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United States Environmental Protection Agency
EPA Docket Center
Mail Code: 2822T
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Washington, DC 20460

Attention: Docket ID No. EPA-HQ-OA-2011-0156

Subject: Improving Regulations Docket – EPA Retrospective Review Plan

To Whom It May Concern:

The Metropolitan Water Reclamation District of Greater Chicago (District) appreciates the opportunity to offer comments regarding the United States Environmental Protection Agency's (EPA) periodic, retrospective review of existing regulations under Executive Order 13563 (76 Fed. Reg. 9988 (February 23, 2011)). The District commends the EPA's active solicitation of public comments to design a plan for reviewing existing regulations that will ensure the most effective and least burdensome plan for achieving regulatory objectives, and also for providing the District an opportunity to provide input on its specific considerations.

The District is one of the largest unified metropolitan sewerage and stormwater control districts in the world, providing public infrastructure for over 5 million people of northeastern Illinois. The District is an independent government and taxing body operating within the boundaries of Cook County, Illinois. The agency serves an area of 883.6 square miles, including Chicago and 128 suburban communities. Every day, the District reclaims an average of 1.4 billion gallons of wastewater, with a total treatment capacity of over 2.0 billion gallons. Wastewater is collected from municipalities by the District and conveyed to one of its seven reclamation plants for full treatment. The District's commitment to the environmental quality of the region involves protecting Lake Michigan from pollution and maintaining public health and safety, protecting homes and businesses from flooding, and preserving water as a vital resource.

All District funds, with the exception of the Capital Improvements Bond Fund, derive their revenues primarily from property taxes. Approximately \$467.6 million of the 2011 appropriation is supported by property taxes. The District's Capital Improvements program is

financed primarily with general obligation bond sales. Over the last century, the District's taxpayers have invested \$24.6 billion in present day dollars to construct interceptors, tunnels, treatment plants, and other necessary infrastructure. Future infrastructure projects for the treatment process at each plant have a total construction cost estimate of approximately \$2.1 billion, consuming the District's entire available non-referendum debt capacity through the sunset of the District's statutory bonding authority in 2024.

As seen by the sheer magnitude of the above investments, the District believes the Administration's review of its existing practices to achieve regulatory objectives is timely and critical. Unfunded mandates and consent orders often imposed by the EPA on publicly owned treatment works (POTWs) seek compliance with specific regulatory requirements without regard for a project's comparative public health benefits, competing water system priorities, vying environmental concerns, and most importantly, the impacts on taxpayers. The District believes that the EPA is obliged to assist agencies with regulatory compliance rather than focusing only on enforcement, particularly where many significant sources of runoff and other waterway degradation (i.e. the agricultural community) remain largely unregulated. POTWs and other permitted agencies should not bear the costs of regulation alone. They need a true partner in the federal government, particularly the EPA. It is the District's hope that a meaningful comprehensive "regulatory" review will be the first step toward achieving such a partnership.

Recommendations for Plan of Regulatory Review

The District concurs with many of the suggestions and recommendations that the New York City Department of Environmental Protection (DEP) listed in its March 18, 2011 letter to the EPA. The District especially supports the following DEP recommendations:

- Page 2 of DEP Letter. "The EPA should undertake a comprehensive review of all administrative actions – not just final regulations, but baseline studies, preliminary determinations, guidance, policy statements, enforcement policy, and enforcement actions – to better align the hundreds of billions of dollars of water and wastewater investments that cities have been and will be required to make, with the most pressing public health, environmental, and economic needs. While rules themselves are clearly important, in many cases where and how EPA chooses to enforce a particular rule can be the real cost driver behind a particular mandate. For example, the EPA's apparent policy to seek compliance with its CSO policy through its Office of Enforcement and Compliance Assistance and to pursue judicial consent orders in all cases as part of its CSO enforcement strategy drives up compliance costs and results in inefficient capital allocations to meet public needs."
- Pages 4 and 5 of DEP Letter. "The EPA should broaden the scope of its review beyond the minimum requirement to examine promulgated regulations to include the full array of administrative actions that can impose "significant" costs by any measure. These Agency tools include formal and informal agency guidance (which are often applied as if they were promulgated rules), policy statements and memoranda to states, permit writers, and regulated entities, and enforcement actions and strategies. If the scope of the review is not broadened, very significant actions such as multi-billion dollar enforcement actions

