

I. Stream Nutrient Assessment Procedure

A. The Stream Nutrient Assessment Procedure (SNAP) is performed to determine whether and to what degree a stream segment has been impacted by **nutrients**.

1. SNAP is comprised of two steps: preliminary assessment of trophic condition status and status verification.

a. SNAP is applicable to segments of **free flowing streams** with use designations for the protection of aquatic life, associated biological criteria, and drainage areas less than 1,000 square miles where benthic algae predominate over sestonic algae and provide a useful indication of nutrient enrichment.

b. The Director may apply SNAP to segments of free flowing streams with aquatic life habitat use designations where the drainage area is greater than 1,000 square miles based on site specific criteria, if benthic algae predominate over sestonic algae and provide a useful indication of nutrient enrichment.

c. The Director shall define the stream segment(s) that shall be used for each SNAP assessment in a biological assessment study plan.

2. Preliminary Assessment. Attainment status of Ohio's biological water quality criteria (**IBI, MIWb and ICI**), ~~as well as the diurnal 24-hour variation in dissolved oxygen (DO) swing, 24 hour swing (DO maximum concentration minus DO minimum concentration within a 24-hour period)~~ and the concentration of benthic chlorophyll *a*, are evaluated to determine a stream segment's nutrient enrichment or trophic condition status. The SNAP matrix, Table \_\_, shall be used to make a preliminary determination of trophic condition as one of the following:

- a. Attaining all biocriteria and not **threatened**
- b. Attaining all biocriteria, but may be threatened
- c. **Impaired**, but from cause(s) other than nutrients

**Commented [ARS1]:** Should the reference be 24 hour or diurnal?

**Commented [ADN2]:** Dissolved oxygen (DO) swing defined as the difference between the maximum DO and minimum DO in a 24-hour period

- d. Impaired, nutrient enrichment is a likely cause
  - e. Impaired, nutrient enrichment is a material cause
3. Status Verification.
- a. Attaining and not threatened. If a stream segment is attaining and not threatened, no further analysis is necessary. The stream segment does not have a nutrient enrichment problem.
  - b. Attaining, but may be threatened. If a stream segment is attaining, but may be threatened, the Director shall use Flow Chart A to determine the nutrient condition status.
  - c. Impaired, but from cause(s) other than nutrients. If a stream segment is impaired, but nutrients are not a material cause, the Director shall use Flow Chart B to determine the nutrient condition status.
  - d. Impaired, nutrients are or may be a material cause. If a stream segment is impaired, and nutrients are or may be a material cause, the Director shall use Flow Chart C to determine the nutrient condition status.
4. SNAP Tables and Flowcharts.
- a. Proposed Stream Nutrient Assessment Procedure Table
  - b. Flow Chart A – Decision Tree for Determining when Biologically Attaining Condition Status is Threatened by Nutrients
  - c. TABLE 1 – Equations used as guidance to help determine whether biological indicators are underperforming relative to existing habitat.
  - d. TABLE 2 – Concentrations of total phosphorus (TP) and dissolved inorganic nitrogen (DIN) arrayed by narrative levels of ecological risk.

- e. Flow Chart B – Decision Tree for Determining Biological Impairment Caused by Stressors Other Than Nutrients
- f. Flow Chart C – Decision Tree for Confirming Biological Impairment Caused by Nutrients

B. Data Requirements

1. Data Type. Data required to perform SNAP determinations shall include the following:
  - a. Minimum data required to perform a preliminary assessment (Table \_\_\_);
  - b. Additional supporting data required for status verification of threatened stream segments and stream segments impaired by cause(s) other than nutrients; and
  - c. Additional supporting data needed for status verification of stream segments impaired by nutrients including, as necessary and appropriate, information regarding other potential stressors in or affecting the stream segment.
2. Data Quantity. Minimum data requirements for performing SNAP determinations shall be consistent with the requirements given in Tables \_\_\_ and Table \_\_\_, **unless otherwise approved by the Director.**
3. Data Quality. **Except as approved by the Director,** all data used in the SNAP shall comply with rule 3745-4-06 of the Administrative Code, for Level 3 data requirements and reporting .

