

# Great Lakes Protection Fund

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2011 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 2011, the Fund has made a total of 241 grants and program-related investments, representing a \$62.6 million commitment to protecting and restoring the ecological health of the Great Lakes ecosystem. Additionally, the Fund has paid \$42.9 million directly to its seven member states to support their Great Lakes priorities. Over the course of the past 22 years, the Great Lakes ecosystem has benefited from the States' initial investment of \$81 million with an overall commitment of \$105.5 million to date.

## Activities During 2011

In the past year, the Fund generated over \$2.8 million in investment income from the endowment. The Fund returned over \$450,000 to its member states to support their Great Lakes priorities. The Fund paid \$2.5 million to support regional projects. Audited financial statements can be found in Appendix 1.

The Fund entered 2011 with 20 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 \$9.9 million.

During 2011, the Fund developed and supported four new projects, maintaining the portfolio of active, supported work at over \$12.5 million. These projects support the Governors' non-regulatory water conservation and efficiency efforts under the Great Lakes–St. Lawrence River Basin Sustainable Water Resources Compact. The new projects for 2011 include an effort to develop new scientific methods to estimate the risk of establishment of aquatic invasive species. Another team will design and test different transaction frameworks that will tie resources and funding flows to water stewardship outcomes. These projects will help to achieve the Governors' objective of adopting sustainable use practices that protect the Great Lakes water resources and stopping the introduction and spread of non-native aquatic invasive species. The complete portfolio of supported work, including new projects awarded in 2011, can be found in Appendix 2.

## Evaluation of the Corporation's Performance

The Fund accomplished its objectives in 2011. 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 2011

## 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 2011

Todd Ambs (Madison, WI)

Bruce Baker (Madison, WI)

Richard Baird (Bath, MI)

Lori Boughton (Meadville, PA)

Kathleen Brown (Chicago, IL)

Jason Culotta (Madison, WI)

Ken DeBeaussaert (Lansing, MI)

Matthew Driscoll (Syracuse, NY)

Frederick Dudderar (Duluth, MN)

Michael Elmendorf (Albany, NY)

Alan Fish (Madison, WI)

Caren Glotfelty (Pittsburgh, PA)

Edwin Hammett (Toledo, OH)

Scott Harrison (Lutsen, MN)

Kenneth Johnson (Madison, WI)

Jack Kilroy (Avon, OH)

Jeffrey Logan (Mechanicsburg, PA)

Richard Meeusen (Pewaukee, WI)

Craig Shaver (Minneapolis, MN)

Debra Shore (Chicago, IL)

Maureen Smyth (Flint, 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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## 2011 Audited Financial Statements



## **Great Lakes Protection Fund**

Financial Report  
December 31, 2011





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McGladrey & Pullen, LLP



### Independent Auditor's Report

To the Board of Directors  
Great Lakes Protection Fund

We have audited the statements of financial position of Great Lakes Protection Fund (the Fund) as of December 31, 2011 and 2010 and the statements of activities and cash flows for the years then ended. These financial statements are the responsibility of the Fund's management. 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 includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe our audits provide a reasonable basis for our 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, 2011 and 2010 and its activities and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

*McGladrey & Pullen, LLP*

Chicago, Illinois  
April 3, 2012



## Great Lakes Protection Fund

### Statements of Financial Position December 31, 2011 and 2010

	2011	2010
<b>Assets</b>		
Cash and cash equivalents	\$ 11,009,175	\$ 12,701,704
Investments	94,507,508	100,608,412
Accrued interest	97,826	239,105
Other assets	48,552	21,378
Furniture, equipment and leasehold improvements, net of accumulated depreciation of \$261,388 and \$311,998 in 2011 and 2010, respectively	7,203	8,845
	<b>\$ 105,670,264</b>	<b>\$ 113,579,444</b>
<b>Liabilities and Net Assets</b>		
<b>Liabilities</b>		
Grant commitments	\$ -	\$ 110,299
Member state shares payable	450,467	1,081,164
Accrued expenses	215,561	264,671
Accrued pension contribution	4,818	4,124
Accrued postretirement health benefits	233,660	183,519
	<b>904,506</b>	<b>1,643,777</b>
<b>Net Assets</b>		
Unrestricted	5,031,836	3,768,284
Temporarily restricted	18,733,912	27,167,373
Permanently restricted	81,000,010	81,000,010
	<b>104,765,758</b>	<b>111,935,667</b>
	<b>\$ 105,670,264</b>	<b>\$ 113,579,444</b>

