversity of Great Lakes systems and engage communities across the region to expand their impact.

The project team will expand to include twenty-five more utilities by the end of the project’s term and build a community of practice that will carry these practices across the region.

**Team Composition:**

Moonshot Missions (Fiscal Agent)  
HydroDigital, LLC  
SJS Consulting  
City of Akron, OH  
City of Toledo, OH  
City of Gary, IN  
City of Lima, OH  
City of Defiance, OH



### **Building Agroforestry to Improve Water Quality (\$1,200,000)**

Awarded in 2021, this project will drive the growth of agroforestry across the Great Lakes basin. Agroforestry – incorporating trees into row crop farmland – has been shown to improve performance of riparian buffers around farmland, and alley cropping (the practice of interspersing rows of tree crops among common row crops) substantially reduces nutrient loss from the land. However, significant challenges exist regarding the widespread adoption of agroforestry throughout the Great Lakes basin, including the inability to drive market demand for tree crops, like hazelnuts, without a reliable supply source, and vice versa. Further, an unreliable market creates a dearth of capable technical support for farmers to incorporate agroforestry on their land. This project will develop and deploy the support systems needed to accelerate the adoption of agroforestry across the region.

The project team will (1) establish a set of pilot farms in northeast Wisconsin implementing agroforestry, (2) engage a community of farmers and customers throughout the basin, and (3) develop the tools they need to accelerate the growth of agroforestry across the region. With demonstration sites as hubs, the project team's farmers and trained technical service providers will create practitioners' guides to agroforestry's technical and financial aspects. These guides, engagement by farmers across the region, and the feedback from initial pilot clusters will lead to a second set of agroforestry pilots in western Michigan in the latter stages of the project and detailed plans for four more in the following years.

#### **Team Composition:**

Savanna Institute (Fiscal Agent)  
Farm Commons  
Chiwara Permaculture Research and Education L3C / We are the Forest  
USDA National Agroforestry Center  
Iroquois Valley Farmland REIT  
Newaygo Conservation District  
Michigan Alliance for Environmental and Outdoor Education  
Country Financial  
Artisan Grain Collaborative  
Oceana Conservation District  
Croatan Institute  
McFarlane Manufacturing Company Incorporated  
Ozaukee Washington Land Trust  
Riveredge Nature Center  
River Alliance of Wisconsin

### **Transforming Land Stewardship Through a Farm Navigator Network (\$1,219,000)**

Awarded in 2021, this project will increase the adoption of conservation practices and regenerative farming systems across the Great Lakes basin by creating the Great Lakes Farm Navigator Network, a new network of “navigators” and a supporting training program that will assist senior farmers and landowners to transition their land to new owners and operators who have a commitment to conservation.

Nearly one in three farmers in the Great Lakes states are over 65 years old, and the average age of landowners renting land to farmers is 66. Many of these farmers and landowners are interested in establishing and maintaining conservation practices on their land. Still, they haven't created farm transfer plans that incorporate



conservation practices. The Network will advise, train and support senior farmers and landowners to implement conservation options in their farm transfer plans and support beginning farmers to secure land access with a commitment to conservation. They will focus on: Women farmers/landowners – to develop and implement conservation or farm transfer plans. Senior farmers/landowners – to implement conservation options, such as agricultural conservation easements within their farm transfer planning. Beginning farmers – to secure land access with an articulated land ethic or commitment to conservation, tied to their personal and business goals.

The team will recruit and train navigators from regions where agriculture’s impact is the highest in the basin: Michigan, New York, Ohio, and Wisconsin. Navigators will come from multiple sectors, including University Extension, agricultural organizations, retailers, land trusts, and soil and water conservation districts, and they will undergo training in estate planning, contracting, trust instruments, and corporate and other sustainability initiatives. This will be a first-of-its-kind holistic program to serve all three diverse audiences of women farmers/landowners, senior farmers/landowners, and beginning farmers to achieve multiple land-related goals. If successful, the team expects to reduce phosphorus contribution to the Lakes by more than 400 metric tons per year within ten years.

**Team Composition:**

- American Farmland Trust (Fiscal Agent)
- Michigan State University Kellogg Biological Station
- Michigan State University Extension
- Central State University Extension
- Renewing the Countryside
- Ohio Federation of Soil and Water Conservation Districts
- Northwest State Community College
- Ohio State University Extension
- Cornell University

**Nutrient Reduction through Real-time Optimization and Control (\$905,000)**

Awarded in 2019, this is a foundational proof-of-concept project to develop a real-time monitoring and control system for reducing phosphorus, nitrogen, and sediment discharged by agricultural drains. The project team will deploy an array of sensors on farmland to continuously measure critical parameters such as precipitation, water levels, and flow, water quality, and soil moisture. They will build machine learning models using sensor and weather data to predict field drainage behavior on a variety of time scales.