Commented [ARS3]: Should this language be included?

Commented [SS4]: Ditto

*Recommendation: Ohio EPA should develop a guidance document for use with the SNAP to outline field/ laboratory methods and sampling requirements.*

Table 1. Suggested Minimum Data Requirements for Performing SNAP Analyses

SNAP Assessment Steps	Data Type	Minimum Suggested Requirement for SNAP	
		# Number of Samples per Site*	Temporal Considerations**
Preliminary Assessment	Biological	<ul style="list-style-type: none"> <li>At least one fish and/or macroinvertebrate community sample</li> </ul>	<ul style="list-style-type: none"> <li>Collect within 3 weeks of benthic chlorophyll samples, or</li> <li>During periods with comparable baseflows to those measured during benthic chlorophyll sampling, provided the communities have not been affected by catastrophic flow events (flooding, desiccation, etc.) in the interim</li> </ul>
	Dissolved Oxygen	<ul style="list-style-type: none"> <li>48 hours of continuous data, or</li> <li>At least five days of discrete maximum and minimum data</li> <li>GJ: 5 days of discrete measurements is probably not adequate substitute for continuous monitoring (e.g., DO meter, or data sonde)</li> </ul>	<ul style="list-style-type: none"> <li>Collect within 2 weeks of benthic chlorophyll sampling during comparable baseflow conditions provided the stream has not been affected by catastrophic flow events (flooding, desiccation, etc.) in the interim</li> </ul>
	Benthic Chlorophyll	<ul style="list-style-type: none"> <li>10 – 20 benthic scrapings, reported as a geometric mean</li> </ul>	<ul style="list-style-type: none"> <li>Collect following at least 3 weeks of stable, baseflow conditions</li> </ul>
Flow Charts A & B	Nutrients	<ul style="list-style-type: none"> <li>At least 5-3 samples per location, reported as a geometric mean</li> </ul>	<ul style="list-style-type: none"> <li>Collect during stable, baseflow conditions</li> </ul>
	Biological	<ul style="list-style-type: none"> <li>Same as above</li> </ul>	<ul style="list-style-type: none"> <li>Same as above</li> </ul>
	QHEI	1	<ul style="list-style-type: none"> <li>Collect within 3 weeks of biological sampling, or</li> <li>Once per year, provided habitat has not been substantially affected by high flows or channel alterations</li> </ul>
Flow Chart C	Other Stressors	<ul style="list-style-type: none"> <li>Narrative observations and data commensurate with assessing the impact of the relevant stressor(s)</li> </ul>	

\* Number of sites per reach is based on best professional judgment.

\*\* With the exception of multi-year trend data needed to complete Flow chart A or unless sufficient justification is presented, all data shall be collected during the same calendar year. With the exception of QHEI data and information needed to complete Flowchart C, all data shall be collected between June 15 and October 15<sup>th</sup>.

## II. SNAP Implementation

### A. Develop Target Concentration, Target Load, and Load Allocations

1. This section applies to stream segments that have been identified through SNAP as either impaired or threatened by nutrients.

- a. A Water Quality Target Load (“WQTL”) shall be determined for total phosphorus only, unless DIN is found to be a **co-limiting** nutrient and a WQTL is found to be necessary for DIN.

#### 2. Water Quality Target Concentrations

- a. If the necessary data are available or readily attainable, the director shall calculate water quality target concentrations (WQTC) using water quality modeling based on achieving a stream segment DO ~~24-hour~~ swing  $\leq 6.5$  ~~milligrams per liter (mg/L)~~ and benthic chlorophyll *a*  $\leq 320$  ~~micrograms per liter (ug/L)~~.
- b. In the event that the necessary data are not available or readily attainable, the director may develop provisional WQTCs based on achieving a TP concentration of 0.40 mg/L or a DIN concentration of 3.6 mg/L, whichever is the nutrient principally responsible for the threatened or impaired condition. A provisional WQTC shall not be used as the basis for TMDLs, permit limits, or other regulatory actions if a water quality model is prepared pursuant to paragraph a.