for combined sewer overflows (CSOs) or sanitary sewer overflows would not fall within the scope of the review, as neither the Agency's CSO Policy nor the recent "capacity, management, operations and maintenance" policy has been adopted as a regulation (but is often treated as such). Another example is a recent memorandum from EPA headquarters to its regional offices that changed the Agency's policy for establishing Total Maximum Daily Load waste load allocations from municipal sources from best management practices to numeric effluent limits, which would impose significant costs without having documented or quantified countervailing benefits, if any, and without the input of the regulated community. Retrospective agency review of such actions is especially important because in many cases they are not subject to public or judicial review until incorporated into permits.

Similar loopholes have been noted in connection with other reform efforts such as the Unfunded Mandates Reform Act and the Regulatory Flexibility Act, which apply to an even narrower set of rules for which an agency publishes a notice of proposed rulemaking, thus excluding half of all final regulatory actions that federal agencies published without going through the proposed rule stage because of good cause, categorical, or statute-specific exceptions to the Administrative Procedure Act's notice and comment requirements. Given the burdens imposed by non-rule Agency actions, these comments propose a broader scope of review, identify several specific non-rule actions as candidates for review, and use the term "rule" to refer to the full range of agency actions that can impose significant requirements on the regulated community. DEP believes that an expanded scope would better carry out the goals and intent of Executive Orders 13563 and 12866."

- Page 5 of DEP Letter. "The EPA should use the review process as an opportunity to re-evaluate all aspects of environmental management that occur after the development of rules, including both the Agency's and regulated entities' implementation of rules, monitoring of compliance, and methods of enforcement."
- Page 5 of DEP Letter. "The Agency should integrate this regulatory review effort with core strategic documents such as its strategic plan, clean water strategy, and enforcement agenda, and undertake a holistic ranking of priorities across all media. Otherwise, programs will persist in "silos" with little coordination and thus little consideration of overall public health and environmental risks, overall benefits and costs, and the cumulative regulatory burden on regulated entities and regulatory authorities. Both Executive Order 12866 and 13563 affirm that federal agencies are to seek the "least burden on society ... [after considering] the costs of cumulative regulations." A cross-media and cumulative effects assessment will help to ensure that EPA achieves this fundamental goal."

Existing Actions that Should be a Top Priority for Retrospective Review

The following EPA actions should be among the top priorities to review for compliance with the cost-benefit and sound science principles set forth in Executive Order 12866 and affirmed in Executive Order 13563.

Combined Sewer Overflow (CSO) Policy and Enforcement

Why the regulation should be modified, streamlined, expanded, or repealed: The District concurs with DEP's response on pages 11 and 12 of its March 18, 2011 letter. The District would like to further emphasize the EPA's interpretation of the CSO Policy. The EPA is mandating via consent orders that long term control plans (LTCP) for CSO control meet more stringent water quality standards (achieve "fishable/swimmable") regardless of current waterbody classifications (ignoring the phrase "where attainable" in the Clean Water Act). The EPA may be overemphasizing CSOs as a source of impairment and should consider other sources of waterway impairment such as stormwater outfalls, preexisting sediment, and nonpoint sources. Prior to negotiating consent orders, the EPA should scientifically investigate if the proposed stringent water quality standards are even achievable. Agencies are spending billions of dollars on CSO control infrastructure that may not achieve the EPA's mandated water quality.

Supporting data and other information: The District's approved LTCP for addressing CSOs in the most cost effective manner is the Tunnel and Reservoir Plan (TARP). The inception of TARP began in the late 1960's and early 1970's, prior to the establishment of the Clean Water Act and ultimately the EPA. TARP is one of the country's largest public works projects for pollution and flood control. TARP consists of four systems totaling 109.4 miles of tunnels, 9 to 33 feet in diameter and 150 to 300 feet underground, and three large surface storage reservoirs.

