

# Great Lakes Air Deposition (GLAD) Program

## 2006 Request for Proposals



The Great Lakes Commission (GLC) requests proposals for innovative projects under the Great Lakes Air Deposition (GLAD) program. The purpose of funding under the GLAD program is to safeguard the environment and human health from the adverse effects of atmospherically deposited toxic contaminants in the Great Lakes region. This program supports scientific investigation and the development of assessment tools to identifying the magnitude, sources and impacts of toxic contaminant deposition within the region and to facilitate concerted and strategic actions to mitigate such impacts.

Proposals should focus on contaminants of concern for atmospheric deposition in the Great Lakes region and should demonstrate a likelihood that the contaminant(s) being examined are depositing to the region's waterways from the atmosphere in a quantity that may cause adverse impacts to humans or wildlife. **Proposals should focus on tangible benefits to be delivered to the Great Lakes states and how proposed projects will assist the states and their partners in taking informed actions toward assessing and reducing the deposition and impacts of the contaminants being addressed.**

Priority activities, described further below, include: source identification; emission inventory development; monitoring; atmospheric and multi-media modeling; and assessment of impacts on human health and wildlife. These activities are consistent with the goals of Annex 12 and 15 of the Great Lakes Water Quality Agreement, the Great Lakes Toxics Substances Control Agreement of 1986, the Great Lakes Binational Toxics Strategy, and Great Waters sections of the Clean Air Act. Applicants are strongly encouraged to carefully review all components of this request during the preparation of proposals.

### General Information

#### Availability of Funds

The funding available for the current year of the GLAD program is \$1,160,000. Previously sponsored projects have ranged from \$20,000 to \$250,000, with a median of about \$120,000. Proposals to be granted funding will be determined based on the selection criteria and programmatic goals described below. Considerations will be made to achieve balanced coverage of the five GLAD Focus Areas described in this RFP and to equitably address needs across the region's geography.

#### Eligibility

Great Lakes state agencies, interstate agencies, accredited academic institutions, and other public or non-profit agencies and organizations in the U.S. are eligible for funding. Federal agencies and for-profit organizations are not eligible. State agencies not bordering the Great Lakes are ineligible. Academic institutions and other organizations located outside the region are eligible.

### Matching Funds Requirements

This program does not have a requirement for matching funds or cost sharing. However, consideration of matching fund programs and/or cost leveraging will be made during the proposal evaluation process. Those proposals including cost sharing in the form of cash, in-kind goods and services, and third party contributions may be given preference as part of the review process.

### Project Duration

Projects sponsored under this request must be completed within 24 months of the initiation of a contractual agreement with the Great Lakes Commission. Notification of selections will be made on or about March 1, 2006. Where feasible, shorter project timelines are encouraged. Extension of projects beyond 24 months will require re-application under a future grant cycle.

## **Program Objectives**

Reducing input of toxic substances to the lakes and the mitigation of impacts from these substances on human health and wildlife are major priorities for restoration efforts in the Great Lakes basin. Of greatest concern are those chemicals that are persistent in the environment, bioaccumulate as they move up the food chain and are toxic to humans or wildlife (referred to as persistent bioaccumulative toxics or PBTs). Many such chemicals enter Great Lakes waters in substantial amounts through deposition from the atmosphere. Despite much progress, further scientific assessment and technological developments are needed to enable effective management of the problems posed by deposition of toxic substances to the region's waters. Toward this end, the GLAD Program supports scientific projects to identify and quantify the sources, environmental transport processes, deposition rates, fate and impacts of these chemicals. The program operates with the goal of assisting the Great Lakes states and their partners in forming scientifically sound policies regarding this issue, including regulatory and non-regulatory pollution control and prevention programs.

Described below are the current project priorities of the GLAD Program. Applicants are encouraged to propose any projects they believe are consistent with the goals and principles of the GLAD program. Projects are encouraged which build upon and enhance current regional efforts. Project proposals should specify how the proposed activities will enhance other scientific or policy efforts.

### Great Lakes Air Deposition Program Priorities

The GLAD program pursues projects involving one or more of the following five Focus Areas: atmospheric deposition monitoring; emissions inventory development; source identification and characterization; atmospheric and multi-media modeling; and assessment of impacts on wildlife and human health. Each focus area is described in detail below. Each Focus Area is an equal part of a comprehensive strategy to address atmospheric deposition issues in the Great Lakes region. Balance of projects among the Focus Areas will be a consideration in making project selections. Summaries of current and past GLAD projects are available at [www.glc.org/glad](http://www.glc.org/glad).