**Team Composition:**

- Xylem, Inc. (Fiscal Agent)
- University of Notre Dame
- Van Buren Conservation District



### **Healthy Ports: Port Bay Monitoring (\$100,000)**

In 2018, the Board awarded a team led by the University of Buffalo \$1,590,000 to pilot new passive sediment management strategies at river mouths to create new wetland and fish habitat, improve water quality, support local economies, and reduce the cost and environmental impacts from dredging. To further support this project, under the same resolution, the Board voted unanimously to make up to \$100,000 available to support expanded monitoring and data analysis, so that the project team can assess improvements to the physical, chemical and biological integrity of the Great Lakes ecosystem.

This is a three-year project to monitor the Healthy Port Futures Port Bay, New York site, that will provide proof-of-concept for the work the team has done and generate novel and valuable data that will inform other shoreline communities. The Port Bay project depends on adaptive management, so monitoring is essential to its long-term viability. The project, which consists of annual construction of a cobble-feeding system of dredged material, provides both beach nourishment and habitat creation. It is part of a much larger regional sedimentary system; thus, information from this project can be quickly used to support projects elsewhere. The team will prepare an integrated assessment of impact from all of its pilot projects at the end of the three years.

#### **Team Composition:**

University of Pennsylvania (Fiscal Agent)

### **Advancing Early Detection of Ballast-mediated Invaders in the Great Lakes (\$648,000)**

Awarded in 2020, and developed from a project design award, this project will make early detection of aquatic invasive species (AIS) both more economical and practical and significantly improve the prospects for prevention and containment of AIS in the Great Lakes. Existing detection methods for target invasive organisms are time-consuming and expensive. Consequently, new colonies of AIS are often only detected after they are well-established. The project team will develop “smoke detectors” for AIS – new protocols for sampling and analysis that are inexpensive, rapid, and easy to use. They will use methods that detect the genetic material of target organisms in Great Lakes harbors and determine whether its presence indicates a reproducing colony of that organism. The team will “package” the products of their work so state resource managers and others that lead AIS management activities can quickly adopt them.

#### **Team Composition:**

Pennsylvania State University – Erie (Fiscal Agent)  
Governors State University  
Pennsylvania Sea Grant  
Tom Ridge Environmental Center Foundation  
US Environmental Protection Agency  
US Naval Research Laboratory  
American Great Lakes Ports Association  
Alliance for the Great Lakes  
Pennsylvania Department of Environmental Protection  
Great Lakes Commission  
Central Michigan University  
NOAA Great Lakes Environmental Research Laboratory





### **Transition Financing for Regenerative Agriculture Systems (\$1,187,000)**

Awarded in 2020, this project will expand and accelerate the adoption of regenerative agriculture practices across the Great Lakes basin by designing and developing transition loan products and supporting services that will facilitate farmers' transitions from conventional agriculture to regenerative agriculture. Regenerative agriculture systems that minimize soil disturbance, maximize crop diversity, keep the soil covered, maintain root structure, and integrate livestock have been shown to reduce sediment and nutrient runoff from farms. However, a variety of obstacles exist to adopting these practices that require farmers to face new financial uncertainty, obtain new knowledge, invest more time, and procure new equipment.

The project team, led by Cornell University, will engage agricultural lenders, farmers, landowners, and other stakeholders across the Great Lakes basin. The transition loan products created will be standardized, reliably and simply underwritten, and competitive with other agriculture lending products. The work will initially take place in the Lake Ontario watershed in New York state, which offers a cross-section of farm types including crops, livestock, vineyards, and vegetables. This will be valuable in developing alternative financial solutions that are attractive to farmers with different types of operations across the Great Lakes basin.

#### **Team Composition:**

Cornell University (Fiscal Agent)

Evidn

Cornell Atkinson Center for Sustainability

### **Harnessing Automated Demand Response to Reduce Great Lakes Mercury Emissions (\$1,006,000)**

Awarded in 2018, this project is a first-of-its-kind effort to reduce mercury emissions from coal-powered plants by combining two unrelated programs; electric utility Demand Response and Automated Emissions Response.

Consumer demand for more choice around energy production, and specifically demand for choosing clean energy, sits at the heart of this work. Demand response programs provide financial incentives from the utility to the users to conserve energy during high demand times (e.g., a hot summer day) to reduce the strain on the electric grid. They try to reconcile too much demand with not enough supply. These programs have the infrastructure in place to connect with many electricity customers, but interest and participation are low.

Alternatively, Automated Emissions Response (AER) is an innovative technology that determines when the electric grid is supplied by cleaner sources of energy and allows customers the ability to choose clean energy for their electricity needs. For the first time, consumers can now have control over their emissions reductions with this popular program without compromise to cost, comfort or functionality. The AER software will be an add-on feature of familiar demand response programs (which cut consumption during a handful of peak energy demand events) and will optimize your emissions reductions the rest of the year. The impacts from this project are optimistic based on research showing a 3x increase in participants when AER is offered as part of a demand response program. More program participants and increased demand for mercury emissions reductions will incentivize mercury-emitting power plants to run or install mercury emissions reduction technology which cuts emissions by at least 90%.