Phase I, the tunnels, were completed in 2006 and can capture up to 2.3 billion gallons of the first flush of sewage from the combined sewers that previously flowed into the area waterways. The District has spent approximately \$2.3 billion to construct the Phase I tunnels. These tunnels have captured well over 1 trillion gallons of CSO volume since the first tunnels went into operation in the early 1980s.

Phase II, the reservoirs, will provide additional storage of CSOs for flood damage protection and additional pollution control. The Gloria Alitto Majewski Reservoir, built by the United States Army Corps of Engineers with the District as a local sponsor, was constructed for \$45 million and provides 350 million gallons of storage. Since it was completed in 1998, it has been used during 40 storms, storing in aggregate 3.9 billion gallons of flood waters and yielding \$207 million flood damage reduction benefits. Phase II of TARP continues with the design and construction of the McCook (10.0 billion gallons) and Thornton (7.9 billion gallons) Reservoirs. The TARP reservoirs will greatly increase the volume available for capturing CSOs. Storage capacity of the TARP system will be approximately 17.5 billion gallons when fully completed. The total cost for Phase II of TARP is approximately \$1.3 billion.

As can be seen above, the District is continuing with its obligation to complete its approved LTCP, with approximately \$3.3 billion of the total \$3.6 billion investment already completed or under construction, yet the EPA interprets the CSO Policy as requiring entry of a consent decree for CSO control.

Alternative methods of achieving the regulatory program's objective: The District concurs with the DEP's response on page 13 of its March 18, 2011 letter.

Separately Sewered Overflows (SSOs) Enforcement, Satellite Collection Systems, and the "Capacity, Management, Operations, and Maintenance" (CMOM) Policy

Why the regulation should be modified, streamlined, expanded, or repealed: The District by and large concurs with the DEP's comments on pages 13, 14, and 19 of its March 18, 2011 letter. The District strongly agrees with the National Association of Clean Water Agencies (NACWA) that the EPA must develop a nationally consistent definition of an SSO that addresses sanitary sewer collection systems that are not a part of the POTW. It also strongly agrees and stresses that a zero-discharge standard for SSOs is inappropriate and that any final regulation should protect system owners and operators from enforcement actions or lawsuits if an overflow is beyond their reasonable control.

The District firmly believes that satellite sanitary sewer systems must be subject to the Clean Water Act/NPDES permit program with permits issued directly to satellite system owners, and further that the regional POTW owner should not be included as a co-permittee. Though some other commenting groups recommend a watershed permitting approach with regional POTW owners and satellite system owners being co-permittees, the District believes that satellite system owners will be less responsive and accountable if they are merely co-permittee with the regional POTW owner, rather than if they had individual permits with direct requirements and responsibilities set forth by the state and EPA. The EPA's notice in a prior Federal Register (Docket ID No. EPA-HQ-OW-2010-0464) refers to how investment in satellite collection systems typically lags in comparison to that of regional collection systems owned by POTWs because the satellite system owners lack the responsibility for addressing downstream problems. In the same way, a co-permittee type of arrangement may subjectively reduce satellite system owners' sense of responsibility and could encourage them to rely on the regional POTWs to act. Such separation of permitting would not, and should not, preclude regional-satellite collaboration where benefits are identified. The permitting of satellite systems must include a certification by the regional POTW that conveyance and treatment capacity is available. Institution of permits on satellite system owners independently will work to achieve the stated goals of Executive Order 13563 of fostering predictability and reducing uncertainty.

Additionally, the EPA should expand current policy to ensure that collection system owners are subject to sewer CMOM requirements. To save taxpayers and/or users the perpetual cost of treating clean water, satellite sewer owners must be bound to groundwater infiltration and stormwater inflow (I/I) rate limits based on the physical capacity of the regional collection and treatment facilities where sufficient capacity has been provided in accordance with sound engineering standards for sanitary sewer systems. After constructing sanitary sewer systems that have limited physical capacity based on proven design standards which allow for some groundwater and no stormwater infiltration, subsequent I/I accommodation should not be determined based on a cost-effectiveness analysis methodology that factors in only I/I removal/correction, conveyance and treatment costs. This type of methodology fails to account for significant real and intangible cost factors of I/I-induced SSOs and basement sewage backups including property damages, owner/resident inconvenience, clean-up costs, lost work-time, public health hazards, regulatory agency penalties and fines, negative public relations, beach closures, waterway pollution, etc. Omission of such cost considerations only drives the "acceptability" of leaving more I/I in a sewer system which has little or no existing physical

capacity to handle it. Impacts on environmental, energy, flooding and social factors must be included in the permitting process and regulations.