### **Assessment of Impacts on Wildlife and Human Health**

Project proposals are encouraged which study the linkages between emissions, deposition and environmental or human health effects of PBTs. Projects should focus on what human and environmental impacts are caused by PBTs, what portion of these impacts can be attributed to

atmospherically deposited PBTs, and/or how reductions in emissions (either of a particular chemical, from a particular source class, or from a particular region) can alleviate these impacts. When possible, information from other GLAD focus areas - such as monitoring, emission inventory, and modeling results - should be leveraged.

Specific impact assessment activities include:

- Development of improved indicators of the status and trends of atmospheric deposition and associated impacts in the Great Lakes basin and/or individual lake basins, potentially including concentrations in sentinel species, biomarkers of exposure and bio-assays, among others.
- Determination of environmental pathways and exposure routes through enantiomeric fraction analysis, isotope analysis or other methods.

### **Atmospheric Deposition Monitoring**

Monitoring of atmospheric deposition is required for high-quality, quantitative estimates of the flux of PBTs between the atmosphere and the waters, soils, sediments and biota of the region.

Monitoring provides an information base for activities in other focus areas, including source characterization, modeling and impact assessment. In particular, the program seeks to build the region's capacity to monitor for pollutants of concern to support trend studies, perform source apportionment analyses, calibrate atmospheric deposition models, and evaluate emissions reduction strategies and recovery trajectories.

Specific priority monitoring activities include:

- Development of monitoring technologies and methods to improve quantification of deposition
- Monitoring for depositional characteristics and patterns of contaminants of emerging concern
- Enhanced monitoring at current PBT sources or PBT-contaminated sites to support emission reduction or remedial activities, such as in support of Area of Concern Remedial Action Plans or activities under the Great Lakes Binational Toxics Strategy.
- High-resolution monitoring of speciated mercury to meet state and regional management needs, particularly to enable identification of influences of urban areas or particular sources.
- Determination or verification of emission levels from priority sources, including fossil-fuel combustion, metallurgical operations, etc.

### **Source Identification and Characterization**

Understanding what sources ultimately contribute to PBTs entering the Great Lakes is a vital step toward reducing these loadings. Therefore, efforts to further determine source types, processes, and locations/regions that contribute PBTs through atmospheric deposition to the lakes are a priority.

Potential projects include receptor-based monitoring and source apportionment, assessment of sources and transport based on enantiomeric fractions, review and/or revision of emission factors, and better determination of spatial and temporal trends, among others.

Specific priority source identification and characterization activities include:

- Receptor based source apportionment (e.g., through chemical mass balance, principal component analysis or similar statistical methods), back-trajectory analysis or other methods to support local or regional toxic substance management activities

- Reviewing and refining existing emission factors for improved data accuracy
- Development of emission factors

### **Emissions Inventory Development**

An accurate assessment of the magnitude and locations of atmospheric contaminant emissions is a vital foundation for other GLAD Focus Areas. The Great Lakes Air Toxics Emissions Inventory, which will continue to be supported, provides baseline regional emissions data and supports national inventory efforts. Continuing enhancement of the inventory efforts and improved integration of inventory data with other research and policy activities are needed, including development of capabilities for inventorying emissions from currently non-quantified sources and of currently non-quantified pollutants. Proposed projects are encouraged to closely integrate activities with the Great Lakes Air Toxics Emissions Inventory and/or other relevant emissions inventories to ensure incorporation and longevity of results.

Specific priority inventory development activities include:

- Development of atmospheric emissions inventories, emission factors and/or methodologies for pollutants of emerging concern (e.g., brominated flame retardants, perfluorinated compounds, metals, etc.) or for emissions of PBTs from non-quantified or poorly quantified sources, such as residential waste combustion (i.e., “burn barrels”), agricultural pesticide application and contaminated sites.
- Improving the availability of emission speciation profile data, particularly for mercury and dioxins/furans

### **Atmospheric and Multi-Media Modeling**

Projects are encouraged which will enhance the region’s modeling capabilities to better understand the sources, transport, fate and exposure routes for pollutants of concern. By integrating activities under the other program focus areas, models can predict how changes in emissions and/or ambient concentrations will affect future trends in receptor concentrations and the resultant impacts.

Specific priority modeling activities include the development and/or application of models to:

- Assess recovery trajectories (of lakes, AOCs, etc.) under various emission reduction scenarios
- Apportion sources of PBTs to support Total Maximum Daily Load (TMDL) activities or other management approaches
- Assess impacts of emerging chemicals and/or screen new chemicals for potential to be transported to, accumulate in and cause harm to the Great Lakes ecosystem (including human health)
- Assess contributions of emissions sources at various distances (e.g., local vs. long-range)

### **Other Areas of Focus**

In addition to those priorities listed above, additional activities may also qualify for support if they are shown to further the program goals as outlined above. All applicants are encouraged to clearly identify the benefits of the proposed projects as they relate to the goals of the GLAD program. Some additional priority activities include:

- Projects, such as workshops or meetings, designed to advance collaboration and coordination among regional activities relating to any of the GLAD Focus Areas described above
- Development of education and/or outreach materials designed to reduce regional toxic emissions, such as regarding burn-barrels, for example.

