

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

**Biological Phosphorus Removal (BPR)-Related Conditions and Exceptions**

1. Subject to 5 below, an effluent limit of 0.5 mg/L Total Phosphorus annual geometric mean, rolling 12-month basis, will be applicable to all major NPDES-permitted waste water facilities (“major POTW’s”) beginning January 1, 2030, unless the major POTW demonstrates that meeting such limit is not feasible in one of the following ways:
  - a. the limit is not technologically feasible through the use of biological phosphorus removal (BPR) at the facility; or
  - b. the limit would result in substantial and widespread economic or social impact; or
  - c. the limit can only be met by addition of phosphorus reducing chemicals into the major POTW’s treatment process in addition to those currently contemplated; or
  - d. the nutrient assessment reduction plan (NARP) for the major POTW’s watershed determines that a lower P limit is necessary and is attainable before 2030; or
  - e. the NARP determines that a lower P limit is necessary and attainable, and imposition of a 0.5 mg/L Total Phosphorus annual geometric mean limit in 2030 would impose costs on the major POTW that are disproportional to any benefit realized from meeting the 0.5 mg/L Total Phosphorus annual geometric mean limit in 2030.

If meeting an effluent limit of 0.5 mg/L Total Phosphorus annual geometric mean is demonstrated not to be feasible in 2030, but is feasible within a longer timeline, then it should be met as soon as it is feasible. If meeting that limit is demonstrated not to be feasible for that POTW, then a limit that is achievable for that POTW (along with associated timeline) would apply instead, except that the limit may not exceed 0.6 mg/L Total Phosphorus annual geometric mean. Should the NARP demonstrate that a limit lower than 0.5 mg/L Total Phosphorus annual geometric mean is necessary and attainable, then the lower limit and timeline identified in the NARP shall apply.

2. These requirements would be included in an effluent standard to be adopted by the PCB; until PCB adoption, they would be included in permits by IEPA as an effluent limitation.
3. BPR is defined herein not to require use of supplemental treatment at the POTW before or after the biological system (e.g., chemical addition, carbon supplementation,

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

fermentation, or filtration). (note: filtration that is installed to meet solids limits, or additional equipment that may be installed to meet other limits, is a separate issue.)

4. The 0.5 mg/l annual geometric mean limit would be applied to the effluent from the treatment plant.
5. The P limit would have to be met by 2030, except in these circumstances:
  - a. If the major POTW develops a written plan, no later than January 1, 2025, to rebuild or replace the secondary treatment components of the facility, then the compliance deadline would be December 31, 2035.
  - b. If the major POTW decides to do biological nutrient removal (BNR), incorporating nitrogen reduction measures, then the compliance deadline would be December 31, 2035.
  - c. If the major POTW decides to use chemical treatment for phosphorus removal instead of BPR, then the compliance deadline would be December 31, 2025, and the POTW would then be subject to the 0.5 mg/l annual geometric mean limit and a 1.0 mg/l monthly arithmetic average limit.
  - d. If the major POTW has already installed chemical treatment for phosphorus removal instead of BPR, and has a 1.0 mg/l monthly average limit in its permit, or the POTW is planning to install chemical treatment with an IEPA construction permit that is issued on or before July 31, 2018, then the 1.0 mg/l monthly average limit (and associated compliance schedule) shall apply, and a 0.5 mg/l limit shall not be required.
  - e. If the major POTW fits into any of the following categories: (1) maintains a paid membership and participates in the DuPage River Salt Creek Workgroup or the Lower DuPage River Watershed Coalition; or (2) it participates in and contributes financially to a watershed group that is developing a NARP for an impairment related to phosphorus or a risk of eutrophication, and IEPA determines that the group has the financial and structural capability to develop the NARP by the deadline specified in the NARP provisions below; or (3) it is covered by the 2017 Settlement Agreement between the Metropolitan Water Reclamation District of Greater Chicago and various environmental groups;<sup>1</sup> or (4) it is covered by the Memorandum of Understanding, executed as of October 5, 2016, between the City of Joliet, Prairie Rivers Network, and the Illinois Chapter of the Sierra Club concerning expansion of the City's Aux Sable

---

<sup>1</sup> Those groups are: NRDC, Friends of the Chicago River, Gulf Restoration Network, the Environmental Law and Policy Center, Sierra Club, and Prairie Rivers Network.

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

Wastewater Treatment Plant; then the BPR-related requirements set forth above will not apply..