The EPA rules must recognize that the private sector I/I sources also aggravate the SSO problem (i.e. building and service lines) and, therefore must be addressed. The "private sector" sewer system portion of the overall satellite system very well may have a total length equal to or larger than the public sector portion of the overall sanitary sewer system. Due to aging/deteriorated/defective sewer service laterals and illegal/improper connection of building foundation, roof, window-well, driveway and yard drains, private sector sewers may yield more extraneous flow (up to 75 to 80% of total I/I) than the public sector system. Additionally, there are instances where post-sewer rehabilitation wet weather flow rates have been reported to be higher than pre-rehabilitation rates (due to "migration"). In cases such as these, public sewer lining and/or repairs result in rising water table levels with the groundwater ultimately migrating its way into unaddressed defective private service sewer lines.

Further, the District requests more precise use of the term "design storm" in discussing sanitary sewer systems, to eliminate a confusing mixed message. While the District understands that when describing wet weather flows a reference storm or some other metric must often be utilized, the term "design storm" should be reserved only for the sizing of storm sewers and combined sewers. Since sanitary sewer design usually allows for some level of unavoidable groundwater infiltration, the EPA should make it clear that stormwater does not belong in and is not to be "designed" for in a sanitary sewer.

The District agrees that the EPA should clarify its standard permit conditions for SSO reporting, recordkeeping and public notification, so as to be consistent and reasonable, with reporting and notification directly tied to public health protection. It appears that many SSOs are not reported to the proper regulating agencies. The District believes that the responsibility of monitoring and reporting SSOs within satellite sewer systems should rest with the satellite municipality since the municipality possesses the most in-depth knowledge of its collection system.

The EPA repeatedly refers to "municipal" satellite sewer systems in its rulemaking and related information. The EPA must ensure that by definition all SSO rules must apply to all significant sanitary sewer systems, whether owned/operated by a municipality or other form of government, or by private utility companies.

As a final point, the issues of SSOs and blending should not be considered as the same. In fact, restricting blending could lead to increased SSOs. Treatment facilities currently divert flows around certain processes to achieve hydraulic capacity during wet weather, including tertiary filtering. Requiring all flows to receive full biological treatment even though it can be shown that blended effluents still meet all NPDES limits will either force facilities to restrict their maximum treatment capacity (causing more frequent SSOs) or cause a facility to risk solids wash-out hindering operational capacity for subsequent storms.

Supporting data and other information: Similar to the experiences listed by the DEP on pages 19 and 20 of its March 18, 2011 letter, the District also experiences problematic high flows from separate sewer areas at its treatment plants and intermediate pump stations. Two of the Districts

wastewater treatment plants, which serve only separate sewer areas, see flows that can be anywhere between 2 and 5 times the average dry weather flow during wet weather events. Additionally, extraneous I/I from these separate sewer areas have caused SSOs from District-owned pump stations, which resulted in the issuance of violation notices by the Illinois EPA.

The District attempted to implement an I/I control program on its satellite agencies in the late 1980's and early 1990's; however due to the lack of regulatory support and funding, the program was relatively unsuccessful.

Alternative methods of achieving the regulatory program's objective: The District concurs with the DEP's response on pages 15 and 20 of its March 18, 2011 letter. The District would like to further stress that many satellite sewer system owners avoid taking actions to address private sector I/I sources due to concerns over related political, legal, and access rights associated with doing so. A regulatory requirement on satellite sewer system owners may help regional agencies such as the District in controlling excessive I/I.

Water Quality Standards

The District would like to reemphasize its comments in regard to Case No. R2008-009 - In The Matter of: Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System (CAWS) and the Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303 and 304 (R08-09), proposed by the Illinois EPA that is currently in administrative hearing before the Illinois Pollution Control Board (IPCB). The below comments summarize two key issues relevant to the proposal and the EPA's comments regarding the rulemaking.

