

ILLINOIS EPA UPDATE

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IMPACT OF NUTRIENTS ON LAKES, RIVERS AND STREAMS

- Algal blooms deplete oxygen, block sunlight, may produce toxins, taste/odor problems in drinking water, recreational use impairment
- Hypoxic zone in Gulf of Mexico – 17,300 sq. km – decomposing algae
- Nitrogen → nitrates in drinking water → dangerous for infants

PUBLIC WATER SUPPLIES

- 7 stream/river segments (83 miles) “not supporting” due to nitrate
North Fork, Vermilion River,
Salt Fork, Vermilion River,
Vermilion River (Illinois Basin)
- 3 lakes “not supporting” due to nitrate
Lake Bloomington
Lake Decatur
Lake Vermilion

AQUATIC LIFE USE/AESTHETICS

- Phosphorus is listed as a contributing cause in 35% of impaired stream miles
- Of lake acres deemed impaired for aesthetic use:
 - 82% were impaired in part by total phosphorus
 - 81% were impaired in part by aquatic algae

CURRENT MANAGEMENT APPROACHES - ISSUES

- NPDES permits and TMDL load limits address only municipal and industrial sources
- Management of non-point source pollution – voluntary, incentive-based – no guaranteed reductions
- State and federal cost-share programs for NPS – federal not well-targeted for nutrients
- Collective status of BMP implementation in Illinois not known

CURRENT MANAGEMENT APPROACHES – ISSUES

- Available data indicate over-application of fertilizer/manure not the issue
 - What are the effective BMPs?
 - Need economically viable 3rd crop?
 - Cost to get significant nutrient reduction from agriculture could be billions \$\$
- New/expanding WWTP have 1 mg/L phosphorus limit
 - Only 6.5% currently required to limit P – smaller # removing N

CURRENT MANAGEMENT APPROACHES – ISSUES

- Limit of technology =
 - P 0.1 – 0.5 mg/l
 - N 1 – 3 mg/L
- Collective cost to remove nutrients could be billions \$\$

WHAT OTHER STATES ARE DOING

Establishing numeric water quality standards:

- WI – P standard, varies for different waterbody types
- MN – P standard, lakes only
- FL – federal promulgation, P and N – lakes and flowing waters
- CO – outstanding resource lakes and streams
- MT – varies for different waterbody types
- OH – P and N – affect only waters that are susceptible
- MI – P standard for flowing waters

WHAT OTHER STATES ARE DOING CONT'D

Targets for reduction without numeric WQS for N & P:

- KS – used hypoxia goals to require point source nutrient removal; non-point source implementation through watershed plans
- CT – identified/required optimal nutrient “yield” per acre for urban, agricultural and forested lands assuming optimal BMP implementation
- NC – required nutrient reductions from point and non-point sources through state authorities to meet TMDL goals
- VA – for Chesapeake Bay goals; limit of technology nutrient removal from point sources, baseline agricultural BMPs and promotes voluntary implementation

WHAT USEPA EXPECTS

- Numeric Water Quality Standards!
- May accept an action plan that guarantees reductions from all significant sources
- Gulf Hypoxia Action Plan – state nutrient reduction strategies to get 45% reduction in N & P
- Litigation risk is causing mounting pressure on states/USEPA

PROPOSED STANDARDS VS. ILLINOIS NUTRIENT LEVELS

	P (mg/L)	N (mg/L)
USEPA National Criteria		
- Corn Belt Eco-region	0.076	2.18
- Southeast Forested Eco-region	0.037	0.69
Other States	0.04 – 0.1	1-3
Concentrations in Illinois Streams (mean)	0.38	5.2

ALTERNATIVE NUTRIENT STANDARD CONFIGURATIONS

(Discussed at Stakeholder Meeting February 2008)

- Technology based P effluent limits.
- “Limiting” P concentration (0.05 – 0.08 mg/L)
 - Targeted standard based upon observed biologically driven dissolved-oxygen response.
 - Targeted standard based upon habitat and stream environmental characteristics.
 - Statewide

ALTERNATIVE STANDARD CONFIGURATIONS

No consensus on any one alternative.

- Targets one source, does not address major source.
- Too protective, not needed.
- Not protective enough, too late, reactionary.
- Need statewide standard (USEPA)

WHERE ARE WE NOW?

- USEPA analysis of IL data using statistical methods used in some other states (October 2008)
 - Change-point analysis & Conditional probability
 - Wide range of “endpoint” P concentrations (potential criteria)
 - Lack of strong statistical relationships
- Subsequent review of this methodology by a USEPA SAB acknowledged the value of these analyses, but cautioned that they should not be used in isolation or as a stand-alone determination of criteria.