Commented [ARS5]: Diurnal?

#### 3. Water Quality Target Load

- a. Using the WQTC developed pursuant to paragraph 2, the Director shall calculate a water quality target load (WQTL) for the stream segment as the product of the WQTC and the stream flow.
  - i. The WQTL shall be calculated using the stream flow exceeded 80 percent of the time during the ~~growing season~~, based on a minimum number of 10 years of stream flow data.

Commented [SS6]: May 1 – October 31

#### 4. Wasteload Allocations and Load Allocations

a. Waste load allocations (WLAs) shall be calculated for point sources and load allocations (LAs) shall be calculated for non point sources of stream segments in which WQTL have been calculated.

b. For point source dischargers of nutrients, the wasteload allocation (WLA) shall be calculated using the following equation:

$$WLA = WQTL - LA - BA$$

Where: LA = load allocation assigned to nonpoint source discharges

BA = load from background sources

c. For nonpoint sources of nutrients including background sources, the load allocation shall be based on the following information \_\_\_\_\_:

d. The WLA and LA shall be based on the growing season stream flow exceeded 80 percent of the time.

e. The WLA based on the SNAP shall only apply during the growing season

5. Allocation – WLA for each PS

## B. Point Sources

### 1. Overview – Point Source (POTW and Industrial) Implementation

a. SNAP assessment shall result in one of four findings: there is no nutrient-caused impact, nutrients are threatening the attainment of biocriteria, nutrients are likely causing or causing impairment, or causes other than nutrients are causing impairment. Each finding carries different regulatory requirements for a point source.

i. If SNAP shows nutrients are not impairing or threatening to impair a stream segment's designated aquatic life uses, or if the impairment is caused by stressors other than nutrients, the Director shall not require nutrient permit limits.

ii. If SNAP shows nutrients are threatening a stream segment's designated aquatic life uses, (a) the Director shall place the

**Commented [ADN7]:** EPA's regulations define a TMDL = WLAs + LAs + MOS. Typically background sources (atmospheric) are included in the LAs if quantifiable, MOS if uncertain. By background, do we mean upstream sources? And what if these sources are unusually high?

**Commented [ERT8]:** The WLA procedure for toxics does subtract the load from background, but it doesn't address non-point sources

**Commented [ADN9]:** Define (upstream? Instream processes? Air deposition?)

**Commented [ERT10]:** Depending on how you do it, you could combine BA and LA if they are based on the upstream to a POTW sampling point.

**Commented [ADN11]:** we need options if there are multi-dischargers. If multiple, dischargers may agree to an aggregate WLA, or Director may propose an allocation that considers cost-effectiveness and affordability?

**Commented [ARS12]:** Reference 3(D): technical feasibility/cost-effectiveness, etc.

Reference the TMDL rule.

threatened stream segment on a watch list and, (b) permits issued to point sources shall require them to develop and implement an adaptive management plan or accept final permit limits for nutrients.

*Recommendation:* We recommend developing a new threatened category for stream segments threatened due to nutrients. A TMDL would not be needed due to adaptive management plan(s) or permittee accepting final limits?

