**Chesapeake Bay Program | Indicator Analysis and Methods Document**

*[Insert Indicator Title Here] | Updated [Insert Date Here]*

Indicator Title:

Relevant Outcome(s):

Relevant Goal(s):

Location within Framework (i.e., Influencing Factor, Output or Performance):

**A. Data Set and Source**

1. Describe the data set. What parameters are measured? What parameters are obtained by calculation? For what purpose(s) are the data used?
2. List the source(s) of the data set, the custodian of the source data, and the relevant contact at the Chesapeake Bay Program.
   * + Source:
     + Custodian:
     + Chesapeake Bay Program Contact (name, email address, phone number):
3. Please provide a link to the location of the data set. Are metadata, data-dictionaries and embedded definitions included?

**B. Temporal Considerations**

1. Data collection date(s):
2. Planned update frequency (e.g., annual, biannual, etc.):
   * + Source Data:
     + Indicator:
3. Date (month and year) next data set is expected to be available for reporting:

**C. Spatial Considerations**

1. What is the ideal level of spatial aggregation (e.g., watershed-wide, river basin, state, county, hydrologic unit code)?
2. Is there geographic (GIS) data associated with this data set? If so, indicate its format (e.g., point, line polygon).
3. Are there geographic areas that are missing data? If so, list the areas.
4. Please submit any appropriate examples of how this information has been mapped or otherwise portrayed geographically in the past.

**D. Communicating the Data**

1. What is the goal, target, threshold or expected outcome for this indicator? How was it established?
2. What is the current status in relation to the goal, target, threshold or expected outcome?
3. Has a new goal, target, threshold or expected outcome been established since the last reporting period? Why?
4. Has the methodology of data collection or analysis changed since the last reporting period? How? Why?
5. What is the long-term data trend (since the start of data collection)?
6. What change(s) does the most recent data show compared to the last reporting period? To what do you attribute the change? Is this actual cause or educated speculation?
7. What is the key story told by this indicator?

**E. Adaptive Management**

1. What factors influence progress toward the goal, target, threshold or expected outcome?
2. What are the current gaps in existing management efforts?
3. What are the current overlaps in existing management efforts?
4. According to the management strategy written for the outcome associated with this indicator, how will we (a) assess our performance in making progress toward the goal, target, threshold or expected outcome, and (b) ensure the adaptive management of our work?

**F. Analysis and Interpretation**

*Please provide appropriate references and location(s) of documentation if hard to find.*

1. What method is used to transform raw data into the information presented in this indicator? Please cite methods and/or modeling programs.
2. Is the method used to transform raw data into the information presented in this indicator accepted as scientifically sound? If not, what are its limitations?
3. How well does the indicator represent the environmental condition being assessed?
4. Are there established reference points, thresholds, ranges or values for this indicator that unambiguously reflect the desired state of the environment?
5. How far can the data be extrapolated? Have appropriate statistical methods been used to generalize or portray data beyond the time or spatial locations where measurements were made (e.g., statistical survey inference, no generalization is possible)?

**G. Quality**

*Please provide appropriate references and location(s) of documentation if hard to find.*

1. Were the data collected and processed according to a U.S. Environmental Protection Agency-approved Quality Assurance Project Plan? If so, please provide a link to the QAPP and indicate when the plan was last reviewed and approved. **If not, please complete questions 29-31.**
2. *If applicable:* Are the sampling, analytical and data processing procedures accepted as scientifically and technically valid?
3. *If applicable:* What documentation describes the sampling and analytical procedures used?
4. *If applicable:* To what extent are procedures for quality assurance and quality control of the data documented and accessible?
5. Are descriptions of the study design clear, complete and sufficient to enable the study to be reproduced?
6. Were the sampling, analytical and data processing procedures performed consistently throughout the data record?
7. If data sets from two or more sources have been merged, are the sampling designs, methods and results comparable? If not, what are the limitations?
8. Are levels of uncertainty available for the indicator and/or the underlying data set? If so, do the uncertainty and variability impact the conclusions drawn from the data or the utility of the indicator?
9. For chemical data reporting: How are data below the MDL reported (i.e., reported as 0, censored, or as < MDL)? If parameter substitutions are made (e.g., using orthophosphate instead of total phosphorus), how are data normalized? How does this impact the indicator?
10. Are there noteworthy limitations or gaps in the data record?

**H. Additional Information (*Optional)***

1. Please provide any further information you believe is necessary to aid in communication and prevent any potential misrepresentation of this indicator.