

# Great Lakes Protection Fund

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2012 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 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 2012, the Fund has made a total of 248 grants and program-related investments, representing a \$66.1 million commitment to protecting and restoring the ecological health of the Great Lakes ecosystem. Additionally, the Fund has paid \$43.8 million directly to its seven member states to support their Great Lakes priorities. Over the course of the past 23 years, the Fund has exceeded the states' initial investment of \$81 million with an overall commitment of \$110 million to benefit the Great Lakes ecosystem.

## 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 2012

In the past year, the Fund generated over \$4.6 million in investment income from the endowment. The Fund returned over \$1 million to its member states to support their Great Lakes priorities. The Fund paid \$2 million to support regional projects. Audited financial statements can be found in Appendix 1.

The Fund entered 2012 with 24 active projects focused on efforts to prevent biological pollution, restore natural flow regimes, engage market forces, and provide leadership for ecosystem restoration in the Great Lakes Basin. These projects represented an investment by the Fund of \$12.6 million.

Over the course of the year, work was completed on ten of these projects. These projects are identified in Appendix 2. All projects generated new and useful 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 2012, the Fund developed and supported seven new projects, maintaining the portfolio of active, supported work at over \$13.2 million. The new projects for 2012 include an effort to create an automated, shipboard, rapid-testing system that will be able report, in real time, the presence of any live organisms in ballast water following treatment. If successful, this effort will eliminate one of the greatest challenges facing invasive species control - the ability to capture sufficient volumes of water to properly assess the efficacy of ballast treatment methods and compliance with ballast standards. Another team is working to establish a neighborhood-based network of small-parcel green infrastructure projects on vacant land in three Great Lakes cities to determine the potential for urban neighborhoods with an abundance of vacant land to serve as a green infrastructure network. These projects will help to achieve the Governors' objective of controlling pollution from diffuse sources into water, land and air and stopping the introduction and spread of non-native aquatic invasive species. The complete portfolio of supported work, including new projects awarded in 2012, can be found in Appendix 3.

## Evaluation of the Corporation's Performance

The Fund accomplished its objectives in 2012. Regional projects were designed and funded to address key gubernatorial priorities—especially the sustainable use of Great Lakes water and stopping invasive species. Ongoing regional efforts were monitored, adjusted when required, and closed out when appropriate. Despite difficult economic conditions, significant funds were paid directly to the member states to support their individual priorities.

## 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 research agenda in support of these priorities. In the near term, the Fund is likely to focus on continued development of significant, new technological tools to help protect and restore the resources of the Great Lakes. These include tools that address the global emphasis on water risk and security including opportunities to design, test and monitor response actions as well as addressing solutions to the proliferation of genetically modified organisms.

## Actions Taken by the Directors in Response to Public Comments

The Directors have sought, but not received, public comments on this report.



# Members of the Corporation in 2012

## Governor of Illinois

Pat Quinn

## Governor of Michigan

Rick Snyder

## Governor of Minnesota

Mark Dayton

## Governor of New York

Andrew Cuomo

## Governor of Ohio

John Kasich

## Governor of Pennsylvania

Tom Corbett

## Governor of Wisconsin

Scott Walker



## Board of Directors in 2012

Richard Baird (Bath, MI)

Patricia Birkholz (Saugatuck, MI)

Lori Boughton (Meadville, PA)

Kathleen Brown (Chicago, IL)

Matthew Driscoll (Syracuse, NY)

Frederick Dudderar (Duluth, MN)

Michael Elmendorf (Albany, NY)

Peter Gove (St. Paul, MN)

Edwin Hammett (Pemberville, OH)

Richard Hylant (Ottawa Hills, OH)

Kenneth Johnson (Madison, WI)

Jeffrey Logan (Mechanicsburg, PA)

Richard Meeusen (Pewaukee, WI)

Craig Shaver (Deep Haven, MN)

Debra Shore (Skokie, IL)

Maureen Smyth (Traverse City, MI)



# Great Lakes Protection Fund Staff

Shannon Donley – Associate Program Officer

Amy Elledge – Communications Administrator

Robert Eder – Director, Finance and Administration

Mariela Lawrence – Office Administrator

Janis Post – Office Manager

David Rankin – Program Director

Russell Van Herik – Executive Director



# Appendix 1

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## 2012 Audited Financial Statements



## **Great Lakes Protection Fund**

Financial Report  
December 31, 2012





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McGladrey LLP



## Independent Auditor's Report

To the Board of Directors  
Great Lakes Protection Fund  
Chicago, Illinois

### Report on the Financial Statements

We have audited the accompanying financial statements of Great Lakes Protection Fund (the Fund) which comprise the statement of financial position as of December 31, 2012 and 2011, and the related statements of activities, and cash flows for the years then ended and the related notes to the financial statements.

### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes 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.

### Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Great Lakes Protection Fund as of December 31, 2012 and 2011, and the results of its activities and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

*McGladrey LLP*

Chicago, Illinois  
March 13, 2013



## Great Lakes Protection Fund

### Statements of Financial Position December 31, 2012 and 2011

	2012	2011
<b>Assets</b>		
Cash and cash equivalents	\$ 8,620,254	\$ 11,009,175
Investments	107,941,168	94,507,508
Accrued interest	106,068	97,826
Other assets	22,723	48,552
Furniture, equipment and leasehold improvements, net of accumulated depreciation of \$264,658 and \$261,388 in 2012 and 2011, respectively	4,452	7,203
	<b>\$ 116,694,665</b>	<b>\$ 105,670,264</b>
<b>Liabilities and Net Assets</b>		
<b>Liabilities</b>		
Grant commitments	\$ 172,258	\$ -
Member state shares payable	1,005,865	450,467
Accrued expenses	231,347	215,561
Accrued pension contribution	5,802	4,818
Accrued postretirement health benefits	307,771	233,660
	<b>1,723,043</b>	<b>904,506</b>
<b>Net Assets</b>		
Unrestricted	5,064,641	5,031,836
Temporarily restricted	28,906,971	18,733,912
Permanently restricted	81,000,010	81,000,010
	<b>114,971,622</b>	<b>104,765,758</b>
	<b>\$ 116,694,665</b>	<b>\$ 105,670,264</b>

See Notes to Financial Statements.



