

**Great Lakes Air Deposition (GLAD) Program
Quality Assurance Project Plan Review Checklist
Modeling Projects**

This checklist is based on the U.S. EPA's *Guidance for Quality Assurance Project Plans for Modeling* (EPA/240/R-02/007, December 2002). This checklist will be used to review QAPPs for GLAD-sponsored projects involving primarily the creation or application of environmental models. Preparers of QAPPs for such projects are encouraged to refer to this checklist to ensure all elements are included and adequately addressed. The above mentioned document should be referred to for detailed explanations of the requirements of each component. For projects involving both model creation/application and primary data collection, the requirements of both this checklist and the Primary Data Collection Projects checklist must be addressed

PROJECT TITLE:

QAPP version:

Preparer:

Reviewer:

Date Submitted for Review:

Organization:

Organization: Great Lakes Commission

Date of Review:

<input type="checkbox"/> Accepted as is	<input type="checkbox"/> Accepted, if minor issues addressed	<input type="checkbox"/> Major revision needed
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Reviewer signature	
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Element	Acceptable	Section	Comments
A1. Title and Approval Sheet			
Contains project title	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicates revision number, if applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicates organization's name	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Date signature of organization's project manager	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Dated signature of organization's QA manager present	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Other signatures, as needed	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A2. Table of Contents			
Lists QA Project Plan information sections	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Document control information indicated	<input type="checkbox"/> Yes <input type="checkbox"/> No		

Element	Acceptable	Section	Comments
A3. Distribution List			
Includes all individuals who are to receive a copy of the QA Project Plan and identifies their organization	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A4. Project/Task Organization			
Identifies key individuals involved in all major aspects of the project, including contractors	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Discusses their responsibilities	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Project QA Manager position indicates independence from unit generating data	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies individual responsible for maintaining the official, approved QA Project Plan	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Organizational chart shows lines of authority and reporting responsibilities	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A5. Problem Definition/Background			
States decision(s) to be made, actions to be taken, or outcomes expected from the information to be obtained from the modeling activities	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Clearly explains the reason (site background or historical context) for initiating this project	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies regulatory information, applicable criteria, action limits, etc. that the model outcomes may be used in reference to	<input type="checkbox"/> Yes <input type="checkbox"/> No		
If creating a new model, justification is given for inability to use existing models in given application	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A6. Project/Task Description			
Summarizes work to be performed in model creation or application	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes datasets, software, reports and other products to be produced	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Provides work schedule indicating critical project points	<input type="checkbox"/> Yes <input type="checkbox"/> No		

Element	Acceptable	Section	Comments
Details geographical locations and physical, chemical and biological features of the system to be modeled, including maps, diagrams and schematics where possible	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Discusses resource and time constraints, if applicable	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A7. Quality Objectives and Criteria			
Identifies performance criteria for all information to be collected and acceptance criteria for information obtained from previous studies. Explains how these performance criteria of model inputs relate to the desired quality of model outputs	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Discusses the process for validating model outcomes and determination of adequate accuracy and precision. Discusses the need and method for sensitivity/uncertainty analysis	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Discusses the representativeness of the modeling activity: to what situations will model conclusions apply?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
If a model is being created, describes the process for identifying variables considered statistically important to the prediction process and included as model inputs	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies software/hardware requirements and constrains	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A8. Special Training/Certifications			
Identifies any project personnel specialized training or certifications	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Discusses how this training will be provided	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicates personnel responsible for assuring these are satisfied	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies where this information is documented	<input type="checkbox"/> Yes <input type="checkbox"/> No		
A.9 Documentation and Records			
Describes the format for reporting of model parameterization, model inputs, model calibration and model output	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Lists all project documents, records, and electronic files that will be produced and distributed	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies where project information should be kept and for how long	<input type="checkbox"/> Yes <input type="checkbox"/> No		

Element	Acceptable	Section	Comments
Discusses back up plans for records stored electronically and in hard-copy	<input type="checkbox"/> Yes <input type="checkbox"/> No		
States how individuals identified in A3 will receive the most current copy of the approved QA Project Plan, identifying the individual responsible for this	<input type="checkbox"/> Yes <input type="checkbox"/> No		
If creating a model, identifies plans for creation of system documentation and user's guide	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B7. Model Calibration			
Identifies model components requiring calibration, frequency of calibration, and associated performance criteria that must be maintained	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies how records of calibration will be maintained	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies method for assessing goodness-of-fit for model predictions and measurements or observations	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies how deficiencies should be resolved and documented	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B9. Non-direct Measurements (Data Acquisition Requirements)			
Identifies data sources, for example, computer Databases, literature sources, or models that should be accessed and used	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes the intended use of this information and the rationale for their selection, i.e., its relevance to project	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Indicates the acceptance criteria for these data sources and/or models and how this will be determined	<input type="checkbox"/> Yes <input type="checkbox"/> No		
B10. Data Management and Hardware/Software Configuration			
The collection, flow and processing of data is adequately described, using process flow diagrams where appropriate.	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies data handling equipment/procedures that should be used to process, compile, analyze, and transmit data reliably and accurately	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies and explains expected methodologies for model data analysis and interpretation	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes approach to detecting and correcting errors in data entry or transmission, where needed	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies applicable data security issues and/or response-time issues	<input type="checkbox"/> Yes <input type="checkbox"/> No		

Element	Acceptable	Section	Comments
Describes procedures to demonstrate acceptability of hardware and software configurations	<input type="checkbox"/> Yes <input type="checkbox"/> No		
C1. Assessments and Response Actions			
Lists the number, frequency, and type of assessment activities that should be conducted, with the approximate dates	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies individual(s) responsible for conducting assessments, indicating their authority to issue stop work orders, and any other possible participants in the assessment process	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes how and to whom assessment information should be reported	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies how corrective actions should be addressed and by whom, and how they should be verified and documented	<input type="checkbox"/> Yes <input type="checkbox"/> No		
C2. Project Reporting			
Identifies what project status reports are needed and how frequently	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies who should write these reports and who should receive this information	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D1. Data Review, Verification, and Validation			
Describes criteria that should be used for accepting, rejecting, or qualifying model results in an objective and consistent manner	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D2. Verification and Validation Methods			
Describes process for data verification and validation, indicating what data validation software should be used, if any	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies who is responsible for verifying and validating different components of the project data/information	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Identifies issue resolution process, and method and individual responsible for conveying these results to data or model users	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes procedures to evaluate the uncertainty of the validated data	<input type="checkbox"/> Yes <input type="checkbox"/> No		
D3. Reconciliation with User Requirements			

Element	Acceptable	Section	Comments
Describes how the results obtained from the project or task will be reconciled with the requirements defined by the data user or decision maker	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Outlines the proposed method for analyzing the output data and determining possible anomalies or departures from assumptions established in the planning phase of the modeling process	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Describes how limitations on data use should be reported to the data users	<input type="checkbox"/> Yes <input type="checkbox"/> No		