Disinfection of Secondary Effluent for Non-Primary Contact Recreation

The District is aware of current efforts by the EPA to reassess certain primary contact recreational water quality criteria for pathogens as required by the BEACH Act and has conducted epidemiological studies to inform these efforts. The District also understands that the EPA expressly avoided developing pathogen standards for recreational uses other than primary contact.

R08-09, if promulgated, will require effluent disinfection for the District's three largest water reclamation plants (WRPs) (35 Ill. Adm. Code Part 304.224), although the proposed uses of the CAWS do not include primary contact recreation and there are no proposed water quality standards (WQS) for indicator bacteria. At issue with the proposed disinfection requirement is the interest in protecting public health for the individuals involved in secondary contact recreation (canoeing, sculling, etc.)

In the absence of WQS and in order to better inform the need for the requirement, the District collaborated with Geosyntec Consultants and others and conducted a study titled "Dry and Wet Weather Risk Assessment of Human Health Impacts of Disinfection Vs. No Disinfection of the Chicago Area Waterway System" (risk assessment.) The results of the study indicated that even during wet weather, the risk of illness to people involved in typically observed recreation on the CAWS was very low. A key finding in this study was that although secondary-treated effluent

has elevated concentrations of indicator bacteria, the concentration of pathogens is quite low. The results of the microbial profiles of the CAWS have been published in *Water Science and Technology*, a peer-reviewed journal (Rijal, et al., 2009.)

In order to verify the results of the risk assessment, the District funded a study conducted by researchers at the University of Illinois at Chicago titled the “Chicago Health Environmental Exposure and Recreation Study” (CHEERS). This is the first epidemiological study of the health risks of fishing, boating, rowing and paddling in the CAWS. The CHEERS Study design was developed by a multi-disciplinary team of experienced researchers, with backgrounds in infectious disease medicine, environmental medicine, epidemiology, biostatistics, industrial hygiene and environmental science. A panel of recognized leaders in the fields of water microbiology and health from the U.S. Centers for Disease Control and Prevention, several universities, including two representatives from EPA reviewed and endorsed the designs and protocols of the research, and monitored the quality of the data collected and its analysis and interpretation.

The CHEERS Study was designed to investigate the occurrence of illness associated with secondary contact recreation on the CAWS; the study has presented three key findings. The first objective was to determine the rates of acute gastrointestinal and non-gastrointestinal illness attributable to CAWS recreation. The second objective was to identify pathogens responsible for acute infections among recreators, and to explore sources of those pathogens on the CAWS. The third objective was to characterize the relationship between concentrations of microbes in the CAWS and rates of illness among recreators.

With respect to the first specific aim of the CHEERS Study, the study concluded that rates of gastrointestinal illness are not higher among CAWS recreators as compared to recreators doing the same activities on general use waters that do not receive undisinfected wastewater treatment plant effluent. About 12-13 cases of gastrointestinal illness per 1,000 uses can be attributed to limited contact recreation on the CAWS. This rate is statistically indistinguishable from the rate of gastrointestinal illness attributable to limited contact recreation on general use waters. After taking into account differences among the groups, the CHEERS Study found that the odds of developing acute gastrointestinal illness were 41% higher in the CAWS group as compared to the unexposed group. However, the odds were 44% higher in the general use waters group as compared to the unexposed group.

Although the CHEERS Study did find a significantly different incidence of eye symptoms among CAWS recreators than those on general use waters, the symptoms reportedly were very minor in most cases, generally not requiring any medication or requiring only the use of over the-counter medications. The study could not discern whether the eye symptoms were the result of infection, chemical irritation, or allergic reaction. The incidence of more severe eye symptom that did require medical attention, prescription medication, or hospitalization, occurred more frequently in the general use waters or unexposed group than the CAWS. Finally, the CHEERS Study found that there is no difference among recreators on the CAWS, recreators on the general use waters, and the unexposed group for respiratory, skin and ear symptoms.

With respect to the third aim of the CHEERS Study, pathogens responsible for illness, the vast majority of pathogens identified from stool samples from study participants in all of the study groups with gastrointestinal symptoms were viruses. Pathogens that often result in severe water borne disease were not identified in stool samples. There was no suggestion that water recreation, CAWS use, or water ingestion was associated with gastrointestinal illness.