Great Lakes Protection Fund

Statements of Activities  
Years Ended December 31, 2012 and 2011

	2012				2011			
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue:								
Investment income	\$ 32,805	\$ 4,591,221	\$ -	\$ 4,624,026	\$ 35,021	\$ 2,805,142	\$ -	\$ 2,840,163
Miscellaneous revenue	-	-	-	-	-	6,205	-	6,205
Net assets released from restrictions	4,839,886	(4,839,886)	-	-	4,373,320	(4,373,320)	-	-
	4,872,691	(248,665)	-	4,624,026	4,408,341	(1,561,973)	-	2,846,368
Expenses:								
Program grants	2,217,690	-	-	2,217,690	2,424,341	-	-	2,424,341
Other program activities	701,389	-	-	701,389	620,682	-	-	620,682
Member state shares	1,005,866	-	-	1,005,866	450,466	-	-	450,466
Investment management and advisory fees	154,336	-	-	154,336	152,550	-	-	152,550
Administrative expenses	750,704	-	-	750,704	721,730	-	-	721,730
	4,829,985	-	-	4,829,985	4,369,769	-	-	4,369,769
Increase (decrease) in net assets before other items	42,706	(248,665)	-	(205,959)	38,572	(1,561,973)	-	(1,523,401)
Change in unrealized gains and losses relating to assets still held at end of year	-	10,421,724	-	10,421,724	-	(5,642,957)	-	(5,642,957)
Change in other postretirement benefit obligation	(9,901)	-	-	(9,901)	(3,551)	-	-	(3,551)
Transfer of amounts designated by board for operating reserve	-	-	-	-	1,228,531	(1,228,531)	-	-
Increase (decrease) in net assets	32,805	10,173,059	-	10,205,864	1,263,552	(6,433,461)	-	(7,169,909)
Net assets:								
Beginning of year	5,031,836	18,733,912	81,000,010	104,765,758	3,768,284	27,167,373	81,000,010	111,935,667
End of year	\$ 5,064,641	\$ 28,906,971	\$ 81,000,010	\$ 114,971,622	\$ 5,031,836	\$ 18,733,912	\$ 81,000,010	\$ 104,765,758

See Notes to Financial Statements.



## Great Lakes Protection Fund

### Statements of Cash Flows Years Ended December 31, 2012 and 2011

	2012	2011
Cash Flows from Operating Activities		
Increase (decrease) in net assets	\$ 10,205,864	\$ (7,169,909)
Depreciation and amortization	3,270	5,766
Realized gain on sales of investments	(1,389,180)	(300,704)
Change in unrealized (gain) loss on investments	(10,421,724)	5,642,957
Changes in:		
Accrued interest	(8,242)	141,279
Other assets	25,829	(27,174)
Grant commitments	172,258	(110,299)
Member state shares payable	555,398	(630,697)
Accrued expenses	15,786	(49,110)
Accrued pension contribution	984	694
Accrued postretirement health benefits	74,111	50,141
<b>Net cash used in operating activities</b>	<b>(765,646)</b>	<b>(2,447,056)</b>
Cash Flows from Investing Activities		
Purchases of investments	(36,184,035)	(12,014,166)
Proceeds from sales of investments	34,561,279	12,772,817
Purchases of furniture, equipment and leasehold improvements	(519)	(4,124)
<b>Net cash (used in) provided by investing activities</b>	<b>(1,623,275)</b>	<b>754,527</b>
<b>Decrease in cash and cash equivalents</b>	<b>(2,388,921)</b>	<b>(1,692,529)</b>
Cash and cash equivalents:		
Beginning of year	11,009,175	12,701,704
End of year	<b>\$ 8,620,254</b>	<b>\$ 11,009,175</b>

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 goals of the Great Lakes Toxic Substances Control Agreement and the binational Great Lakes Water Quality Agreement, so as to advance the health of the ecosystem of the Great Lakes Basin.

**Basis of accounting:** Under accounting principles generally accepted in the United States of America, not-for-profit organizations report net assets in each of the three classes: permanently restricted, temporarily restricted, or unrestricted based on the existence or absence of donor-imposed restrictions.

**Cash and cash equivalents:** For purposes of the statements of cash flows, the Fund considers all highly liquid debt instruments purchased with a maturity of three months or less to be cash equivalents.

The Fund maintains cash accounts at financial institutions, which at times, may exceed \$250,000. Certain non-interest bearing accounts were insured by the Federal Deposit Insurance Corporation (FDIC) without limit through December 31, 2012. A significant portion of cash equivalents is invested in interest bearing money market accounts. Such amounts are insured by the 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 all other investments are computed using the first-in, first-out method.

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, software and leasehold improvements:** Furniture, equipment, software 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.

**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 contingencies have been met.

**Use of estimates:** The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America 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.

**Postretirement benefits:** The Fund provides certain health care benefits for its retired employees that meet eligibility requirements. The Fund's share of the estimated costs that will be paid after retirement is generally being accrued by charges to expense over the employees' active service periods to the dates they are fully eligible for benefits.



## Great Lakes Protection Fund

### Notes to Financial Statements

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

**Income taxes:** The Fund is exempt from income taxes under Section 115(1) of the Internal Revenue Code 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 percent likelihood of being realized upon ultimate settlement. The guidance on accounting for uncertainty in income taxes also addresses de-recognition, classification, interest and penalties on income taxes, and accounting in interim periods. At December 31, 2012 and 2011, 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 13, 2013, the date the financial statements were available to be issued.

#### Note 2. Investments

Investments consist of the following:

	2012	
	Cost	Market
Common stocks and stock equivalents - domestic equity	\$ 7,609,358	\$ 8,241,943
Mutual funds		
Domestic equity:		
Large cap blend	18,242,466	24,119,718
Large cap growth	5,000,000	4,980,994
Small cap value	4,228,518	3,400,484
International equity:		
International value	13,942,112	16,548,651
International growth	18,059,990	18,188,158
Fixed income:		
Total return	26,023,931	27,415,983
Short-term high yield	5,045,237	5,045,237
	<u>\$ 98,151,612</u>	<u>\$ 107,941,168</u>





## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 2. Investments (Continued)

	2011	
	Cost	Market
Common stocks and stock equivalents - global equity	\$ 12,721,008	\$ 11,541,429
Mutual funds		
Domestic equity:		
Large cap blend	23,695,614	27,682,689
Small cap value	7,672,114	5,836,105
International equity:		
International value	11,692,112	12,276,734
International growth	14,309,990	11,772,034
Fixed income:		
Total return	20,023,927	20,458,286
Short-term high yield	5,024,885	4,940,231
	<u>\$ 95,139,650</u>	<u>\$ 94,507,508</u>

Gains and losses (realized and unrealized) are reported as follows:

	2012	2011
Interest and dividends	\$ 3,234,846	\$ 2,539,459
Realized gains on securities sold	1,389,180	300,704
Total investment income included in operating revenue	<u>\$ 4,624,026</u>	<u>\$ 2,840,163</u>
Change in unrealized gains relating to assets still held at end of year	<u>\$ 10,421,724</u>	<u>\$ (5,642,957)</u>

#### Note 3. Fair Value Disclosures

The Fund follows accounting guidance related to fair value measurements, which provides a framework for measuring fair value under generally accepted accounting principles. This guidance 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 at the measurement date and sets out a fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). Inputs are broadly defined under this guidance as assumptions market participants would use in pricing an asset or liability. The three levels of the fair value hierarchy under this guidance are described below:

Level 1. Valuations for assets and liabilities traded in active exchange markets, such as the New York Stock Exchange. Level 1 assets primarily include listed equities and mutual 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.





## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 3. 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 highest 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 year ended December 31, 2012, the application or valuation techniques applied to similar assets and liabilities has been consistent. 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, 2012 and 2011, there were no such instances. The following section describes the valuation methodologies used by the Fund for instruments 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 following tables present the Fund's fair value hierarchy for those assets measured at fair value on a recurring basis as of December 31, 2012 and 2011. The Fund does not have financial liabilities that are adjusted to fair value.