See Notes to Financial Statements.



Great Lakes Protection Fund

Statements of Activities

Years Ended December 31, 2011 and 2010

	2011				2010			
	Unrestricted	Temporarily Restricted	Permanently Restricted	Total	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue:								
Investment income	\$ 35,021	\$ 2,805,142	\$ -	\$ 2,840,163	\$ 8,423	\$ 4,687,145	\$ -	\$ 4,695,568
Miscellaneous revenue	-	6,205	-	6,205	-	5,852	-	5,852
Net assets released from restrictions	4,373,320	(4,373,320)	-	-	4,253,667	(4,253,667)	-	-
	<u>4,408,341</u>	<u>(1,561,973)</u>	<u>-</u>	<u>2,846,368</u>	<u>4,262,090</u>	<u>439,330</u>	<u>-</u>	<u>4,701,420</u>
Expenses:								
Program grants	2,424,341	-	-	2,424,341	1,761,233	-	-	1,761,233
Other program activities	620,682	-	-	620,682	596,235	-	-	596,235
Member state shares	450,466	-	-	450,466	1,081,164	-	-	1,081,164
Investment management and advisory fees	152,550	-	-	152,550	101,633	-	-	101,633
Administrative expenses	721,730	-	-	721,730	758,431	-	-	758,431
	<u>4,369,769</u>	<u>-</u>	<u>-</u>	<u>4,369,769</u>	<u>4,298,696</u>	<u>-</u>	<u>-</u>	<u>4,298,696</u>
<b>Increase (decrease) in net assets before other items</b>	<b>38,572</b>	<b>(1,561,973)</b>	<b>-</b>	<b>(1,523,401)</b>	<b>(36,606)</b>	<b>439,330</b>	<b>-</b>	<b>402,724</b>
Change in unrealized gains and losses relating to assets still held at end of year	-	(5,642,957)	-	(5,642,957)	-	6,656,147	-	6,656,147
Change in other postretirement benefit obligation	(3,551)	-	-	(3,551)	45,029	-	-	45,029
Transfer to reflect change in restricted status of interest charges on member state contributions	-	-	-	-	-	2,526,978	(2,526,978)	-
Transfer of amounts designated by board for operating reserve	1,228,531	(1,228,531)	-	-	-	-	-	-
<b>(Increase) decrease in net assets</b>	<b>1,263,552</b>	<b>(8,433,461)</b>	<b>-</b>	<b>(7,169,909)</b>	<b>8,423</b>	<b>9,622,455</b>	<b>(2,526,978)</b>	<b>7,103,900</b>
Net assets:								
Beginning of year	3,768,284	27,167,373	81,000,010	111,935,667	3,759,861	17,544,918	83,526,983	104,831,767
End of year	<u>\$ 5,031,836</u>	<u>\$ 18,733,912</u>	<u>\$ 81,000,010</u>	<u>\$ 104,765,758</u>	<u>\$ 3,768,284</u>	<u>\$ 27,167,373</u>	<u>\$ 81,000,010</u>	<u>\$ 111,935,667</u>

See Notes to Financial Statements.



