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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

DRAFT ISSUES FOR THE SCIENCE ADVISORY BOARD September 8, 2010

ISSUE
Site-specific factors may mitigate or exacerbate biological responses to excessive nutrients. What are the best state-of-the-art approaches for technically sound and implementable nutrient thresholds/criteria in fresh and coastal waters?
Conduct a peer review of the Site-Specific Impact to Ground Water Soil Remediation Standards (IGWSRS) Framework : Does the framework and associated assumptions and methodology reflect accurate and comprehensive information to guide the Licensed Site Remediation Professional (LSRP) in the evaluation of potential impacts associated with the impact to ground water pathway?
What are the contaminants of emerging concern (in surface water, ground water, air, biota, soil, wastewater & sediment), and what technical (e.g., monitoring, research) steps should DEP take to understand and manage them?
Review the scientific basis of DEP's cumulative risk model and provide technical recommendations to improve the model.
Ecological Mitigation Criteria – examine...and develop acceptable mitigation to offset impacts to natural resources including ecological function and Threatened & Endangered species. (Develop uniform environmental goal for protection of critical wildlife habitat and T&E species.)
Should the DEP research and test new statistical analysis methods with the potential to substantially decrease monitoring costs in the near future?
Development of Health-Based Acute Criteria : Can a framework be developed to establish health-based acute criteria that address appropriate acute toxic endpoints, exposure durations and pathways, and a hierarchy of potential data sources?
Assessment of the Perimeter Air Monitoring Framework for use during hazardous waste site remediation: What is the best approach to establish values to protect off-site receptors that are exposed to volatile and semi-volatile emissions from remedial activities?
What are the needs and scope of a NJ-specific human biomonitoring program? What are the appropriate structures and mechanisms for collecting and interpreting representative biomonitoring data?

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Verify **nitrate dilution models**. What level of nitrates is acceptable in groundwater in order to protect stream water quality and ecological values? Because septic density is based on zoning while the nitrate standard is based on a watershed, can those standards be effectively implemented? Does proximity to a receptor matter? Does it matter from a development standpoint if the land being developed is currently used as agricultural or forested lands?

Review of **Hydroecological Integrity Assessment Process** & Review of the **Stream Low Flow Margin Method**

- Is the link between hydrologic alteration and ecological impacts strong enough to support management decisions that set limits on water withdrawals in order to protect the aquatic ecology? Is it strong enough to allow quantifying allowable withdrawal volumes?
- Is the methodology used to develop available supplies for unconfined groundwater and non regulated surface waters appropriate for use as a planning tool? Are other estimates (e.g. percentages of the low flow 7Q10) appropriate, or can be used in concert, with the Low Flow Method?
- Is it appropriate to determine and apply a statewide average for availability? Would it be more appropriate to consider various thresholds based on region specific hydrogeologic conditions (e.g. coastal plain, highlands, piedmont, etc?)

Demonstration of the efficacy of **alternative disinfectants**, alone and in concert with innovative **high rate solids separating technologies**, and alternative energy generation and storage technologies

How should **water quality** continuous monitoring or modeling results be used to interpret compliance with water quality standards for a particular waterbody? How can continuous **monitoring data** be effectively evaluated and integrated with legacy data?

What is the most effective way to determine the improvement in ambient air quality from requiring non-road **diesel** construction equipment to install **retrofit technology** and how do we quantify the health benefit to the worker and surrounding population (community) from requiring said retrofits?

Is the background data and information assembled by the Air Quality Permitting Program sufficient to support regulating additional **air toxic compounds** as hazardous air pollutants?

Which aspects of **climate change** should be considered at this point to be inevitable, and how should NJ best adapt to these? What additional studies are indicated to assess statewide vulnerabilities to global warming and **sea level rise**, and how can these studies be linked to adaptive land use management practices, open space protection, and resource utilization?

Review the draft protocol for "**Evaluating Green Energy Engineering Systems that Use Alternative Fuels to Reduce Environmental Pollutants and Promote Economic Growth**". *This is a placeholder as Office of Climate and Energy is developing this protocol and expects it to be ready for review within 4 months.*