	December 31, 2012			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Common stocks and stock equivalents - domestic equity	\$ 8,241,943	\$ -	\$ -	\$ 8,241,943
Mutual funds				
Domestic equity	32,501,196	-	-	32,501,196
International equity	34,736,809	-	-	34,736,809
Fixed income	32,461,220	-	-	32,461,220
Total assets	\$ 107,941,168	\$ -	\$ -	\$ 107,941,168



## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 3. Fair Value Disclosures (Continued)

	December 31, 2011			Total
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Common stocks and stock equivalents - global equity	\$ 11,541,429	\$ -	\$ -	\$ 11,541,429
Mutual funds				
Domestic equity	33,518,794	-	-	33,518,794
International equity	24,048,768	-	-	24,048,768
Fixed income	25,398,517	-	-	25,398,517
Total assets	\$ 94,507,508	\$ -	\$ -	\$ 94,507,508

The carrying amounts of financial instruments, including cash and cash equivalents, receivables, investments, accrued interest receivable, other assets, member state shares payable, and accrued expenses approximate fair value due to the short maturity of these instruments.

#### Note 4. Member State Shares

In accordance with the articles of incorporation, the Fund is required to disburse to the member states one-third of its realized investment 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. Accrued member state shares were, respectively, \$1,005,865 and \$450,467 at December 31, 2012 and December 31, 2011.

#### Note 5. Grants Committed

Grant activity for 2012 and 2011 is as follows:

	Grants Approved	Grants Paid	Grants Committed December 31
2012	\$ 3,551,000	\$ 2,045,432	\$ 172,258
2011	\$ 2,724,000	\$ 2,534,640	\$ -

As of December 31, 2012, total grants approved since the Fund's inception amounted to \$66,166,315 of which \$6,392,587 related to grants for which the contingencies have not been met and, therefore, the grant expenses have not been recognized. Upon satisfaction of the contingencies by the recipients, the Fund will recognize the grant expenses and disburse the remaining payments.



## Great Lakes Protection Fund

### Notes to Financial Statements

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#### Note 6. Net Assets

##### Unrestricted

Unrestricted net assets represent amounts that are not subject to externally-imposed purpose or time restrictions. Certain unrestricted net assets have been designated by the Board of Directors as a Sequestration Fund; representing an estimate of amounts sufficient to provide for commitments and obligations of the Fund. The balance of \$5,064,641 in unrestricted net assets represents the unspent portion of the Sequestration Fund of \$5,000,000 plus accrued interest.

##### Temporarily Restricted

Temporarily restricted net assets are comprised of endowment fund earnings that have not yet been appropriated for expenditure by the Fund.

##### Permanently Restricted

Permanently restricted net assets 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, which were as follows:

Illinois	\$ 15,000,000
Michigan	25,000,000
Minnesota	1,500,000
New York	12,000,000
Ohio	14,000,000
Pennsylvania	1,500,000
Wisconsin	12,000,000
	<u>\$ 81,000,000</u>

There is no due date for the contribution payable by Indiana, which has not yet joined the Fund.

In accordance with its articles of incorporation, the Fund charges interest to states electing to extend the time to make the required contributions. No such interest was charged in 2012 or 2011. No interest is due from the State of Indiana until such time as it elects to join the Fund and the time to make its required contributions is determined.

#### 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 not-for-profit 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 gift as of the gift date of the donor-restricted endowment funds absent explicit donor stipulations to the contrary. As a result of this interpretation, the Fund classifies as permanently restricted net assets (a) the original value of gifts donated to the permanent endowment, (b) the original value of subsequent gifts to the permanent endowment, and (c) accumulations to the permanent endowment made in accordance with the direction of the applicable donor gift 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; and
- 7) The investment policies of the Fund.

The changes in endowment net assets for the Fund were as follows for 2012 and 2011:

	2012		
	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	\$ 18,733,912	\$ 81,000,010	\$ 99,733,922
Investment income	4,591,221	-	4,591,221
Unrealized gains on investments	10,421,724	-	10,421,724
Amounts appropriated for expenditure	(4,839,886)	-	(4,839,886)
Endowment net assets, end of year	\$ 28,906,971	\$ 81,000,010	\$ 109,906,981



## Great Lakes Protection Fund

### Notes to Financial Statements

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

	2011		
	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	\$ 27,167,373	\$ 81,000,010	\$ 108,167,383
Transfer of amounts designated by Board for operating reserves	(1,228,531)	-	(1,228,531)
Investment income	2,805,142	-	2,805,142
Miscellaneous revenue	6,205	-	6,205
Unrealized losses on investments	(5,642,957)	-	(5,642,957)
Amounts appropriated for expenditure	(4,373,320)	-	(4,373,320)
Endowment net assets, end of year	\$ 18,733,912	\$ 81,000,010	\$ 99,733,922

*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 7 percent and a real return of 4 percent in excess of the Consumer Price Index. Target nominal return was changed by the Board, from 8 percent to 7 percent, in the revised Investment Policy Statement approved December 9, 2011. 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. Overall target asset allocation for the Fund is as follows:

Asset Class	Target Allocation
Domestic and foreign stocks	60-70%

*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. Commitments

The Fund is obligated under an office lease expiring in December 2019.

Rent expense totaled \$145,036 and \$141,451 for 2012 and 2011, respectively.

Minimum payments required under the lease are as follows:

2013	\$ 133,083
2014	135,594
2015	150,660
2016	153,171
2017	155,682
Thereafter	318,897
	<u>\$ 1,047,087</u>

#### Note 9. Retirement Plan

The Fund maintains a retirement plan under the provisions of Section 401(a) of the Internal Revenue Code applicable to governmental retirement plans. All employees are eligible to participate upon commencement of employment. The Fund makes contributions equal to 10 percent of each employee's compensation and additional contributions at the discretion of the Board of Directors. Employees cannot contribute to the plan. The Fund contributed \$60,929 and \$55,296 to the plan for 2012 and 2011, respectively.

#### Note 10. Deferred Compensation Plan

The Fund maintains a deferred compensation plan under the provisions of Section 457(b) of the Internal Revenue Code applicable to governmental retirement plans. All employees are eligible to participate upon commencement of employment. Participants can elect to participate in the deferred compensation plan. The Fund matches employee contributions up to six percent of salary. The Fund contributed \$35,720 and \$32,754 to the plan for 2012 and 2011, respectively.

#### Note 11. Board-Designated Additional Compensation Plan

The Fund maintains a plan of additional compensation to maintain competitiveness with comparable positions in comparable organizations. Certain employees (Executive Director, Vice President – Program, and Vice President – Finance and Administration) are eligible to participate. The additional compensation is contributed to the 401(a) Retirement Plan. The Fund contributed \$39,000 and \$65,000 to the plan for 2012 and 2011, respectively.

#### Note 12. Postretirement Health Benefits

The Fund maintains a retiree health plan to provide certain health care benefits to retired employees. Employees who retire at age 65 or older with at least 10 cumulative years of service are eligible to participate in the plan.



## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 12. Postretirement Health Benefits (Continued)

The Fund follows the accounting guidance for accounting and disclosure for defined benefit pension and other postretirement plans. The provisions of this guidance require employers to recognize the overfunded or underfunded positions (the difference between the costs funded to date and the benefit obligation) of postretirement plans as an asset or liability in the statement of financial position and to recognize changes in that funded status in changes in unrestricted net assets in the year in which the changes occur.