## Great Lakes Protection Fund

### Statements of Cash Flows

Years Ended December 31, 2011 and 2010

	2011	2010
Cash Flows from Operating Activities		
Increase (decrease) in net assets	\$ (7,169,909)	\$ 7,103,900
Depreciation and amortization	5,766	17,502
Realized gain on sales of investments	(300,704)	(2,476,613)
Unrealized (gain) loss on investments	5,642,957	(6,656,147)
Changes in:		
Accrued interest	141,279	(134,639)
Other assets	(27,174)	(6,074)
Grant commitments	(110,299)	(477,841)
Member state shares payable	(630,697)	1,081,164
Accrued expenses	(49,110)	103,975
Accrued pension contribution	694	(2,595)
Accrued post retirement health benefits	50,141	(5,438)
<b>Net cash used in operating activities</b>	<b>(2,447,056)</b>	<b>(1,452,806)</b>
Cash Flows from Investing Activities		
Purchases of investments	(12,014,166)	(18,189,602)
Proceeds from sales of investments	12,772,817	23,520,214
Purchases of furniture, equipment and leasehold improvements	(4,124)	(2,068)
<b>Net cash provided by investing activities</b>	<b>754,527</b>	<b>5,328,544</b>
<b>(Decrease) increase in cash and cash equivalents</b>	<b>(1,692,529)</b>	<b>3,875,738</b>
Cash and cash equivalents:		
Beginning of year	12,701,704	8,825,966
End of year	<b>\$ 11,009,175</b>	<b>\$ 12,701,704</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 are 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 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 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 remaining 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 (UBIT). 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, 2011 and 2010, 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 April 3, 2012, the date the financial statements were available to be issued.

**Reclassifications:** Certain December 31, 2010 amounts have been reclassified to conform with the current year presentation without affecting previously reported net assets or changes in net assets.

#### Note 2. Investments

Investments consist of the following:

	2011	
	Cost	Market
Common stocks and stock equivalents - global equity	\$ 12,721,008	\$ 11,541,429
Mutual funds		
Domestic equity	31,367,728	33,518,794
International equity	26,002,102	24,048,768
Fixed income	25,048,812	25,398,517
	<u>\$ 95,139,650</u>	<u>\$ 94,507,508</u>
	2010	
	Cost	Market
Common stocks and stock equivalents - global equity	\$ 9,134,767	\$ 8,768,336
Mutual funds		
Domestic equity	35,564,429	38,305,394
International equity	26,002,102	28,098,614
Fixed income	24,896,321	25,436,068
	<u>\$ 95,597,619</u>	<u>\$100,608,412</u>





## Great Lakes Protection Fund

### Notes to Financial Statements

#### Note 2. Investments (Continued)

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

	2011	2010
Interest and dividends	\$ 2,539,459	\$ 2,218,955
Realized gains on securities sold	300,704	2,476,613
Total investment income included in operating revenue	<u>\$ 2,840,163</u>	<u>\$ 4,695,568</u>
Change in unrealized gains and losses relating to assets still held at end of year	<u>\$ (5,642,957)</u>	<u>\$ 6,656,147</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.

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 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.

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. The following section describes the valuation techniques used by the Fund to measure different financial instruments at fair value and includes the level within the fair value hierarchy in which the financial instrument is categorized.

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.





## Great Lakes Protection Fund

### Notes to Financial Statements

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

For the years ended December 31, 2011 and 2010, the application of valuation techniques applied to similar assets and liabilities has been consistent. The fair value of investment securities is the market value based on quoted market prices, when available, or market prices provided by recognized dealer brokers.

The tables below present the Fund's fair value hierarchy for those assets measured at fair value and on a recurring basis as of December 31, 2011 and 2010. The Fund does not have financial liabilities that are adjusted to fair value.

December 31, 2011				
	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 - 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

December 31, 2010				
	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 - global equity	\$ 8,768,336	\$ -	\$ -	\$ 8,768,336
Mutual funds				
Domestic equity	38,305,394	-	-	38,305,394
International equity	28,098,614	-	-	28,098,614
Fixed income	25,436,068	-	-	25,436,068
Total assets	\$ 100,608,412	\$ -	\$ -	\$ 100,608,412

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 approximates fair value due to the short maturity of these instruments.