The CHEERS Study also contains information concerning development of a relationship between microbial water quality parameters and the incidence of illness for recreational uses proposed for the CAWS, which will eventually be needed to develop scientifically-based bacterial water quality standards for the CAWS. The CHEERS Study makes it clear that disinfection is not necessary for the District's wastewater treatment plant effluent discharged into the CAWS. The risk to recreators in the CAWS, where effluents are not disinfected, are no greater than the risks to recreators in other nearby waters where effluents are disinfected or where no effluent is discharged. The District has concluded that disinfection will not provide a public health benefit.

The total costs associated with disinfection are extraordinary, particularly considering the lack of benefit. For example, installation and operation of UV disinfection technology, which currently represents the most likely choice for implementation at the District's three large plants, is estimated at a 20-year total present worth cost of \$919.6 million. Chlorination/dechlorination would result in similar costs to the District. Based upon the District's limitations and restrictions on generating revenues to fund programs, funding such an expenditure would require legislative action, a voter referendum, or significantly reducing funding of the District's existing capital improvement plan which is designed to maintain and upgrade the District's aging infrastructure.

Finally, effluent disinfection would result in substantial environmental impacts in the form of energy usage, air emissions from power generation and transportation of raw and waste materials, and land usage. These environmental impacts must be weighed when considering the appropriateness of disinfection requirements.

By letter dated December 27, 2010, the EPA provided comments on the CHEERS Study that were submitted as part of the R08-09 docket. The most notable comment in the EPA letter is that the CHEERS Study's reported rate of gastrointestinal (GI) illness for CAWS recreators of 13 illnesses/1,000 recreators exceeds the EPA's **recommendation** of 8-10 illnesses/1,000 recreators. The EPA then dismissed the key study finding: CAWS and area General Use water (GUW) recreators have statistically indistinguishable rates of GI illness because the results "suggest that the GUW waters are impacted by fecal contamination." The EPA's suggestion is part of the District's contention that disinfection will not result in a measurable water quality improvement. If GUW are impacted by fecal contamination and they only receive effluent that is disinfected, disinfection of the CAWS will not yield a measurable public health benefit.

Further, the EPA should consider that in most countries of western Europe, wastewater disinfection is practiced only at facilities where effluent discharge is to a public swimming area, or where other opportunities for direct human contact are likely (e.g., shellfish breeding grounds). Despite the fact that effluent disinfection is uncommon in Europe, the incidence of diseases associated with waterborne pathogens among the residents of these countries does not

appear to be substantially different than in the U.S. The District strongly recommends that the EPA revisit the issue of setting effluent limits for indicator bacteria where there are no proposed WQS. To comply with Executive Order 13563's direction that regulations be based on sound science, effective regulatory review would require that peer reviewed scientific studies, such as the CHEERS study, to be uniformly reviewed and acknowledged. Under those circumstances, the EPA would embrace the results of the CHEERS study and rescind the requirement that wastewater agencies disinfect secondary-treated effluent where discharge is not adjacent to primary contact recreation.

Dissolved Oxygen Water Quality Standards

R08-09 also establishes more stringent dissolved oxygen (DO) WQS for a number of reaches of the CAWS; it establishes "Warm Water Aquatic Life Use A" and "Warm Water Aquatic Life Use B" DO standards for different portions of the waterway.

The Illinois EPA has acknowledged in the administrative process that the ecological community in the CAWS is substantially impaired by poor habitat. The EPA has established a DO criterion of 3.0 mg/L for full attainment of warm water life uses. The IEPA indicated that it does not expect Aquatic Life Use A waters to meet the Clean Water Act goals, but has proposed that both A and B waters achieve DO levels of at least 3.5 mg/L - even higher than would be required by the EPA. Further, the IEPA has proposed a DO standard for Aquatic Life Use A of 5.0 mg/L for March through July to support early life stages, with no evidence that the habitat and physical characteristics of the CAWS could support such a use or attain the proposed criterion. Essentially, the R08-09 is requiring that the degraded CAWS meet in certain critical aspects the General Use DO WQS.