Change in other postretirement benefit obligation:

	2012	2011
Unrecognized prior service cost	\$ -	\$ -
Amortization of prior service cost	(11,118)	(11,118)
Amortization of net loss	(476)	-
Net loss experienced during the year	21,495	14,669
	<u>\$ 9,901</u>	<u>\$ 3,551</u>

Net periodic benefit cost is recognized in the statement of activities is as follows:

	2012	2011
Service cost	\$ 42,335	\$ 25,195
Interest cost	10,281	10,277
Amortization of unrecognized prior service cost	11,118	11,118
Amortization of net loss	476	-
	<u>\$ 64,210</u>	<u>\$ 46,590</u>

Additional information is as follows:

	2012	2011
Accumulated postretirement benefit obligation, beginning of year	\$ 233,660	\$ 183,519
Service cost	42,335	25,195
Interest cost	10,281	10,277
Actuarial loss	21,495	14,669
Accumulated postretirement benefit obligation, end of year	<u>\$ 307,771</u>	<u>\$ 233,660</u>
Plan assets at fair value, end of year	<u>\$ -</u>	<u>\$ -</u>
Fair value of plan assets	\$ -	\$ -
Accumulated postretirement benefit obligation	(307,771)	(233,660)
Funded status	<u>\$ (307,771)</u>	<u>\$ (233,660)</u>





## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 12. Postretirement Health Benefits (Continued)

The postretirement benefit obligation of \$307,771 and \$233,660 is accrued as a liability in the statement of financial position at December 31, 2012 and 2011, respectively.

The estimated prior service cost for the postretirement benefit plan that will be amortized into net periodic benefit cost during 2013 is \$42,335.

The Fund intends to fund the plan with operating revenue. No contributions were made to the plan in 2012 or 2011.

Weighted average assumptions used in the calculation of the net periodic postretirement benefit cost and the postretirement benefit obligation are as follows:

	2012	2011
Discount rate, beginning of year	4.40%	4.40%
Discount rate, end of year	4.00%	4.40%
Expected return on assets	N/A	N/A
Health care cost trend rate		2012
2013		8.89%
2014		8.11%
2015		7.33%
2016		6.55%
2017		5.78%
2018 and beyond		5.00%
Ultimate trend rate		5.00%
Year of ultimate trend rate		2018

Assumed health care cost trend rates have a significant effect on the amounts reported for the health care plan. A one-percentage point change in assumed health care cost trend rates would have the following effects:

	1% Increase	1% Decrease
Effect on postretirement benefit obligation	\$ 65,378	\$ (52,291)
Effect on service cost and interest cost	\$ 12,138	\$ (9,590)





## Great Lakes Protection Fund

### Notes to Financial Statements

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#### Note 12. Postretirement Health Benefits (Continued)

No benefit payments were made for 2012 or 2011. Estimated future benefit payments are as follows:

	Postretirement Benefits
2013	\$ -
2014	2,087
2015	4,839
2016	5,684
2017	6,491
2018-2022	60,346
	<u>\$ 79,447</u>



# Appendix 2

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## Projects Completed in 2012



## Projects Completed in 2012

### Compact Council Support; Non-regulatory Operations (\$311,802)

This grant allowed the Great Lakes-St. Lawrence River Basin Water Resources Council (Compact Council) and the Great Lakes-St. Lawrence River Water Resources Regional Body (Regional Body) to convene and undertake non-regulatory activities. In addition, the states and provinces, with the assistance of the Council of Great Lakes Governors, Inc., developed a funding plan that will allow the Compact Council and Regional Body to support its own operations, without the continued financial support of outside sources.

Council of Great Lakes Governors

Contact: David Naftzger | 312-407-0177 | [dnaftzger@cglg.org](mailto:dnaftzger@cglg.org)

### Developing and Applying a Portable Real-Time Genetic Probe for Detecting Aquatic Invasive Species in Ships' Ballast (\$805,000)

The goal of the project was to produce a novel genetic detection technology for the “next set” of invasive species in the Great Lakes. The project team, led by experts in the fields of invasive species biology, molecular ecology, and nanotechnology, partnered with Canadian and U.S. agencies to: build six species-specific molecular probes for four potentially invasive species, as well as for zebra and quagga mussels; develop a ship-scale detection platform to be used onboard or in port, and; establish an end-user network to communicate the technology's progress and application. The University of Notre Dame led a talented team that included The Nature Conservancy, USEPA, and partners from the private and public sectors.

The team built the species-specific probes, developed a rapid and accurate genetic-based portable detection platform, and successfully engaged an extensive and high profile group of potential end users. Based on feedback from their advisors, the team also undertook a series of DNA degradation experiments to examine how long DNA stays viable in ballast tanks. The successful detection system – Laser Transmission Spectroscopy (LTS) uses laser based detection capabilities that can make extremely accurate measurements in minutes. The potential of this simpler and more portable platform is greater than earlier platforms – and it provides the opportunity to develop a marketable product sooner.

The team's discoveries on this project, specifically their work on the genetic probe technology and DNA degradation rates have translated to real-world applications. The team was contracted by the USACE to use eDNA technology (derived from the team's work) and apply it to the high-profile Asian carp situation in the Chicago waterway system. As part of this effort, the team trained USACE and USFWS personnel in eDNA methods, and both agencies are now using eDNA. The team is currently collaborating with the USFWS on expanding eDNA applications to many species throughout the Great Lakes.

University of Notre Dame

Contact: David Lodge | 574-631-6094 | [lodge.1@nd.edu](mailto:lodge.1@nd.edu)



### **Eco-Separation of the Chicago Area Waterway System to Prevent Invasion of Asian Carp and Other Species (\$193,000)**

GLPF provided funding to plan and recruit team members for a multi-phased, large-scale study to develop options, and identify associated costs, impacts, and benefits for physically separating the Mississippi River and Great Lakes watersheds. In this first phase – a convening and planning phase - a team led by the Great Lakes Commission and the Great Lakes and St. Lawrence Cities Initiative, convened stakeholders, recruited a high-level executive committee, and identified, then hired, the technical contractors who would, in the later phases, identify and evaluate different scenarios for eco-separation.

The team established an Executive Committee (including Illinois Governor Pat Quinn; Ohio Governor Ted Strickland - to be replaced with Governor John Kasich; Chicago Mayor Richard Daley; and Grand Rapids Mayor George Heartwell) which met several times during Phase I. More than 20 government advisors and stakeholders were interviewed over a two month period to identify issues and concerns associated with the project. A formal Resource Group of public agencies was formed, as was an Advisory Committee – the role of both groups was to provide guidance to the team throughout the duration of the project. The Chicago office of HDR Engineering, Inc. was selected as lead consultant for the technical work.

Phase I was completed on schedule; the larger study was completed in February 2012 and met an aggressive project schedule. The study identified three options to hydrologically separate the Great Lakes from the Mississippi River basin.

Great Lakes Commission

Contact: Tim Eder | 734-971-9135 | [teder@glc.org](mailto:teder@glc.org)

### **Great Lakes Watershed Ecological Sustainability Strategy (\$125,000)**

This team's primary objective was to develop and test (in later phases) a science-based strategy for restoring Great Lakes watersheds by using an innovative model to target the placement and extent of restoration actions that would improve water quantity and quality – this is referred to as the Great Lakes Watershed Ecological Sustainability Strategy or GLWESS.