## Proposal Review and Selection

### Selection Process

Selection of proposals will be made based on the program objectives determined by the GLAD Program Management Team (PMT). The PMT is composed of the state air program director or designees from each of the eight Great Lakes states (IL, IN, MI, MN, OH, NY, PA, WI). Proposals in response to this request will be evaluated by designated technical reviewers. Final selections will be made by the GLC in conjunction with the PMT. In making award decisions, the selection committee may consider the geographic distribution of needs and project benefits.

### Selection Criteria

Proposals will be evaluated in accordance with the general criteria listed below. Selections are made based on the consensus of the GLAD Program Management Team. In addition to the following criteria, the Management Team may weigh additional factors in making their decision.

GLAD Proposal Evaluation Criteria
<p><b>Conformance with the goals and priorities of the GLAD program</b></p> <p>The work proposed would further progress toward the priorities of the GLAD program. The overall goals of the GLAD program are:</p> <p>a. <u>Improving understanding of processes and impacts</u>: The work will lead to a better understanding of the processes of atmospheric transport and deposition or the impacts of pollutants of concern within the Great Lakes Basin.</p> <p>b. <u>Reducing emissions and loadings</u>: The work will inform decisions for reducing emissions of pollutants of concern. It will enable better identification and evaluation of technologies or policies that may reduce loadings of pollutants of concern within the Great Lakes.</p> <p>c. <u>Reducing environmental and human health impacts</u>: The work will lead to protection of the Great Lakes' environment, wildlife and human health from atmospheric deposition of pollutants of concern.</p> <p>Each project need not address all of these priorities, but should form an important component of an overall regional effort toward achieving these.</p>
<p><b>Need for the proposed work</b></p> <p>The proposal demonstrates that there is a large need within the region for the proposed work. Gaps in current knowledge or infrastructure that will be filled are identified and the importance of filling these gaps is explained. The work will result, directly or indirectly, in an increased ability of the Great Lakes states and their partners to make informed management decisions regarding atmospheric deposition of toxic substances and associated impacts and risks.</p>
<p><b>Integration with prior and concurrent work and capacity-building for future work</b></p> <p>The proposal takes account of similar prior and concurrent work. Whenever possible, efforts to form synergies with such work are made and duplication is avoided. The work is designed in a way to facilitate use of resulting information in future projects. The project builds the regional capacity for additional research.</p>
<p><b>Integration with management efforts</b></p>

GLAD Proposal Evaluation Criteria	
	The project will facilitate environmental management efforts by engaging appropriate partners, for instance government agencies, academia, community groups, or stakeholders for Lakewide Management Plans, Binational Toxics Strategy, etc. The project is structured such that results may inform resource management and/or regulatory decisions within the region.
Scientific and technical merit of the proposal	
	The proposal, the work described, and its rationale have a well-founded scientific basis. Scientific literature is used, when appropriate, to support arguments. Uncertainties are adequately identified.
Design of the work plan	
	The work plan is designed in the most appropriate way to ensure meaningful results. Plans demonstrate good use of time, resources and personnel. The schedule for achieving tasks is reasonable and appropriate. The work plan identifies products and deliverables and means of disseminating these to all appropriate audiences.
Performance capability of the investigators and institution	
	The experience and resources (including facilities, equipment, and instrumentation, if applicable) of applicants are shown to be appropriate to perform the work proposed.
Appropriateness of budget	
	The budget suggested is reasonably in keeping with the work proposed and with expected benefits.
Leveraging of additional resources	
	The project budget provides leveraged resources from other sources. In addition, resources contributed from other sources that are not quantified in the proposal and/or do not appear in the budget shall be weighed into the scoring based on the reviewers' assessment of those resources' values.

## Additional Guidance

### Project Clarifications/Revisions

Applicants may be contacted by the GLC for clarification and for the purpose of negotiating changes in project terms and amounts.

### Proposal Formatting

Project proposal text should be **no more than 6 pages in length** (one-inch margin, 12-point font). *The proposal template is available at the GLAD web site.* This length requirement does **not** include tables and figures, budgets, curriculum vitae, and references. These materials should be appended where necessary. Without prior approval by the GLC, *proposals beyond the 6 page limit will not be considered.*

All categories described above under *Selection Criteria* should be addressed and must include the following components:

- a. Project Title.
- b. Applicant Information. Include applicant (organization) name, address, contact person, phone number, fax and e-mail address.
- c. Funding Requested.
- d. Project Period. Provide beginning and ending dates (for planning purposes, applicants should assume funds will be available in March 2006 and projects may begin upon signing of a contractual agreement and acceptance of a QAPP).