The District has collaborated with a team of scientists and engineers to use a computer model of the CAWS in order to establish an integrated strategy to comply with the proposed DO WQS. The District estimates that to meet the standards proposed in R08-09, the District would have to construct 28 supplemental aeration stations and provide aerated flow augmentation for portions of the waterway at a cost of roughly \$670 million, 20-year total present worth.

Complying with the proposed DO WQS would also result in substantial environmental impacts in the form of energy usage, air emissions from power generation, and land usage. These environmental impacts must be weighed when considering the appropriateness of DO standards.

During administrative hearings for R08-09, the IEPA testimony on April 24, 2008 included discussion that the justification for the selected DO criteria was to protect early life stages of the target fish species smallmouth bass and channel catfish. "For early life stages that are as sensitive as the early life stages of channel catfish or smallmouth bass, we need to keep the dissolved oxygen levels above a daily minimum of five in order to protect for those types of early life stages." (Roy Smogor, page 99 of April 24th hearing transcript). Consideration should then be given to whether the CAWS offers suitable habitat for early life stages of these fish species.

In order to understand the biological potential of the CAWS, the District commissioned LimnoTech, Inc., to conduct a habitat assessment of the CAWS. The CAWS Habitat Study was

a thorough and data-intensive examination of the relationships between fish, physical habitat, and water quality in the CAWS. The CAWS Habitat Study used eight years of fisheries, water quality, and physical habitat data collected by the District, as well as new data collected specifically for the study. These data were evaluated using analytical methods appropriate for this type of ecological evaluation. The CAWS Habitat Study produced several significant findings regarding physical habitat in the CAWS, its relative importance to fish, and the potential for improving fisheries in the CAWS. The following key findings were submitted as testimony by Mr. Scott Bell, LimnoTech, Inc., for the administrative hearings:

- Aquatic habitat is inherently limited in the CAWS by the system's form and function. Habitat in the CAWS is significantly limited by the design of the CAWS, most of which is manmade. The manmade reaches of the CAWS were built to support wastewater effluent conveyance and commercial navigation. The reaches that were once natural streams have been heavily modified to serve these purposes and the changes are unlikely to be reversed as long as the CAWS needs to serve these functions. The form and uses of the CAWS impose severe limitations on physical habitat in the system.
- Physical habitat is more important to fish in the CAWS than dissolved oxygen. When key physical habitat variables and dissolved oxygen metrics are statistically compared to fish data collected between 2001 and 2008 in the CAWS, it is apparent that habitat is much more important to fish than dissolved oxygen. Multiple linear regression shows that the dominant habitat variables identified in this study had an r-squared of 0.48 with fish, indicating that these habitat variables explain as much as 48%, or about half, of the variability in the fish data.
- The ability of physical habitat to explain about half of the variability in fish data is excellent, considering the natural variability in the fish data itself. As stated above, about half of the variability in fish data in the CAWS is explained by physical habitat, in particular certain key habitat variables identified in this study. Of the half of fish data variability not explained by the key habitat variables, most is explainable by natural variation in the fish data from one sampling event to another at each location. In other words, fish samples exhibit large temporal variability at any given location in the CAWS and when the portion of fish data variability not explained by habitat is statistically analyzed, it is most related to the variation at sampling locations over time, independent of habitat changes.
- Dissolved oxygen is relatively poor at explaining variability in fish data in the CAWS. Dissolved oxygen does not, for the most part, have a statistically significant relationship with fish in the CAWS. Various measures of dissolved oxygen were tested, including compliance with existing and proposed water quality standards, average and minimum DO, and percent of time below various DO concentration thresholds. The strongest relationship identified between any of these metrics and the combined fish metric had an r-squared value of 0.27, which is about half as good as the key habitat variables identified in this study. The other four DO measures tested had r-squared values ranging from 0.02 to 0.08. This indicates that physical habitat, not water quality, is the most limiting factor for fish in the CAWS today.