In this planning phase, the team surveyed and characterized all 120 HUC-8 watersheds in the basin (U.S. and Canada) based on physical condition and “readiness to act” and used these criteria to identify a series of candidate watersheds best suited for future work. The team used a wide suite of metrics to characterize and rank each watershed. To evaluate the physical condition the team looked at: runoff curve number, amount of impervious cover, agricultural land use, consumptive water use, point source discharges, impaired waters, and man-made structures. To evaluate the ‘readiness potential’ the team looked at the presence of a watershed management plan, capacity to implement projects, funding availability, watershed activity level, proportion of watershed in protected areas, and median income of residents. Based on the analysis, approximately twelve watersheds were identified as possible locations for a demonstration project.

Limno-Tech, Inc.

Contact: Joseph DePinto | 734-332-1200 | [jdepinto@limno.com](mailto:jdepinto@limno.com)



### Integrating Energy and Water Resources Decision Making (\$207,000)

This was a first-of-its-kind attempt to explore the water impacts of a changing energy mix at a regional scale and have those impacts highlighted early in the planning process. The generating mix in the region is shifting because of Renewable Portfolio Standards (RPS) that mandate that electric utilities supply an increasing percentage of power from renewable resources. The team created a map to show those relationships; developed a model to generate scenarios that show the water consequences of generating choices; and designed a second phase pilot project.

The Great Lakes Commission led a talented team that included Cornell University, Sandia and Argonne National laboratories, Great Lakes Environmental Law Center, Environmental Law and Policy Center, and Michigan Technological University.

The project resulted in a number of important products that are available to stakeholders and decision-makers around the basin.

- A list of the most vulnerable watersheds in the basin based on water availability and hydrologic and ecosystem sensitivities.
- An interactive, energy-water nexus map of the Great Lakes, located at <http://erie.glin.net/glew/>.
- A first-of-its-kind modeling tool developed by Sandia National Laboratories and modified for use in the Great Lakes basin, to predict the long-term water resource impacts associated with changes in energy use.
- Policy analysis on the current policy framework for energy markets, integrated energy planning, and facility siting and operations. Two papers, *Great Lakes Energy Facility Siting, Environmental Laws and Regulations*, and *The Confluence of Power and Water: How Regulation of the Electric Power Grid Affects Water and Other Natural Resources*.
- A report to the public titled, *Integrating Energy and Water Resources Decision Making in the Great Lakes Basin*.

Great Lakes Commission

Contact: Victoria Pebbles | 734-971-9135 | [vpebbles@glc.org](mailto:vpebbles@glc.org)

### Networked-Neighborhoods for Eco-conservation (\$481,000)

The goal of this project was to test a way to "network" individual environmental improvement activities on a neighborhood level in order to achieve results that matter at local and regional scales. To do this, the team developed a web-based application (called Networked Neighborhoods for Eco-conservation or NECO; [www.networkedneighbors.org](http://www.networkedneighbors.org)) that uses mapping and social networking concepts to stimulate the adoption of green practices focused on slowing or capturing stormwater, and to track their implementation in communities across the Great Lakes region. The idea behind this is that while a single individual practice, such as creating a rain garden, may seem inconsequential, these practices can collectively have a significant impact if they are adopted across an entire watershed. NECO provides a way for individual participants to monitor their own actions and effectiveness, as well as those of their neighbors, via the Internet.



The team partnered with neighborhood organizations (West Michigan Environmental Action Council, West Michigan Strategic Alliance, Toledo Ohio Rain Garden Initiative, and the Root-Pike Watershed Initiative Network) to install and track green practices in Grand Rapids, MI; Toledo, OH; an 8-county region in west Michigan; and Racine, WI. The team relied heavily on these local partners to establish strong centers of adoption for NECO.

In its final form, the NECO system allows users to map environmental improvement practices, add photos, visualize activities in their neighborhoods, and share practices with others with a wide variety of social information sharing tools. Users are able to calculate the volumes of water managed, and other environmental benefits provided by their practices.

Michigan State University

Contact: Jon Bartholic | 517-353-3742 | [bartholi@msu.edu](mailto:bartholi@msu.edu)

### Optimizing Industry Water Use – Phase II (\$256,000)

The goal of this grant was to identify how various water footprinting/stewardship tools could best help industrial water users support production, optimize costs, and minimize ecosystem impacts. The team evaluated the potential relevance and utility of the various tools to four large withdrawal volume, self-supply industries that rely on Great Lakes waters, and tested the strength of these stewardship tools in detecting ecosystem impacts.

From this work, the team found that the tools can provide an effective mechanism to help industries better understand their water uses, practices, and potential environmental impacts in both a qualitative and quantitative manner. The team also found that the tools promote transparency and disclosure of an industry's water use and water management strategy; and they also provide a means for industry to communicate about their water use practices to the public.

The team concluded that the water stewardship tools, as they are currently designed, have a number of limitations. The tools are labor intensive and have been created with the expectation that industrial facilities are staffed with environmental personnel. In contrast, today's modern industrial facilities are extremely efficient, personnel limited, and automated. The team also learned that the existing tools provide little guidance on scale when evaluating impacts even though scale matters greatly, particularly when assessing impacts around large water bodies. Finally, the tools overlook the fact that in water rich regions, such as the Great Lakes, it is the movement of water over the land, not the amount of water that is the driver for water management. While runoff matters here, it is not a concept built into existing water stewardship tools.

This effort showed that the simplifying assumptions that were built into these tools to enable them to work globally, do not work well in the Great Lakes, and that there is a real need for a water stewardship toolkit that works in this region.

Council of Great Lakes Industries

Contact: George Kuper | 734-663-1944 | [ghk@cgli.org](mailto:ghk@cgli.org)



### Value of Great Lakes Water Initiative (\$167,000)

This effort was successful in investigating the feasibility of implementing efficiency-oriented pricing in the Great Lakes. The project advanced the knowledge of how and why water rates are set in the Great Lakes region and brought experts together from around the region. The project resulted in a number of important products that are available to stakeholders and decision-makers around the basin.

- A literature review of the influence of water revenue structures on water use.
- List of the most vulnerable watersheds in the basin based on water availability and hydrologic and ecosystem sensitivities.
- Four successful utility rate workshops in Racine, WI; Ann Arbor, MI; Buffalo, NY; and Chicago, IL.
- A Water Pricing Primer for the Great Lakes region.
- A report titled, *Water Utility Rate Survey – Findings and Recommendations*, (prepared from the team's survey of Great Lakes utilities) which includes 17 recommendations for advancing water pricing to achieve both economic viability for the utility and environmental sustainability of Great Lakes water resources.
- A report to the public titled, *Value of Great Lakes Water Initiative: Final Report*.

All products are posted online at [www.glc.org/wateruse/watervalue](http://www.glc.org/wateruse/watervalue), and the Water Pricing Primer is also available on the Alliance for Water Efficiency's website.