- iii. If SNAP shows nutrients are a material cause of impairment, the Director shall, as an initial measure, cap existing POTW nutrient loads in subsequent NPDES permits at existing effluent quality and shall require implementation of preliminary pollution prevention measures for industrial sources. Such load caps or pollution prevention plans are referred to below as “initial management actions”).
  - iv. Following the completion of a SNAP, the Director shall evaluate whether point source nutrient load reductions alone will materially improve stream biology in the SNAP-assessed stream segment(s). If not, permittee(s) shall maintain their initial management actions. If point sources’ nutrient load reductions will materially improve stream biology, the NPDES permit for the source(s) shall require the point source to develop and implement an adaptive management plan (“AMP”) and/or include final TP or DIN limits with a compliance schedule.
- b. If a point source discharging to an impaired water body chooses to pursue the AM option, it enters an iterative development, implementation, and monitoring process. After each iteration, the point source will evaluate the effectiveness of its AMP and the need for continued or additional AM measures, and shall either maintain previously implemented AM measures, if necessary, or revise its AMP.
- c. The point source shall submit the AMP -- which will describe the AM measures to be performed and the rationale therefor, and contain an implementation schedule and a post-implementation monitoring plan – to the Director for approval. Upon approval, the discharger shall implement the AMP. The approved AMP is an enforceable condition of an NPDES permit. Post-implementation monitoring will disclose whether the stream segment is attaining its designated aquatic uses, the

Commented [SS13]: PPPM needs to be defined and/or have cost caps.

Commented [SS14]: We need to figure out how the procedure will work. Will the permit have alternate limits/compliance schedules which the permittee must elect within “x” months?

biology of the stream segment is materially improving, or the biology of the stream segment is not materially improving.

d. AMP - Reassessment

- i. Attaining. If post-implementation monitoring shows that biocriteria have been attained (or that the cause of nonattainment is not materially due to nutrients), then point sources shall evaluate (and include in the post-implementation monitoring report to the Director) whether the existing AM measures need to be continued or maintained. If so, the Director shall incorporate such requirements into future renewal permits for as long as they are necessary. The Director shall also revise the 303(d) list, TMDL, and waste load allocations for the water body to reflect its attainment status.
- ii. Improving. If post-implementation monitoring shows that biocriteria are not in attainment but are materially improving, the point source shall evaluate whether continuing the current AMP is expected to yield further biological improvement. If so, subject to the Director's approval, point sources shall continue implementing their existing AMP and conduct post-implementation monitoring. If revisions to the adaptive management plan are needed to further materially improve biocriteria, the point source(s) shall revise their AMPs, submit them to the Director for approval, and implement the approved AMP. The iterative process shall continue, by evaluating the results of post-implementation monitoring and making AMP revisions as appropriate.
- iii. Not Improving. If the post-implementation monitoring shows that the biocriteria are not materially improving, the point source shall evaluate whether reductions in nutrient discharges, and/or other or additional AM measures, will materially improve biocriteria. If not, the point source may conduct a use attainability analysis to determine whether the designated use for the water body segment may be changed, or apply to the Director for a water quality variance. If nutrient reductions or additional AM measures will materially improve biocriteria, the point source shall revise its AMP, submit it to

the Director, and implement the approved AMP. The iterative process of maintaining, revising, or terminating AM measures based on the monitoring results shall continue.

2. Permits without SNAP

- a. For permits for discharges to stream segments where SNAP has not been performed, renewal NPDES permits (or permit modifications) that have not previously included TP or DIN limits may require monitoring (effluent, upstream, and downstream), but shall not include TP/DIN limits. If the previous permit included TP or DIN limits, the nutrient limits in the renewal NPDES permit shall not be more stringent. Notwithstanding the above, the Director may impose new or more stringent nutrient limits in permits if required by federal law, interstate compact, or nutrient rules developed for waterbodies not encompassed by SNAP.
- b. Existing permits (including renewals and modifications) that have the same TP or DIN limit as the previous permit) shall be treated as follows.
  - i. In those cases where the permittee has not made (or has not entered into a binding legal commitment to make) the capital investment for construction and/or installation to meet the limit (whether interim or final), and neither a site specific assessment based on the existing narrative standard or SNAP has been performed, the permittee may apply for, and the Director shall grant, a modification to the limit, which shall be based on existing effluent quality, pending the completion of SNAP and determination of whether a more stringent nutrient limit is needed.
  - ii. In those cases where the permittee has made (or has entered into a binding legal commitment to make) the capital investment for construction and/or installation to meet the limit, the point source shall complete the construction/installation and operate the equipment pending the completion of the SNAP for the affected stream segment(s). If SNAP determines that no, or less stringent, nutrient limits are appropriate, the permittee may apply for,

and the Director shall grant, a modification based on SNAP results.