## Great Lakes Protection Fund

### Notes to Financial Statements

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#### 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 \$450,467 and \$1,081,164 at December 31, 2011 and December 31, 2010.

#### Note 5. Grants Committed

Grant activity for 2011 and 2010 is as follows:

	Grants Approved	Grants Paid	Grants Committed December 31
2011	\$ 2,724,000	\$ 2,534,640	\$ -
2010	\$ 2,273,802	\$ 2,239,074	\$ 110,299

As of December 31, 2011, total grants approved since the Fund's inception amounted to \$62,615,315, of which \$5,072,681 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.

#### 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 \$5,031,836 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.

Prior to 2010, permanently restricted net assets also included interest on delayed payments from member states. In 2010, the Board voted to rescind this policy and treat interest on late payments of original contributions as temporarily restricted net assets until appropriated for expenditure.



## Great Lakes Protection Fund

### Notes to Financial Statements

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#### Note 6. Net Assets (Continued)

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 2011 or 2010. No interest is due from the State of Indiana until such time as it elects to join the Fund and to determine the time to make its required contributions.

#### 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.

*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.



## Great Lakes Protection Fund

### Notes to Financial Statements

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

The changes in endowment net assets for the Fund were as follows for 2011 and 2010:

	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	<u>\$ 18,733,912</u>	<u>\$ 81,000,010</u>	<u>\$ 99,733,922</u>

  

	2010		
	Temporarily Restricted	Permanently Restricted	Total
Endowment net assets, beginning of year	\$ 17,544,918	\$ 83,526,988	\$101,071,906
Transfer to reflect change in restricted status of interest charges on member state contributions	2,526,978	(2,526,978)	-
Investment income	4,687,145	-	4,687,145
Miscellaneous revenue	5,852	-	5,852
Unrealized gains on investments	6,656,147	-	6,656,147
Amounts appropriated for expenditure	(4,253,667)	-	(4,253,667)
Endowment net assets, end of year	<u>\$ 27,167,373</u>	<u>\$ 81,000,010</u>	<u>\$108,167,383</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 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.



## Great Lakes Protection Fund

### Notes to Financial Statements

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

*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%
Fixed income (U.S. Bonds), cash and cash equivalents	30-40%

*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.

#### Note 8. Commitments

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

Rent expense totaled \$141,451 and \$106,690 for 2011 and 2010, respectively.

Minimum payments required under the lease are as follows:

2012	\$ 130,572
2013	133,083
2014	135,594
2015	150,660
2016	153,171
Thereafter	474,579
	<u>\$ 1,177,659</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 \$55,296 and \$44,945 to the plan for 2011 and 2010, respectively.



## Great Lakes Protection Fund

### Notes to Financial Statements

#### 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 \$32,754 and \$26,402 to the plan for 2011 and 2010, 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 \$65,000 and \$13,000 to the plan for 2011 and 2010, 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.

The Fund follows accounting guidance requiring revised 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:

	2011	2010
Unrecognized prior service cost	\$ -	\$ -
Amortization of prior service cost	(11,118)	(11,118)
Amortization of net loss	-	(2,746)
Net loss (gain) experienced during the year	14,669	(31,165)
	<u>\$ 3,551</u>	<u>\$ (45,029)</u>



## Great Lakes Protection Fund

### Notes to Financial Statements

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

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

	2011	2010
Service cost	\$ 25,195	\$ 14,201
Interest cost	10,277	11,526
Amortization of unrecognized prior service cost	11,118	11,118
Amortization of net loss	-	2,746
	<u>\$ 46,590</u>	<u>\$ 39,591</u>

Additional information is as follows:

	2011	2010
Accumulated postretirement benefit obligation, beginning of year	\$ 183,519	\$ 188,957
Service cost	25,195	14,201
Interest cost	10,277	11,526
Plan amendments	-	-
Actuarial (gain)/loss	14,669	(31,165)
Accumulated postretirement benefit obligation, end of year	<u>\$ 233,660</u>	<u>\$ 183,519</u>
Plan assets at fair value, end of year	<u>\$ -</u>	<u>\$ -</u>
Fair value of plan assets	\$ -	\$ -
Accumulated postretirement benefit obligation	(233,660)	(183,519)
Funded status	<u>\$ (233,660)</u>	<u>\$ (183,519)</u>

The postretirement benefit obligation of \$233,660 and \$183,519 is accrued as a liability in the statement of financial position at December 31, 2011 and 2010, respectively.