Great Lakes Commission

Contact: Victoria Pebbles and Rebecca Pearson | 734-971-9135 | [vpebbles@glc.org](mailto:vpebbles@glc.org) [bpearson@glc.org](mailto:bpearson@glc.org)

### Water Management Program Efficiency and Effectiveness Initiative (\$200,000)

The Council of Great Lakes Governors offered broad support to the non-regulatory work of the Great Lakes-St. Lawrence River Basin Water Resources Council (Compact Council) and the Great Lakes-St. Lawrence River Water Resources Regional Body (Regional Body). Project work included a variety of planning and management elements in support of the Compact Council and the Regional Body. This ongoing work will continue to develop the region's water management regime and lay the foundation for longer-term institutional and programmatic arrangements.

Council of Great Lakes Governors

Contact: David Naftzger | 312-407-0177 | [dnaftzger@cglg.org](mailto:dnaftzger@cglg.org)

### Water Use Impacts and Conservation Benefits (\$171,000)

This was a planning phase grant in which the team identified, examined and quantified the broader environmental impacts resulting from water use and conservation. It was a first of its kind attempt to identify how water users can prioritize actions based on the relationship of their water source to their discharge location, and development history. The team also explored how water conservation can reduce



the electricity demands of water and wastewater utilities and quantified the environmental benefits and cost savings of those reductions.

The team found that typical water conservation strategies, such as low flow toilets, often with a single-minded focus of 'gallons of water used' do not work well in a water rich region. For systems using Great Lakes water, there is no measurable environmental impact from conventional water conservation strategies – prioritizing conservation practices depends on many factors, including the source of water, discharge location, and storm sewer system. The team found that restoring natural drainage patterns often presents far greater ecological gains than decreasing use.

During the project the team:

- Catalogued and mapped the different water sources that serve different water utilities in the basin and the wastewater discharge locations.
- Established a protocol (prepared by the Chicago Climate Exchange) for developing carbon and other emissions credit.
- Developed an interactive tool that enables water, wastewater and stormwater utilities to target and prioritize water conservation actions based on the water source, discharge receiving waters, and development history.
- Developed an interactive tool, the Water Conservation, Emissions, and Emissions Credit Tool, that enables water, wastewater and stormwater utilities to calculate the potential electric cost savings from conservation and translate these savings into carbon (and other GHG) values and dollar value of carbon credits.

Environmental Consulting & Technology, Inc.

Contact: Jeffrey Edstrom | 312-421-0444 | [jedstrom@ectinc.com](mailto:jedstrom@ectinc.com)





# Appendix 3

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## Portfolio of Projects as of December, 2012



# Portfolio of Projects as of December, 2012

## A Phosphorus Soil Test Metric for Reducing Dissolved Phosphorus Loads (\$947,000)

The objectives of this project are to:

- Develop a surficial phosphorous (SurP) soil test to measure the level of phosphorous currently available in the soil
- With certified crop advisors, the fertilizer community and local farmers, create management options for taking action based on detected phosphorous levels
- Measure phosphorous inputs to tributaries in Ohio, and share the results and lessons learned with groups in Saginaw Bay, MI; Green Bay, WI; and Ontario
- Develop a SurP metric that describes the level of reactive phosphorous in the soil and the likelihood of increased phosphorous loads into nearby tributaries (this should motivate changes that lead to ecosystem improvements in the Lakes)

The talents of all members of the agricultural supply chain will be tapped to accomplish a significant goal: a fifty percent reduction of dissolved, reactive phosphorous in the Ohio Lake Erie Basin within the next ten years. The team will also deliver the tools needed to achieve similar results in Saginaw Bay, Green Bay and Ontario. The successful reduction of phosphorous levels will drive down eutrophication in Lake Erie, reduce the outbreak of harmful algal blooms, and improve aquatic health.

Heidelberg College

Contact: David Baker | 419-448-2941 | [dbaker@heidelberg.edu](mailto:dbaker@heidelberg.edu)

## Applying Water Stewardship Tools in the Great Lakes Basin (\$449,000)

Building off prior Fund-supported work, this team will create a new Great Lakes-specific water stewardship toolkit that will prevent or reduce ecosystem impacts by advancing the sustainability of the Basin's water resources, and be compatible with industry needs. For this project, the team will work closely with the Alliance for Water Stewardship (AWS) to pilot the draft International Water Stewardship Standard – and using these results and the results of their prior pilot work will build a set of tools, suitable for use in the basin that will advance water stewardship. The team will pilot the AWS draft standard and the toolkit at the four high volume industrial facilities the team worked with in the prior phase; a fifth pilot facility will be added that draws its supplies from the headwaters of the Kalamazoo River, a potentially hydrologically vulnerable location.

The team will implement a robust capacity building and outreach program, including hosting a series of workshops, to build anticipation for the project's products and tools among state and provincial water resource managers, water tool developers and users, water stewardship advocates and Great Lakes industries.

Council of Great Lakes Industries

Contact: Kathryn Buckner | 734-663-1944 | [kabuckner@cgli.org](mailto:kabuckner@cgli.org)



### **Automated Ballast Treatment Verification Project (\$823,000)**

This project will reduce the likelihood of new invasive species entering the Great Lakes. The team will accomplish this by creating an automated, shipboard, rapid-testing system that will be able report, in real time, the presence of any live organisms in ballast water following treatment. If successful, this effort will eliminate one of the greatest challenges facing invasive species control - the ability to capture sufficient volumes of water to properly assess the efficacy of ballast treatment methods and compliance with ballast standards.

The team will work closely with leaders in the ballast monitoring field including university experts, state and federal agency staff, shippers, carriers, and equipment manufacturers, and will convene at least annually a regional ballast verification management workshop. The team will also maintain an informal network of stakeholders and interested parties and will promote the work at regional, national and international meetings.

Wayne State University

Contact: Dr. Jeffrey Ram | 313-577-1558 | [jeffram@med.wayne.edu](mailto:jeffram@med.wayne.edu)

### **Characterizing the Risk-Release Relationship for Aquatic Invasive Species in the Great Lakes (\$1,027,000)**

Awarded in 2011, this project will develop new scientific methods to estimate the risk of establishment of aquatic invasive species (AIS). The team will determine how the invasion risks vary with the numbers of invasive organisms released into the environment. The project responds directly to a key research need identified by the National Academies of Sciences (NAS), and includes many of the members of that panel on the project team.

The team will convene a panel of international experts on invasion biology to provide advice and peer review throughout the project's duration. With the expert panel, the team will detail experimental designs, analytic protocols, and statistical data treatments for two types of assessments: lab assays and field surveys. The lab assays will use large-scale mesocosms designed to estimate how many invaders are needed to successfully establish a permanent population. The field surveys will complement the lab work by sampling the biota in the ports following ship discharges. They will analyze the variability in the sampling and analytic methods; develop models that link the discharge concentrations to establishment in harbors; and develop a database of species present in ship discharges to Great Lakes harbors.

Northeast-Midwest Institute

Contact: Allegra Cangelosi | 202-464-4014 | [acangelo@nemw.org](mailto:acangelo@nemw.org)

### **Economic and Environmental Benefits of Industrial Water Use Efficiency (\$324,000)**

This team will design a basin-wide industrial water conservation assistance program. They will conduct conservation and ecological improvement opportunity assessments at three industrial facilities that use public water supply and wastewater treatment services; explore how financial, technical, and other resources can overcome common barriers to conservation; and then create a menu of program offerings



and develop a plan to deliver those services. The program could reduce the use and release of chemicals used to treat water and wastewater, air emissions associated with pumping water and wastewater and flow disruptions associated with water withdrawals and returns flows.