- iii. Alternatively, the permittee may request, and the Director shall grant, a modification to provide that a compliance schedule based on AM be substituted for the existing numeric nutrient permit limit.

### 3. Permits with SNAP

- a. Reasonable Potential. For biocriteria-based determinations, the assessment whether to establish nutrient limits (which may be a WQTL or AM), shall be based on whether reductions in nutrients by point sources alone will result in a material improvement in biocriteria scores.

- i. Permit limits shall only be imposed on TP unless there is evidence that DIN is a co-limiting nutrient.

- b. Before imposing numeric nutrient limits or AMPS, and the compliance schedules associated therewith, the director shall consider:

- i. The technical feasibility of meeting the limits and implementing the AMP.

- ii. The projected environmental benefits of meeting the limits/AMPS and compliance schedules. In determining such benefits, the director shall consider:

- A. The need for additional data collection.

- B. The permittee's and Director's ability to generate additional data.

- iii. The costs, cost-effectiveness, and affordability of implementing the measures and the time needed to meet the limit or other less stringent limits, or to implement AM. In determining cost-effectiveness, the director shall consider:

- A. the incremental cost per pound of nutrient removed and the projected benefit resulting from less stringent limits

1. The affordability of meeting the limits. In determining affordability, the director shall consider:
  - a. the November 24, 2014 USEPA financial capability assessment framework
  - b. the Environmental Financial Advisory Board (“EFAB”) analysis and recommendations on Financial Capability Assessment, dated September 22, 2014. [Both a and b shall be summarized and included in rule format]

c. Adaptive Management

- i. As used in this rule, Adaptive management (AM) means an iterative process involving the design and implementation of cost-effective management actions to abate impairments and reduce threats to water quality, as determined by SNAP, caused in whole or in material part by nutrients. Because there is uncertainty regarding causal and restorative links between aquatic biology, nutrients, and other stressors, AM involves the evaluation of biological, chemical, physical, technical, economic and other relevant information to design and evaluate the effectiveness of management alternatives that would reduce the adverse biological impact caused by nutrients. These management alternatives, including but not limited to nutrient reduction, riparian and habitat restoration and improvement, effluent trading, watershed management practices, and other actions, shall be evaluated on their potential to materially improve biological conditions, cost-effectiveness, technical feasibility, affordability, time to implement, and other relevant factors.
- ii. AM plans (AMPs) shall include one or more management alternatives, a description of the actions to be taken, how they shall be maintained, an implementation time schedule, the estimated cost, projected benefits, and a post-implementation monitoring program to assess the effectiveness of the plan.

iii. As applied to permitted NPDES point sources, the AMP shall be submitted to the Director for approval. Upon approval, it shall become an enforceable part of the NPDES permit. If post-implementation monitoring determines that nutrient-caused impairment or threat still exists, then the permittee shall prepare and, upon the Director's approval, implement an updated AM plan, which shall assess the previous AMP and consider alternative or additional actions.

d. Multi-Party Adaptive Management ("MPAM")

i. MPAM can be part of a point source's AMP. The elements of a MPAM Plan may include:

A. An agreement between multiple PSs that discharge into the same stream segment to allocate the WQTL of nutrients among them. The PS NPDES permits shall be modified by the Director to reflect such agreement.

Commented [SS15]: To be discussed

B. A commitment by the PSs to perform AM on property that is owned by other party(ies). In such event, the PS shall obtain, and provide to the Director, easements or other rights in the land that assure that the PS can implement and maintain the AM actions for as long as necessary.