The estimated prior service cost for the postretirement benefit plan that will be amortized into net periodic benefit cost during 2012 is \$25,195.

The Fund intends to fund the plan with operating revenue. No contributions were made to the plan in 2011 or 2010.





## Great Lakes Protection Fund

### Notes to Financial Statements

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

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

	2011	2010
Discount rate, beginning of year	4.40%	5.60%
Discount rate, end of year	4.40%	5.60%
Expected return on assets	N/A	N/A
Health care cost trend rate		2011
2012		9.67%
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	\$ 47,523	\$ (38,280)
Effect on service cost and interest cost	\$ 7,735	\$ (6,167)

No benefit payments were made for 2011 or 2010. Estimated future benefit payments are as follows:

	Postretirement Benefits
2012	\$ -
2013	-
2014	2,087
2015	4,839
2016	5,684
2017-2020	46,969
	<u>\$ 59,579</u>





# Appendix 2

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## Portfolio of Projects as of December, 2011



# Portfolio of Projects as of December, 2011

## Preventing Biological Pollution

### 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)

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

The Great Lakes will have a new line of defense against the "next set" of invasive species, when a new detection technology is unveiled by a team of researchers from the University of Notre Dame. This team will work with experts in invasive species biology, nanotechnology and molecular ecology, as well as Canadian and U.S. agencies to:

- Build five species-specific molecular probes—four for potentially invasive species (Chinese mitten crab, killer shrimp, golden mussel and predatory water flea) and one to detect zebra mussels
- Develop a ship-scale, laboratory independent detection platform for onboard or in port
- Establish a network to communicate the technology's progress and application

If successful, decision-makers will be able to know the invasive species threat posed by a particular vessel within two hours of taking a ballast water sample.

University of Notre Dame

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



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

This team has convened stakeholders, recruited technical experts, and assembled a project team to evaluate different plans to physically separate the Great Lakes from the Mississippi River via the Chicago Area Waterway System (CAWS). This work is prompted by the history of invasive species moving between the watersheds, as well as the presence of two species of Asian carp in the upper reaches of the Illinois River and perhaps in the CAWS. This is the first step in a larger collaborative effort to engage the entire region in developing solutions that promote economic development, recreational uses and the biological security of the Lakes. The Fund's early support allowed the team to secure more than \$1.7 million for the project's second phase.

Great Lakes Commission

Contact: Tim Eder | 734-971-9135 | [teder@glc.org](mailto:teder@glc.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 places and strategies to stop the spread of invasive species by recreational boaters

University of Notre Dame

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

### **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

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

## Leadership for Ecosystem Restoration

### 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)

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

This grant allows 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., will develop 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)



### **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)

### **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)

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

This team will produce an effective and scientifically sound plan for ecological sustainability in Great Lakes watersheds. The team will create and demonstrate a Watershed Ecological Sustainability Strategy for the Great Lakes Basin (WESS), including:

- Water conservation actions like leakage control, water re-use and demand reduction
- Improved water quality through better agricultural management and waste treatment

The team will design an effort to pilot the strategy to two pilot watersheds—one agricultural, one urban. In workshops and on a website, the team hopes to effectively demonstrate the feasibility and utility of the WESS for restoring and sustaining the health of watersheds throughout the basin.

Limno-Tech, Inc.