Alliance for Water Efficiency

Contact: Mary Ann Dickinson | 773-360-5100 | [maryann@a4we.org](mailto:maryann@a4we.org)

#### **Founders Film: A Look Back to Go Forward (\$50,000)**

Ravenswood Media is producing a short-format film documenting the Fund's founding governors, their vision for the Great Lakes and the steps they took to put that vision into action. This team is conducting filmed interviews of key governors and other leaders with the purpose of capturing their personal connections to the Great Lakes and their actions to create a lasting legacy.

Ravenswood Media

Contact: David McGowan | 312-356-9099 | [mcgowan@ravenswoodmedia.com](mailto:mcgowan@ravenswoodmedia.com)

#### **Great Lakes River Mouths and the Region's Economic and Environmental Future (\$65,000)**

Awarded in 2011, this is a 9-month planning grant that will seek to develop a project that creates a new regional approach to Great Lakes river mouth redevelopment founded on restoring hydrological and ecological services, creating sustainable economic activity, and managing Great Lakes river mouths as a network. The team will document how the river mouths are currently being used and explore how they may be used sustainably in the future. Specifically, the team will look at: 1) critical hydrological and ecological services provided by Great Lakes river mouths and the importance of each; 2) social drivers governing Great Lakes river mouth development; 3) key current economic and transportation uses of Great Lakes river mouths and likely future trends; 4) current development patterns and compatibility with ecological and hydrological services; and 5) examples of sustainable individual and network river mouth development found within and outside the region.

Northeast-Midwest Institute

Contact: Allegra Cangelosi | 202-464-4014 | [acangelo@nemw.org](mailto:acangelo@nemw.org)

#### **Implementing Real-Time Resource Use Feedback to Motivate and Empower Conservation (\$812,000)**

Water and electricity users will experience a new and immediate connection to the consequences of their actions, as a result of this project which seeks to change individual activity through social accountability. The project team seeks to “engage, educate, motivate and empower” resource consumers to change their behavior in 138 residential and commercial spaces on or near the Oberlin College campus.

The team will develop, deploy and evaluate a monitoring system that provides users real-time feedback on the amount of water and electricity they use, as well as direct consequences of that use. They propose that this will reduce residential power and water use, and in turn, reduce air emissions and restore stream



flows in the Plum Creek watershed, which runs through Oberlin and is part of the Black River watershed that drains into Lake Eerie.

The team will install displays in student dormitories, apartment buildings, and mixed-use housing that show what is being consumed, how much it costs, and what the effect is upon air and water resources. They will also build an automated monitoring network that will assess changes in flow due to water withdrawals and discharges, as well as air quality and power sold. The team expects to provide information at the residence, neighborhood, city and watershed scales.

Oberlin College

Contact: John Petersen | 440-775-6692 | [john.petersen@oberlin.edu](mailto:john.petersen@oberlin.edu)

### **Improving Water Management in the Great Lakes Basin (\$75,000)**

This is a 6-month planning and design grant that will develop a project to identify the ecological benefits and explore the financial rationale for pursuing water conservation and green infrastructure practices, and test how this information—when combined with effective knowledge transfer techniques—can drive better water management throughout the Great Lakes region. The team will approach this work from the viewpoint that water conservation, to be effective in the Great Lakes region, must include municipal supply, storm- and wastewater, and engage a different set of stakeholders than traditional water conservation strategies.

Great Lakes United

Contact: John Jackson | 716-886-0142 | [jjackson@web.ca](mailto:jjackson@web.ca)

### **Improving Water Management in the Great Lakes Basin – Phase II (\$562,000)**

Building off of their planning grant, this team will identify and test the environmental and financial rationales for municipalities to pursue water conservation and green infrastructure practices, and test how this information—when combined with effective knowledge transfer techniques—can drive innovation in water management throughout the Great Lakes region. The team will approach this work from the viewpoint that water conservation, to be effective in the Great Lakes region, must include municipal supply, storm- and wastewater, and engage a different set of stakeholders than traditional water conservation strategies.

The team will complete a detailed impact and infrastructure assessment in six pilot communities; develop of a set of management actions for each community that will reduce environmental impacts and decrease costs; track the rate at which the pilot communities implement the recommended actions and calculate the environmental and financial impacts; and create and test a series of knowledge transfer strategies that will help communities teach other communities. The team will transfer the tools created in the pilots to communities throughout the basin. New communities of practice will be created around the most promising techniques that have ecological importance and basin-wide applicability.

Great Lakes Commission

Contact: John Jackson | 716-886-0142 | [jjackson@web.ca](mailto:jjackson@web.ca)



### Launching GLIN Labs (\$81,000)

This project will begin the redesign of the Great Lakes Information Network (GLIN), a creation ultimately intended to lead to positive results for the Great Lakes such as decreased invasions of exotic species, less harmful runoff from farms and cities, and reduced air and water pollution. The team will begin this effort by launching an innovation platform called “GLIN Labs” that will:

- Create new software
- Help users create new information products
- Host a small set of strategy experiments for what GLIN should become

The project team will upgrade how the network’s data is made available and coordinate a series of design and piloting workshops to explore the potential capabilities of a re-energized GLIN. The team will update its strategic and operating plans for GLIN to incorporate what has been learned in this work and pursue next steps in a future proposal.

Great Lakes Commission

Contact: Tim Eder | 734-971-9135 | [teder@glc.org](mailto:teder@glc.org)

### Market Based Approaches to Green Infrastructure to Restore Hydrologic Function (\$692,000)

Awarded in 2011, the goal is to develop a method to access new capital for sustainable stormwater solutions. The team will evaluate the types of financial transactions possible, and will set up models for financial transactions between an investor who builds green infrastructure and a buyer who requires the stormwater benefits. The team will develop an innovative on-line financial trading platform that will establish the means of transfer and payment structure, and which will allow the sellers and buyers to assess the value of the green infrastructure and the environmental benefits it provides.

The team will prepare training materials that will describe the transactions, the process for developing them, and will contain a blueprint for a market-based system. The team will also hold a workshop where regulators, investors, sellers and buyers will be instructed in the elements of the trading program.

Environmental Consulting & Technology, Inc.

Contact: Jeffrey Edstrom | 312-421-0444 | [jedstrom@ectinc.com](mailto:jedstrom@ectinc.com)

### Piloting a Paradigm for Adaptive Management of Great Lakes Watersheds (\$400,000)

This team will create, test, refine and deploy a new set of analytic tools to explore the many uses of the basin’s waters. The team will also identify where, when, and by what degree water uses impact ecological health, and it will identify the economic value created by such uses. The team will develop quantitative relationships between use, impact and economic value in three “trial” watersheds, vet analyses in workshops with water users and regulators, create a set of tools for those audiences and prepare a strategy to further refine their approach. This work takes advantage of information developed in a large National Science Foundation-supported project that is assessing the economic value of Great Lakes water. It provides the best chance to link that effort to the state and provincial initiatives driven by the



Great Lakes Water Resources Compact and companion Regional Agreement, especially assessments of cumulative impacts and revisions to the Decision standard to be undertaken in 2013.