C. A legally binding agreement between the PS and one or more NPS (and may also include a third party coordinator for multiple NPS parties), that specified (in the AMP) that BMPs shall be implemented on the NPS property, and/or that the NPS shall modify the nature or intensity of its activities on part or all of its property to achieve nutrient reduction or other watershed improvement to reduce the impact of nutrient caused impairment.

Commented [SS16]: Should the rule require OEPA (and/or ODNR) to be a third party beneficiary of the agreement, so the state could enforce it.

Commented [gmj17]: Third party coordinator (sort of a middle man between PS and NPSs) shall be necessary to arrange/oversee/etc the NPS parties.

D. The MPAM and Water Quality Trading Program (WQTP) under Ohio Admin. Code 3745-5 are separate and independent programs. A discharger may participate in one or both. An element of a WQTP is

the calculation and allocation of WQ credits. The sole focus of AM is biocriteria improvement.

e. Permit Limit Details

i. Permittee shall elect whether to accept a final numeric permit limit based on the stream segment WQTL (and individual WLA) or engage in adaptive management.

A. If numeric permit limits are chosen, a compliance schedule shall be included into the NPDES permit. The compliance schedule may extend beyond the term of the permit and shall:

1. Include time for collection and evaluation of information relevant to the factors in paragraph \_\_\_ of this section before final permit limits and the final compliance schedule are established.

2. Allow the permittee adequate time to perform engineering studies to evaluate alternative treatment process modifications.

3. Provide the permittee adequate time for detailed engineering design, construction contract bidding, construction, and startup and initial process troubleshooting for treatment facilities.

ii. If adaptive management is chosen, an AMP shall be developed by the permittee (or jointly by two or more permittees impacting a particular stream segment) and approved by the Director.

A. Approved AMPs shall be enforceable conditions of NPDES permits.

B. The Director may include a compliance schedule for the AMP. The compliance schedule may extend beyond the term of the permit and shall:

1. Allow the permittee reasonable time to perform necessary engineering studies to evaluate treatment process modifications and/or AM actions
  2. Provide adequate time for detailed engineering design, construction contract bidding, construction, and startup and initial process troubleshooting for treatment facilities and alternative actions.
  3. Given the uncertain relationship between specific nutrient concentrations and attainment of biocriteria, when interim limits are imposed, the compliance schedule shall provide adequate time to assess the impact of reduced nutrient loadings and/or alternative AM actions on the receiving stream before more stringent limits are imposed or become effective.
- C. If the water body is attaining its designated use but nutrient controls are still necessary to maintain the designated aquatic uses, interim limits established in the previous permit may be continued as final limits in future renewal permits as long as they are necessary to maintain the designated use.
1. If the stream segment is improving but has not yet attained all designated aquatic life uses, the permittee shall evaluate whether continuing to implement the current AMP is expected to yield material further biological improvement. If continuing current AM measures is expected to yield material further improvement, subject to the Director's approval, point sources shall continue implementing their existing AMP in the next renewal permit and perform post-implementation monitoring. If revisions to the existing AMP can further materially improve biocriteria to meet the designated aquatic life use, a revised AMP shall be submitted to the Director for approval and incorporated into a renewal permit with

appropriate interim limits and a reasonable compliance schedule for implementing the revised AMP.

2. If the water body is not improving, the permittee shall evaluate whether reductions in nutrient discharges, or other or additional AM measures, will materially improve biocriteria. If revisions to the existing AMP will improve biocriteria, a revised AMP shall be submitted to the Director for approval and incorporated into a renewal permit.
  3. If nutrient controls on the permittee alone will not materially improve biocriteria, new or more stringent nutrient limits shall not be included in the renewal permit nor shall the permittee be required to engage in any additional AM measures.
- iii. For permittees that choose numeric nutrient limits and those that choose adaptive management:
- A. Permit limits shall be imposed only from May through October and shall be expressed as a seasonal average.
    1. Nutrient limits shall be expressed as mass loads.
    2. Loading limits shall consider wet weather flows. [Exact way in which this should be done has not yet been considered]
    3. If requested by a permittee, the Director may express the nutrient limit as a concentration-based limit instead of a mass loading limit. If concentration limits for TP or DIN are included in a NPDES permit, mass limits shall not be included.
  - B. interim limits other than those based on existing effluent quality (“EEQ”) shall not be imposed when:
    1. Construction of treatment facility improvements to achieve interim limits would substantially increase

the cost of subsequent facility modifications necessary to achieve more stringent final limits that may reasonably be expected; or