- There is limited potential for physical habitat improvement in the CAWS and potential changes might not result in measureable improvements to fisheries. Only a limited number of the primary habitat impairments in the CAWS, identified in this Study, have improvement potential. Reach-wide improvement of the primary habitat impairments that can be improved would result in habitat index score increases between 0 and 13 points (from zero to 38% increase). These potential improvements do not significantly alter the relative habitat index scoring of the CAWS reaches. There are indications that it may be difficult to measure significant improvements in fisheries as a result of the habitat improvements, even if they can be implemented. The estimated cost of the habitat improvements described in this report is more than \$460 million system-wide and this estimate is likely low as it does not include costs for land acquisition, demolition of existing structures, removal or relocation of utilities and infrastructure, or potential environmental cleanup costs associated with excavation next to the CAWS.

In response to R08-09, which Illinois EPA submitted to the IPCB on October 27, 2007, the EPA provided feedback regarding the proposal by letter dated January 29, 2010. In this missive, the EPA suggests that the “Use B” standards may not be protective of early life stages and states “Therefore, EPA recommends that Illinois consider revising the proposed dissolved oxygen criteria to ensure protection of larval fish that are present in these waters during the summer months. Additionally, the EPA recommends a review of the chronic dissolved oxygen criteria. Illinois should consider either including the 7-day and 30-day mean criteria or providing additional justification as to the protectiveness of the proposed criteria.”

The District’s perception is that the EPA makes the assessment for more stringent limits without any consideration of the physical limitations of the system or the fact that the only mechanism with which the District can improve DO in this engineered water body is to implement energy and capital-intensive remedies. Effective regulatory review should require scientifically objective criteria and countervailing data.

A more consistent approach would be to implement the State of Ohio DO criteria for Modified Warm Water Streams (the equivalent of Warm Water Aquatic Life Use A) which includes is a daily minimum of 3.0 mg/L and a daily average of 4.0 mg/L, and the minimum reduces to 2.5 mg/L in the Huron/Erie Lake Plain Ecoregion (Ohio rule 3745-1-07). Whereas for Limited Resources Waters (the equivalent of Warm Water Aquatic Life Use B) the criterion for the daily minimum is 2.0 mg/L with a daily average of 3.0 mg/L (Ohio rule 3745-1-07).

Nutrients

The District supports the recommendations and approaches for addressing nutrients that are listed in NACWA’s March 2011 white paper entitled “Nutrient Summit Outcomes and Issues.” The District also supports the following arguments made by the Federal Water Quality Coalition (FWQC) in its April 4, 2011 letter to the EPA:

- “EPA has recently stated that States should issue binding permit limits for nutrients by “interpreting” narrative water quality criteria to derive numeric targets, instead of going through the formal rulemaking process of setting nutrient water quality standards. This

will result in a case-by-case nutrient control program that is less coordinated, less consistent and less scientifically-based, and it could deprive stakeholders of adequate opportunities to comment on the basis for these binding requirements and to seek judicial review. That is not consistent with the sound science and transparency that the Administration has stated it wants to promote.”

- **“Federal Takeover of State Water Quality Responsibilities:** Recently, EPA issued Federal water quality standards for nutrients in the State of Florida. This EPA action was an unwarranted Federal interference in an area where States have primary responsibility. In addition, the new standards lack scientific support, and will impose enormous compliance costs without adequate opportunities for regulated sources to obtain appropriate relief. EPA should withdraw the Florida standards and instead assist the State to develop State-specific standards that will address nutrient issues in an appropriate, effective and scientifically-based manner.”
- **“Water Quality Trading:** While EPA has issued many statements over the years that mention water quality trading as an important element of the CWA regulatory program; the Agency has not taken tangible actions to make trading function in an effective way for more than a few watersheds around the country. This is particularly important if EPA intends for trading to be used in addressing large interstate watersheds, such as Chesapeake Bay. EPA needs to adopt policies that will allow for and promote widespread use of trading as a means to accomplish water quality improvements while allocating control costs in an efficient and cost-effective manner among various sources.”

The District appreciates the opportunity to submit these comments on the EPA’s plan for regulatory review. We look forward to continuing to work with the EPA on addressing critical Clean Water Act regulatory issues now and in the future. If you have any questions or require further documentation, please feel free to contact me at 312-751-7900.

Sincerely,



Kevin J. Fitzpatrick
Acting Executive Director

C: NACWA
IAWA