Michigan Technological University

Contact: Alex Mayer | 906-487-3372 | [asmayer@mtu.edu](mailto:asmayer@mtu.edu)

### **Real-Time System Optimization for Sustainable Water Transmission and Distribution (\$1,480,000)**

To minimize air emissions created by water supply systems, this project seeks to optimize water movements within the supply, collection and treatment system. This effort could also reduce water withdrawals, effluent discharges and impacts of overflows that cause unintentional releases.

Proposed in-system storage capacity will allow the utility to alter the timing and magnitude of water withdrawals, shifting the system pumps' demand for electricity away from peak times when the power system requires the use of high-emission generating sources.

The team will also install pump monitors and flow meters for real-time information on the hydraulic characteristics of the system. New software will use this information to optimize the use of pumps and track the resulting changes in power demand, energy costs, withdrawal timing, storm-holding capacity and other measures. Software and training will be made available to water utilities at no charge.

Wayne State University

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### **Redeveloping Vacant Land as Green Infrastructure in Great Lakes Cities (\$167,000)**

This team will test the extent that green infrastructure in urban centers can increase ecological functions and highlight existing efforts to implement green infrastructure in the Great Lakes region and beyond. Green infrastructure could improve water quality by reducing flows of untreated wastewater that impact the Great Lakes each year through storm events. To do this, the team will investigate the environmental, economic, and social value of reusing vacant lands as green infrastructure in major Great Lakes cities. Leaders from across the Great Lakes will be recruited during this 12-month planning and convening period to explore this topic. The team will develop four to six large-scale demonstration projects and will work in the following cities: Duluth, MN; Flint and Detroit, MI; Chicago, IL; Milwaukee, WI; Gary, IN; Cleveland and Toledo, OH; Buffalo and Rochester, NY; Erie, PA; and Windsor, Toronto, and Hamilton, ON.

Cleveland Botanical Garden

Contact: Sandra Albro | 216-707-2860 | [salbro@cbgarden.org](mailto:salbro@cbgarden.org)

### **Risk Assessment and Management of Great Lakes Species (\$1,090,000)**

A risk assessment protocol created by this project team will speed up efforts to eliminate new introductions of invasive species into the Great Lakes. It will also help to stop the further spread of invasive, non-native species from the Great Lakes to other waters in North America. Work goals include:



- providing a sound scientific basis for assessing the relative invasion risk of vessels entering the Great Lakes, based on ports they have previously visited
- accelerating the creation of rapid genetic tests to identify ballast tank content
- identifying the best strategies to stop the spread of invasive species by recreational boaters

University of Notre Dame

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### **Ship-Mediated Harmful Microbes: Protecting the Great Lakes Ecosystem (\$1,029,000)**

“Microbial stowaways” on Great Lakes ships will be the target of this project, which will:

- Develop, test, and make widely available a set of new research techniques for microorganisms that threaten human health, wildlife health, or are otherwise ecologically or economically important
- Inventory the bacteriological content of ships’ ballast water; and develop an institutional blueprint for monitoring microbes in the Great Lakes Basin

In parallel, and without Fund support, the Great Ships Initiative will start to test disinfection methods to create a “rapid treatment response” capacity to prevent ships operating in the Lakes from releasing harmful microbes. All of these actions will improve the ability of the Great Lakes region to identify and respond to threats posed by such stowaways on vessels or in basin ports.

Northeast-Midwest Institute

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### **The Great Lakes Clean Communities Network (\$690,000)**

This team will develop a new collaborative approach to stormwater management in this region that will accelerate the local initiatives currently being implemented by single communities. For this project, the team will create a community of practitioners who will work together to implement stormwater projects at a larger scale than would be possible if working alone, and who will be supported by online resources. The team will pilot this approach in Grand Rapids, Michigan; Milwaukee, Wisconsin; Niagara Falls, New York; and in the Flint River watershed.

In addition to linking communities together, the project team will provide online information and guidance, as well as environmental tools and models to help communities target effective types and placement of stormwater runoff practices, estimate pollutant reductions, and map and track positive environmental impacts. The team will use a combination of marketing and rollout strategies to build a community of practitioners that will support and use the system. Ultimately, the project will create a vibrant learning community that will change the way stormwater is managed in the region.

Michigan State University

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### **Transforming our Approach to Generate Conservation Benefits from Agriculture (\$622,000)**

This team hopes to displace the low-margin fertilizer sales business with advisory services. The team will offer performance guarantees for farmers, and it will connect suppliers and advisors to federal subsidies that make offering these technical services attractive as a line of business. The team's work will focus in areas where farmers have yet to implement complete conservation practices on their fields. In this pilot phase, the team is working with farmers to reduce annual field contributions of phosphorus by over 17,000 pounds, nitrogen by over 67,000 pounds, and sediment by over 4,000 tons in two pilot areas. The team will also apply these lessons to other watersheds in New York, Michigan and/or Wisconsin's Great Lakes basin.

The IPM Institute of North America, Inc.

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### **Vacant to Vibrant: Vacant Land as Green Infrastructure (\$902,000)**

This project will lead to improved water quality in the Great Lakes by reducing stormwater runoff and the incidence of combined sewer overflows. To accomplish this, the team will establish a neighborhood-based network of small-parcel green infrastructure (GI) projects on vacant land in three Great Lakes cities. They will determine the potential for urban neighborhoods with an abundance of vacant land to serve as a GI network. This project will be the first to test the effectiveness of aggregated small parcels as a viable strategy for effective GI and stormwater management. It will also be the first to develop a simple GI portfolio that will be replicable across cities in the Great Lakes region. The team will work with local community partners in the cities of Buffalo, NY; Cleveland, OH; and Gary, IN—cities with high commercial and residential land vacancy; aging sewer/stormwater infrastructure; and a demonstrated interest and capacity for an interdisciplinary approach to green infrastructure.

This project is the result of a successful convening and planning phase which brought together experts from fourteen cities around the Great Lakes to assess the regional interest of reusing vacant urban lands as green infrastructure. The team will continue to develop this network by holding at least two regional meetings and by creating a regional community of practice—a Great Lakes Vacant Land and Green Infrastructure Collaborative that will engage stakeholders from the original fourteen cities and be expanded to include other stake holders from around the Great Lakes.

Cleveland Botanical Garden

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### **Watershed Ecological Sustainability Strategy – Transactions for Agricultural Ecosystem Services (\$940,000)**

Awarded in 2011, the team will design and test different transaction frameworks that will tie resources and funding flows to water stewardship outcomes. Specifically the team will: 1) design and test new ways to reduce drainage assessments for those farmers keeping soil and nutrients out of the drainage network; 2) explore and test new certification schemes for farmers and/or their products to attract new payments for ecosystem services; and 3) test how watershed-based performance incentives can be added to



Michigan's MAEAP program. The team will demonstrate how these different transactions can reward farmers by linking farmer payments to ecosystem improvements.

The team will build on existing water quality models (developed by team members with support from the NRCS, USACE and others) that will allow the team to predict impacts in a watershed based on actions on the land. The product from this work will be a prototype, low-cost, web-based tool that will identify the best type, placement and number of stewardship practices to meet desired ecological outcomes, and methods that link payments to those outcomes.

The Nature Conservancy

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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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