2. There is no reasonable expectation that interim limits will materially improve biocriteria.

#### D. Municipal Separate Storm Sewer Systems

1. SNAP assessment will result in one of four findings: there is no nutrient-caused impact, nutrients are threatening the attainment of biocriteria, nutrients are causing, or likely causing, impairment, causes other than nutrients are causing impairment
2. Findings and Required Action.
  - a. When SNAP shows nutrients are not impairing or threatening to impair a stream segment's designated uses, the Director shall not require modification of a MS4 Storm Water Management Program (SWMP) to address nutrient pollution controls. A MS4 permittee may voluntarily agree to modify its SWMP to proactively address nutrient pollution.
  - b. When SNAP shows nutrients are impairing or threatening a stream segment's aquatic life use designation, the Director shall place the threatened segment of the water body on a watch list and the MS4 permittee shall update its SWMP to address nutrient pollution. The SWMP modifications shall include:
    - i. Pollution prevention to reduce nutrient pollution;
    - ii. Public education on nutrient pollution;
    - iii. An adaptive management plan assessing best management practices targeted at TP and/or DIN control to the maximum extent practicable. Information may include removal efficiencies, costs, maintenance requirements, resource requirements, and applicability; storm water management strategies; and funding needs and mechanisms; and

Commented [SS18]: Needs definition and/or a cost cap

- iv. A tracking system to report on nutrient-related BMPs and other nutrient management efforts.
- c. Following the completion of a SNAP, the Director shall evaluate whether point source and/or MS4 nutrient load reductions alone will materially improve stream biology in the SNAP-assessed stream segment(s). If not, the MS4 shall maintain its initial management actions. If a MS4's nutrient load reductions will materially improve stream biology. If so, the NPDES permit for the source(s) shall require the MS4 to:
  - a. Submit a modified SWMP that identifies additional BMPs or other measures that can be taken to further reduce nutrient loadings. The SWMP will describe the BMPs, expected nutrient load reductions, implementation schedule, and funding.
  - b. Before requiring "I", and the compliance schedules associated therewith, the director shall consider the factors listed in section \_\_\_\_\_.

Commented [ADN19]: Don't we want the Director to evaluate just the MS4 and if the MS4 can make a difference?

Commented [ARS20]: Economic reasonableness section.

### 3. Post-Implementation Monitoring

- ~~e.a.~~ The MS4's permittee's SWMP shall provide a proposed post-implementation monitoring program.
- ~~d.b.~~ Post-Implementation monitoring may include instream monitoring, visual inspections of BMPs, performance monitoring of a new technology or a technology being deployed in a new region, or other appropriate monitoring activities.

### ~~3.4.~~ Reassessment.

- a. ~~Attaining.~~ If post-implementation monitoring and reassessment of the SNAP shows that biocriteria are being met and are not threatened, the Director shall evaluate whether AM measures in the SWMP need to be continued or maintained. The Director shall also revise the 303(d) list, TMDL, and WLAs and LAs for the water body to reflect its current attainment status.