WHERE ARE WE NOW?

- Subsequent analysis to be performed by USEPA on more recent data (2006-2008).
- USEPA has indicated that they will use data from other states in some phases of the new analyses of IL data
- Specifics of this analysis are being discussed.

COMING SOON

- USEPA will be looking for nitrogen & phosphorus limits in NPDES permits (citing 40 CFR 122.44(d))
- Anti-deg has driven some limits in recent permits
- Presentation from Nutrient Summit September 13-14, 2010 on website
- Nutrient Policy Roundtable on October 14 – identify short-term/long term actions to address nutrients

USEPA SSO/PEAK FLOWS POLICY

- Illinois EPA submitted comments on August 2, 2010
- Highlights:
 - USEPA should clarify requirements for reporting/recordkeeping/public notification e.g. what's high risk
 - IEPA already requires CMOM, but main I/I may be from service line
 - Excess flow primary trt/disinfection adequate for WQ
 - Do not favor individual or general NPDES permits for municipal satellite collection systems
 - Peak flow diversions – prefer pre-2005 approach
 - utility analysis every 5 years too burdensome for all

SANITARY SEWER OVERFLOW (SSO)

- 309 SSO reports already received for CY2010
- SSO reports reviewed – 63 VNs issued in 2010
- Mainly issue a VN when SSO due to
 - lack of maintenance (blockage)
 - employee error
 - power supply problem
 - non-weather causes
- Most accurate information provided in report as to cause and clean up actions taken leads to most appropriate enforcement decision

OTHER STANDARDS ISSUES

Mercury

- Monitoring requirement with USEPA method 1631 for one permit cycle
- Facilities with results ≥ 12 ppt (5 so far) get permit limit
- Newer permits require more frequent sampling

OTHER STANDARDS ISSUES

Zinc

- Still a puzzle why some WWTP w/o industrial stream can't meet chronic WQS
- Most pronounced in No. DuPage Co. – formed “Zinc Consortium”

TIERED AQUATIC LIFE USES

- IEPA has met w/IAWA and contractor – ask questions/raise issues on technical report
- Concurrent meetings between IEPA and IDNR – ongoing – narrowing down the issues
- IEPA supports the concept utilized for tiers
- Want to clearly understand interaction with other programs and sequence of implementation

RADIUM IN SLUDGE

- 1984 MOA – limit of 0.1 picocuries/kg unless DNS/IEMA developed site specific limit
- Joliet – 0.4 pC/kg limit
- IEMA proposed rules in Sept. 2009 for radium in biosolids to be land-applied – 0.4 pC/kg limit
- JCAR objected in Aug. 2010 – sent IEMA back to work with stakeholders
- IEPA continues to put radium limit of 0.4 pC/kg in permits
- Pending permit appeal

ARRA Program

- The ARRA programs are complete, having provided a significant funding boost for Clean Water and Drinking Water infrastructure projects in Illinois.
 - \$177.2 million wastewater
 - \$79.5 million drinking water
 - \$425 million in total assistance (ARRA and WPCLP program funds) for wastewater projects in the FY 2009 funding period

SRF Program

- \$610 million total funding anticipated for wastewater projects (WPCLP) in FY 2010 (\$330 million) and FY 2011 (\$280 million)
- \$210 million total funding anticipated for drinking water projects (PWSLP) in FY 2010 (\$110 million) and FY 2011 (\$100 million)
- FY 2010/2011 funding terms will recognize the continuing economic downturn, offering 1.25% interest rates and principal forgiveness based on income criteria
All principal financed in FY 2010/2011 will be financed at 1.25% simple annual interest

GREEN INFRASTRUCTURE GRANT PROGRAM

- \$5 million available for local gov't and others to implement GI BMPs to control stormwater for WQ protection
- Projects must be in a CSO or MS4 community
- 3 categories:
 - 1) CSO rehab
 - 2) Stormwater Retention & Infiltration
 - 3) Small projects
- Deadline for application: 12/15/10

eDMR Program

- New eDMR program should be available for use by December 2010
- Currently testing phase of the project
- IEPA will be encouraging all facility operators to use this system

DEVELOPMENTS IN THE FPA PROGRAM

- Facility Planning Areas (FPA) have been used by Illinois to implement CWA Section 208 requirements – planning for wastewater service over 20 years
- Unique aspect – by policy, deny service extension permits if cross FPA lines
- Potential permit appeal → discontinue policy

FPA PROGRAM , CONT'D

- Discussions with CMAP SWIMPC , enviros, Homebuilders, IAWA, Dept. of Ag
- Still evaluating what planning elements need to be carried on to meet 208 requirements
- Transition from FPA program to watershed-based planning program