

**LEGAL, REGULATORY, AND PUBLIC POLICY ISSUES RELATING TO AN
EFFLUENT TRADING PROGRAM FOR TOTAL PHOSPHORUS FOR THE
NON-TIDAL PASSAIC RIVER WATERSHED**

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At the outset of this three-year research project, the following legal, regulatory, and public policy issues are presented as potential challenges to designing and implementing an effective, economically efficient, equitable, and environmentally protective effluent trading program for total phosphorus for the non-tidal Passaic River watershed. None of these challenges is insurmountable. Upon further study, some of these issues may be dismissed as inapplicable or trivial; while other issues may emerge as significant ingredients of program design and implementation. This presentation, like most of those delivered today, is part of continuing, multi-disciplinary research work that will evolve over the next three years.

- **Achieving Environmental Justice.** The “equity” criterion of public policy evaluation requires that whatever trading system we design be sensitive to the situations of low-income and minority households, and that “disparate impacts” on these households be minimized. Trading total phosphorus credits in the non-tidal Passaic River watershed will primarily involve trades among publicly-owned wastewater and stormwater treatment systems. The National Association of Clean Water Agencies (“NACWA”) has recently published a white paper entitled “Financial Capability and Affordability in Wet Weather Negotiations” (November 2, 2005). In this document, NACWA asked EPA to consider the impact of new sewer overflow regulations on sewer rates and the ability of low-income households to afford them. NACWA especially noted that EPA does not currently account for low-income households and their inability to pay escalating sewer rates when assessing a wastewater utility’s financial affordability to make capital improvements or employ best management practices at a treatment plant. EPA’s response to this white paper was to assure the public that the Agency is studying ways to factor affordability into all its CWA determinations. Effluent trading can reduce “disparate impacts” on disadvantaged communities (e.g., by reducing overall costs of wastewater treatment), but an improperly designed trading system might also exacerbate such impacts by creating “hot spots” or encouraging unfair trades between affluent and disadvantaged communities. The Project Staff’s recommendation to avoid hot spots by, among other devices, limiting trades to upstream only and penalizing trading outside subwatersheds should be carefully studied. Another potential environmental justice consequence of effluent trading might be the trading system’s impact on future economic growth in both affluent

and disadvantaged trading areas. How will a trading system accommodate potential future growth that might cause TP discharges? Will a system of “offsets,” as found in the Clean Air Act, be desirable? Finally, how can federal and state subsidies be utilized to mitigate disparate impacts?

- **Trading Discharges and Withdrawals?** The non-tidal Passaic is a complex hydrological and hydraulic system that is characterized by both numerous POTW and MS4 discharges and also by large PWS withdrawals, some of which are pumped to other locations in the watershed. In some instances, it might be more effective and efficient to either impose stricter treatment requirements on PWSs or else to relocate withdrawal locations instead of imposing more stringent effluent limitations or BMPs on POTWs and MS4s. But withdrawals are not “discharges” under the CWA, and thus a PWS does not require a NJPDES permit for a diversion. However, a State diversion permit is required. Can discharge and diversion permits be coordinated so as to authorize trading of discharges and withdrawals? Coordination of permits would also be helpful in developing a “direct trading for water treatment” structure for trading (see Program Staff, “Update on the Passaic Trading Project,” p. 5). Moreover, PWSs now require NJPDES permits for backwash discharges; thus, there is precedent for giving NJPDES permits to PWSs.
- **Opportunities for Adaptive Management.** Because of the scientific uncertainties inherent in ascertaining and predicting water quality, each TMDL must include a Margin of Safety (MOS). One element of a MOS might be an adaptive management framework, whereby TMDL design and implementation is phased so that data derived during implementation of early phases can be factored into the design and implementation of later ones. However, a legally enforceable system of effluent limitations requires that permits include firm legal responsibilities as well as fixed targets and lead times for compliance. How should we reconcile the desirability of adaptive management with the legal and regulatory stigma on “moving targets?” The duration of TP credits generated by trading will affect opportunities for adaptive management within the context of an effluent trading program. One means of performing adaptive management, as well as allowing for gradual compliance with clear mandates, would be to adopt a declining, phased-in cap on phosphorus discharges in the basin.
- **Achieving Public Participation.** What should be the elements of a public participation program that will assure broad stakeholder involvement as early and effectively as possible without unnecessarily delaying the design and implementation of the trading system? Who will define and administer public participation? The study team? Regulatory agencies? A trading association?

- **What (Where) is the Receiving Water, and How Clean Must It Be?**
Wasteload allocations (“WLAs”) are determined with regard to receiving water quality measured outside particular “mixing zones.” Some POTWs and MS4s may be located on “C1” stretches, which will require the imposition of water quality standards based on antidegradation. How should extraordinary receiving water quality, if relevant, be factored into design and implementation of a trading system? Are mixing zones appropriate for TP? For high quality stretches? If so, how should they be set? Can a mixing zone be enlarged in order to change the receiving water (e.g., from a tributary to the main stem)? Would there be negative environmental protection or environmental justice impacts of large mixing zones?
- **Viability of MS4 trades.** Theoretically, MS4s might be included within the ambit of a TP effluent trading program. But the New Jersey regulatory program for MS4s is in its infancy: (1) many municipalities have not mapped their MS4s; (2) institutions at several levels – e.g., municipalities, counties, independent authorities, the State – manage MS4s; and (3) some of these institutions have installed BMPs to control pollution from MS4 discharges, while others have not. Is TP effluent trading among MS4s viable under these circumstances?
- **Trading unused POTW capacity.** Most POTWs are permitted to discharge at design flows, whereas current discharges are at lower flows because of unused treatment capacity. Would it be feasible to trade unused capacity? How would such trades affect future growth in the trading areas (see previous discussion of environmental justice).
- **Implications of recent Highlands legislation.** The New Jersey legislature has recently enacted legislation establishing a Highlands District, which encompasses some or all of the non-tidal Passaic River watershed. Within this district, a Highlands Commission will develop a master plan, control land use, and establish a development rights transfer system. Waterbodies within the Highlands District will receive enhanced regulatory attention. What are the implications of the Highlands legislation for a trading program in the non-tidal Passaic watershed?
- **Trading sewage sludge treatment and disposal capacity?** Some TP, or chemicals added to remove TP, may be found in sewage sludge at the end of the municipal wastewater treatment process. Would it be possible to trade sewage sludge treatment or disposal capacity (e.g., incineration capacity)?
- **Is the cure worse than...?** One method of removing TP during the municipal wastewater treatment process is to add alum, which would result in the discharge

of aluminum by the POTW and the potential intake of aluminum by downstream PWS diversions. Some studies have linked aluminum in drinking water to neurological problems. In terms of public health, would it be preferable to maintain TP at current levels instead of raising ambient levels of aluminum, which might be more dangerous when diverted for public water supply? What are the ecological impacts of ambient aluminum? From an economic standpoint, would disposal of sludge containing aluminum be prohibitively expensive? Are there feasible alternatives to the addition of aluminum that would not raise other environmental problems?

- **Legal Authority for POTW and MS4 Trades.** Attorneys for a utilities authority or governmental agency should carefully examine its legal framework in order to determine whether the authority/agency is authorized to participate in effluent trades and how such trades must be approved.
- **The Permitting Structure of a Trading System.** What is the optimum permitting system to facilitate a TP effluent trading arrangement among point sources in the non-tidal Passaic watershed? The Project Staff recommends a model featuring a trading association holding a watershed-based permit. This option should be carefully examined.