- e. Narrative Work Plan. The narrative work plan must summarize the project and explicitly describe how the proposed project meets the guidelines established in the evaluation criteria:
  - Relevance to Great Lakes Air Deposition Program priorities
  - Problem statement
  - Proposed work and tasks
  - Proposed outcomes
  - Plans for information dissemination
- f. Key Personnel and Qualifications. Summarize your technical experience and knowledge and project management experience. Demonstrate how your qualifications meet the criteria. Resume or CV may be attached at the end of the narrative.
- g. Collaboration and partners
- h. Total Project Cost. Specify total cost of the project. Identify funding from other sources including any in-kind resources.
- i. Detailed Itemized Budget. A budget template will be provided including the following categories, specifying unit costs:
  - Personnel
  - Fringe Benefits
  - Contractual Costs
  - Travel
  - Equipment
  - Supplies
  - Other
  - Total Direct Costs
  - Total Indirect Costs: must include documentation of accepted indirect rate
  - Total Cost
- j. Reporting Requirements. Discuss timeline for quarterly progress updates. Quarterly progress reports should include: a summary of performance progress-to-date, problems encountered, successes achieved, and development.

### Deadline and Submission

Proposals must be received by **December 7<sup>th</sup>, 2005 before 5:00pm EST**. Proposals must be submitted online via the GLC's online application system at [www.glc.org/glad](http://www.glc.org/glad). Proposal format may be in Microsoft Word, WordPerfect or Adobe PDF format. Upon completion of online submission, *a signed copy of the proposal with authorized signatures is also required* and to be addressed to:

Great Lakes Commission  
Attn: Kevin Yam  
Eisenhower Corporate Park  
2805 S. Industrial Hwy, Suite 100  
Ann Arbor, MI 48104-6791

### Notification

Once the proposal has been submitted via the online application system, GLC will confirm proposal receipt within three business days. If receipt of electronic submission is not received by e-mail within this time, applicants *must contact the GLC Project Officers to confirm receipt*. Final funding decisions will be announced on or before **March 1<sup>st</sup>, 2006**.

## Quality Assurance

A Quality Assurance Project Plan (QAPP) must be submitted within 90 days of the grant award and not less than 30 days prior to commencement of any data collection or processing. The purpose of the QAPP is to ensure that data collection and reporting processes are thoroughly planned, conform to any relevant standards and are compatible with other relevant regional efforts. In addition, measures that will be taken to ensure the accuracy and integrity of data and a plan for making data available to others should be described. The recipient will adjust its implementation schedule accordingly. Costs associated with data collection are not allowed until the QAPP is approved. Proposed budgets should account for preparation of a QAPP. For more information on GLAD QAPP requirements, see [www.glc.org/glad/qapps.html](http://www.glc.org/glad/qapps.html).

## Subcontracting

All anticipated subcontracting shall be identified within the project proposal and budget. Any additional subcontracting arising after grant award will require explicit written approval by the GLC Project Officer.

## Data Reporting

All environmental monitoring data collected under this agreement shall be submitted to the GLC in spreadsheet format, preferably using Microsoft Excel or delimited text files, by the end of the project duration.

## Progress Reports

Applicants who accept and receive funding will be required to submit quarterly progress reports and a final project report. Awarded recipients may also be invited to deliver a presentation to the GLC, U.S. EPA, state agencies and/or other interested audiences on project results. Quarterly progress reports shall be submitted electronically to the GLC within 30 days of the end of the reporting period.

## Final Products

**Projects sponsored under this request are to be completed no later than 24 months from initiation of the contract.** Those who receive funding shall submit a final report and products to the GLC in electronic form for acceptance and approval at the completion of the project. Any data collected, compiled or calculated shall also be submitted to the GLC as final products. The final report will, at the GLC's discretion, be placed on GLC's website. The Final Report is subject to the Freedom of Information Act.

## Confidentiality and Intellectual Property

It is expected that applicants will only submit non-confidential information, since external reviewers assist in evaluations and since information will be transmitted via the Internet. 40 C.F.R. Part 2 discusses "public information", including procedures for claiming confidentiality (40 C.F.R. SS 2.203 and 2.204). Note that under Public Law No. 105-277, data produced under an award is subject to the Freedom of Information Act. All intellectual property is to be retained by the U.S. EPA, the GLC and the represented state governments.

## For Further Information and Program Contact:

Kevin Yam, Project Manager, or Jon Dettling, Program Specialist, Great Lakes Commission, 2805 S. Industrial Hwy, Suite 100, Ann Arbor, MI 48104-6791. Phone: (734) 971-9135; Fax (734) 971-9150, or email [kyam@glc.org](mailto:kyam@glc.org) or [dettling@glc.org](mailto:dettling@glc.org).