The team will work closely with electric utilities and demand response recruiters to demonstrate that more customers will be drawn to demand response programs with the addition of AER. The project will run two distinct



pilots: one for residential electricity customers, the other for commercial electricity customers. Both pilots will involve software engineering; pilot implementation; and scaling efforts. Four utilities in the region; ComEd, Xcel Energy, DTE Energy, and Consumers Energy, have all agreed to participate in the project.

**Team Composition:**

WattTime (Fiscal Agent)  
Rocky Mountain Institute  
OhmConnect  
Brainbox AI  
UC Berkely Center for the Built Environment

**Improving Shoreline Resilience and Coastal Adaptation through Community Action (\$150,000)**

This design effort will revolutionize coastal management across the Great Lakes region by introducing a new way of thinking about shoreline resilience. Great Lakes coastal communities now have an opportunity to reshape how their coastlines are built and managed for the future. The team will demonstrate how shorter-term adaptive management -guided by customized remote sensing technologies, tools, and data collection – can better prepare coastal communities for the escalating impacts of climate change. Through this work, communities will be able to develop, construct, and maintain more ecologically integrated and resilient coastlines at a lower cost.

During this design phase, the team will identify potential coastal community partners, focusing on smaller communities that have demonstrated a need for more cost-effective, resilient coastal management and a willingness to participate in more innovative experimental practices. The feedback from the coastal communities will enable the team to develop customized remote sensing technologies and data mapping tools to guide new adaptive management practices as well as meet the unique needs of communities.

**Team Composition:**

Proof Projects (Fiscal Agent)  
AltoMaxx

**Advancing Stormwater Management at Marinas in the Great Lakes (\$839,000)**

Awarded in 2018, this team will improve nearshore water quality and habitat quality in the Great Lakes by advancing better stormwater management at Great Lakes marinas. Great Lakes marinas and the boating industry depend on clean waters and a healthy coastal environment for the success of their business. Yet, they operate on the nearshore of the Great Lakes and their tributaries, where concentrated human activity can significantly impact flora and fauna. Furthermore, the operation of marinas can cause various sources of pollution, such as sediments, pesticides, oil and road dirt, heavy metals, and nutrients to runoff into nearshore waters during storm events.

To improve stormwater management at Great Lakes marinas, the team will develop a marina-specific stormwater management decision support tool and pilot the installation of green infrastructure practices in three private marinas in Michigan, Ohio and Wisconsin. The team will develop and implement monitoring and maintenance plans at each marina, as well as develop training curricula. They will host a technical training workshop to scale up green infrastructure practices across the nearly 1,000 marinas in the Great Lakes watershed. The team will



leverage its multi-state Clean Marina program (there are currently 200 marinas certified in the region) to drive adoption of the practices identified by the tool and demonstrated in the pilots.

#### **Team Composition:**

Michigan Sea Grant (Fiscal Agent)  
Michigan Clean Marina Program  
Ohio Sea Grant  
Erie Conservation District  
Ohio Department of Natural Resources  
Wisconsin Sea Grant  
Wisconsin Coastal Management  
Ohio State University

#### **Smart Management of Microplastic Pollution in the Great Lakes (\$929,000)**

Awarded in 2018, this project will empower a new set of regional leaders focused on reducing the amount of microplastics that enter the Great Lakes each year. The team will work with municipal leaders and local groups to pilot a plastic reduction campaign and mitigation initiative in Williamston and Pontiac, MI. To support this campaign, the team will design and build a first-of-its-kind, portable optical sensor that they will use as a monitoring tool to evaluate the performance of the plastic reduction campaign.

The portable technology will integrate optical sensors with machine learning and edge computing to enable a low-cost, real-time quantification of plastic particles in water. Use of this technology will offer a dramatic improvement over the current monitoring techniques which are laborious and consist of manual counting of plastic particles under a microscope. The optical sensor will test the effectiveness of two very different mitigation strategies: one strategy will seek to reduce plastic fibers coming off clothing in the wash; the second will seek to reduce large plastics entering the stormwater system by installing green infrastructure to capture trash during large rain events.

By developing a microplastics mitigation toolbox (tested mitigation strategies supported by new sensor technology) this team is developing solutions that can be adopted by communities throughout the basin to reduce microplastics. New approaches are needed now, as most of the microplastics work being done in the region has been focused on trying to determine the extent of the problem or reducing litter, not large-scale solutions.

#### **Team Composition:**

Wayne State University (Fiscal Agent)  
Ingham Conservation District  
City of Williamston  
Tri County Regional Planning Commission  
Michigan Association of Conservation Districts  
Clinton River Watershed Council  
OHM Environmental Advisors  
Nymbus Systems Corporation  
Great Lakes Water Authority  
Sierra Club Michigan Chapter  
Great Lakes Environmental Research Laboratory, NOAA



Great Lakes  
Protection Fund

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The Fund's mission is to identify, demonstrate, and promote regional action to enhance the health of the Great Lakes Ecosystem.

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