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



### **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 Erie.

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)

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

The Great Lakes Commission will design a project to incorporate ecological factors into the planning, siting, and operation of new power production facilities, to limit negative impacts on aquatic habitats and resources. The project team will do this through modeling and macro-level analysis, seeking the assistance of energy and environment decision makers. A future pilot project will seek to apply the regional and sub-regional results of this project to future energy production practices and decisions. Long-term ecological outcomes could include:

- Protection of aquatic habitats from the impacts of power generation technologies
- Reductions in water use from power production sectors
- Environmental benefits resulting from such reductions

Great Lakes Commission

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



### 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)

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

A team led by Michigan State University will encourage Great Lakes communities to conserve water, manage runoff and adopt various watershed improvement activities in this project. The project team will introduce environmental improvement activities and then test a way to “network” individual activities on a neighborhood level in order to achieve results at local and regional scales.

First, they will develop informational guides on positive items such as rain barrel installation, water use timing, rain gardens, and permeable pavements and landscaping. Next, they will distribute the information and lead the positive actions with neighborhood groups in Grand Rapids, MI, Toledo, OH, Racine, WI and an 8-county region in west Michigan.

In addition to this, individual participants will be socially motivated toward action by monitoring and comparing their own and their neighbors’ actions via the Internet. Modeling will help neighborhoods identify where practices could be most effective by displaying results on local watershed or neighborhood websites.

Michigan State University

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

### 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: Geri Unger | 216-707-2817 | [gunger@cbgarden.org](mailto:gunger@cbgarden.org)

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

The Council of Great Lakes Governors will offer 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 will include 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. Results will include information, analysis and options needed for the Regional Body and Compact Council to decide how to effectively tackle future work related to the sustainable use and management of Great Lakes water.

Council of Great Lakes Governors

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

## **Market Mechanisms**

### **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)





### **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.

Contact: Thomas Green | 608-232-1410 | [ipmworks@ipminstitute.org](mailto:ipmworks@ipminstitute.org)

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

The team will explore cost drivers and revenue models for water utilities, identify areas where water conservation can make a critical difference in ecological and public health, and design one or more pilot projects to explore the role of pricing in meeting these outcomes.

This project will assess:

- The potential use of efficiency-oriented pricing for Great Lakes water resources
- How pricing could be combined with other conservation practices
- How pricing can relate to regional water management issues including the availability of water for use, and impacts on the Great Lakes ecosystem

Great Lakes Commission

Contact: Tom Crane | 734-971-9135 | [tcrane@glc.org](mailto:tcrane@glc.org)

### **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

Contact: Dennis McGrath | 517-316-2251 | [dmcgrath@tnc.org](mailto:dmcgrath@tnc.org)

## Natural Flow Regimes

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

The team will explore a suite of different water footprinting methods. It will determine how well these tools characterize industrial water use and identify water conservation strategies in industrial processes and modify them to work in a water-rich region. The team will also test the strength of these tools in detecting ecosystem impacts in a water-rich area such as the Great Lakes and determine whether they can be modified for applicability in the Great Lakes. If successful, this work will provide new tools that will advance the sustainability of the basin's water resources and reduce ecosystem impacts.

Council of Great Lakes Industries

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

### Piloting a Paradigm for Adaptive Management of Great Lakes Watersheds (946)

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 \$400,000

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

Contact: Carol Miller | 313-577-3790 | [cmiller@eng.wayne.edu](mailto:cmiller@eng.wayne.edu)

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

This project will address the negative effects of changing the Great Lakes hydrologic systems. The team expects this effort to result in better understanding of the benefits of water conservation and how they can be characterized, captured, and/or monetized. The project will be completed in three steps:

- Examining the environmental, economic and energy impacts of altering flow paths of water based on source and discharge
- Identifying pilot areas where activities and carbon offsets can be demonstrated and measured
- Developing a work plan to measure environmental impacts as well as addressing the potential for trading water conservation-based carbon credits

Environmental Consulting & Technology, Inc

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



**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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