- b. Improving. If post-implementation monitoring shows that biocriteria are not in attainment but have materially improved, the Director shall evaluate whether continuing with the current SWMP is expected to yield further biological improvement. If yes, the MS4 shall continue/update the existing SWMP. If no, the MS4 shall revise, obtain the Director's approval, and implement the revised SWMP in accordance with ... (c)(a). The iterative process shall continue, by evaluating the results of post-implementation monitoring and making SWMP revisions as appropriate.
- c. Not improving. If the post-implementation monitoring shows that biocriteria have not materially improved, the Director shall evaluate whether additional nutrient reductions or additional or other AM measures in the SWMP will materially improve attainment of biocriteria. If not, the local watershed group shall maintain the AM measures that it has implemented, if appropriate, and the Director will evaluate whether a water quality variance may be warranted or a use attainability analysis may be performed. If additional reductions or AM measures shall materially improve biocriteria, the MS4 shall revise its SWMP, submit it to the Director for approval, and implement it. The iterative process of maintaining, revising, or terminating AM measures based on the monitoring results shall continue.

#### E. Nonpoint Sources

1. SNAP assessment shall result in one of four findings: there is no nutrient-caused impact, nutrients are threatening the attainment of biocriteria, nutrients are likely causing or causing impairment, causes other than nutrients are causing impairment
2. Findings and Required Action.
  - a. When SNAP shows nutrients are not threatening to impair or impairing biocriteria, no requirements shall be imposed on nonpoint sources.
  - b. When SNAP shows nutrients are threatening biocriteria attainment, the Director shall place the threatened segment of the water body on a watch list.

- c. When SNAP shows nutrients are causing biocriteria impairment, the Director shall evaluate whether nonpoint source reductions in nutrient loading will result in a material improvement of the aquatic biology. If not, no requirements shall be imposed on nonpoint sources.
  - i. If nonpoint source reductions are expected to make a material improvement, then adaptive management to achieve nutrient loading reductions shall proceed via a watershed action plan developed to serve as the adaptive management plan (WAP-AMP).
  - ii. The WAP-AMP shall be developed by a local watershed stakeholder group within three years and submitted to the Director and Ohio DNR for endorsement. The WAP-AMP shall be in accordance with Ohio's *Guide to Developing Local Watershed Action Plans in Ohio* (June 1997), including the Appendix 8 Update (February 7, 2003), and the most recent U.S. EPA section 319 planning guidance (federal fiscal year 2006), and modified to incorporate an AM post-implementation monitoring program and iterative revisions and implementation.
  - iii. The WAP-AMP shall provide for sustainable funding for a watershed coordinator as well as implementation of the selected nonpoint source management measures and post-implementation monitoring.
- 3. Post-Implementation Monitoring.
  - a. The WAP-AMP shall include a post-implementation monitoring program.
  - b. Post-Implementation Monitoring may include instream monitoring, visual inspections of BMPs, performance monitoring of a new technology or a technology being deployed in a new region, or other appropriate monitoring activities.
- 4. Reassessment.

- a. Attaining. If post-implementation monitoring and reassessment of the SNAP shows that biocriteria are being met and are not threatened, the Director shall evaluate whether AM measures in the WAP-AMP need to be continued or maintained. The Director shall also revise the 303(d) list, TMDL, and load allocations for the water body to reflect its current attainment status.
- b. Improving. If post-implementation monitoring shows that biocriteria are not in attainment, but that water quality is improving, the Director shall evaluate whether continuing with the current WAP-AMP is expected to yield further biological improvement. If yes, the watershed group shall continue/update the existing WAP-AMP. If no, the nonpoint source shall revise, obtain the Director's and Ohio DNR endorsement, and implement the revised WAP-AMP. The iterative process shall continue, by evaluating the results of post-implementation monitoring and making AM revisions as appropriate.
- c. Not improving. If the post-implementation monitoring shows that biocriteria are not improving, the Director shall evaluate whether additional nutrient reductions or additional or other AM measures in the WAP-AMP shall materially improve attainment of biocriteria. If not, the local watershed group shall maintain the AM measures that it has implemented, if appropriate, and the Director shall evaluate whether a water quality variance may be warranted or a use attainability analysis may be performed. If additional reductions or AM measures shall materially improve biocriteria, the watershed group shall revise its WAP-AMP, submit it to the Director and Ohio DNR for endorsement, and implement it. The iterative process of maintaining, revising, or terminating AM measures based on the monitoring results shall continue.