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

Phosphorus-related impairments & eutrophication –

Continuation of existing IEPA Permitting practice

1. An interim effluent limit of 1.0 mg/L monthly average (or 1.0 mg/l annual average if that is the current limit in the discharger’s permit) will be applicable to any major POTW that is upstream of a waterbody or segment that has been identified by IEPA to have an impairment related to phosphorus (as defined below), with compliance required as soon as feasible. However, if the POTW is using or planning to use BPR to reduce phosphorus discharges, then the interim effluent limit of 1.0 mg/l monthly average will not apply, and the POTW will instead be subject to the BPR-related conditions set forth above, except that instead of automatically receiving a compliance deadline of 2030, the POTW may receive a shorter compliance deadline that is based on the amount of time needed to install its planned BPR system and bring it into operation.

Nutrient Assessment Reduction Plans

1. The NARP requirements will be included in major POTW permits by IEPA as a method to implement water quality-based requirements; no need for adoption by the PCB in a rulemaking.
2. If a major POTW is located upstream of a waterbody or segment that has been determined by IEPA to have an impairment related to phosphorus or to be at risk of eutrophication, then it will have to develop, or be part of a group that develops, a Nutrient Assessment Reduction Plan (NARP). The NARP must be completed by December 31, 2023.
3. An “impairment related to phosphorus” means that the waterbody or segment is listed by IEPA as impaired due to a DO and/or algae and/or aquatic plant growth problem that is related to excessive phosphorus levels.
4. A waterbody or segment is “at risk of eutrophication” if there is a reasonable suspicion that plant, algal, or cyanobacterial growth is causing or will cause violation of a water quality standard. IEPA will determine if there is a risk of eutrophication using the attached decision chart.
5. The question of how close the impaired segment or the segment at risk of eutrophication must be to the upstream discharger, in order for the impairment or eutrophication to be considered in that facility’s permit, will be determined by IEPA on a case-by-case basis, depending on the characteristics of the relevant waterbody/segment (such as extent of aquatic habitat and nature of the biological

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

- community) and the relevant facility (such as size of discharge flow and nutrient load relative to the stream flow)
6. The POTW would be required to work with other stakeholders in the watershed to determine the most cost-effective means to address the impairment or risk of eutrophication; this can be done using an existing watershed group or by creation of a new group.
  7. The NARP shall identify phosphorus input reductions and other measures necessary to remove relevant DO and offensive condition impairments and the risk of eutrophication and to meet the DO and narrative offensive aquatic algae and aquatic plant criteria.
  8. The NARP shall include a schedule for the implementation of the phosphorus input reductions and other measures. The NARP may determine, based on an assessment of relevant data, that the watershed does not have an impairment related to phosphorus or a risk of eutrophication, in which case phosphorus input reductions or other measures would not be necessary. Alternatively, the NARP could determine that reductions from point sources of phosphorus may not be necessary, or that reductions from both point and nonpoint sources of phosphorus are necessary, or that phosphorus reductions are not necessary and that other measures (besides phosphorus reductions) are necessary.
  9. The NARP shall be supported by data and a sound scientific rationale. Participation by not-for-profit environmental organizations in the creation of NARPs shall be allowed and encouraged.
  10. The NARP can include provisions for water quality trading. Trading cannot result in violations of water quality standards or applicable antidegradation requirements.
  11. In determining the target levels of various parameters that would be needed to address the impairment or risk of eutrophication, the NARP shall either utilize targets recommended by the Nutrient Science Advisory Committee or develop its own watershed-specific target levels.
  12. If other stakeholders in the watershed will not cooperate in developing the NARP, then the POTW would be able to develop the NARP on its own for submittal to IEPA, and would then be in compliance with the NARP development requirement in its permit.
  13. The NARP would be required to be implemented as soon as possible, with the specific timeline being identified in the NARP.
  14. The major POTW shall request permit modification within 90 days after NARP completion to include necessary P reductions identified within the NARP.
  15. If the major POTW discharges directly to the Mississippi or Wabash Rivers, but, as relevant, if the states of Indiana, Iowa or Missouri and the stakeholders in

**PROPOSAL FOR PHOSPHORUS CONDITIONS IN NPDES PERMITS**

Indiana, Iowa or Missouri are not willing to cooperate with IEPA and the Illinois stakeholders in developing a NARP to address the impairment-related conditions, then the POTW would comply with the NARP requirement by cooperating in any multi-state efforts to address the nutrient issues in the waterbody.

16. If the major POTW does not develop, or assist in developing, the NARP, and such a NARP is developed for the watershed, then that POTW would become subject to water quality-based P limits designed to ensure compliance with dissolved oxygen and narrative water quality standards, using the findings of the NARP and other applicable data. If no NARP has been developed, then the water quality-based limits would be determined for the POTW on a case-by-case basis, so as to ensure that the POTW's discharge will not cause or contribute to violations of the dissolved oxygen or narrative water quality standards.