



July 31, 2015

Via e-mail; exhibits uploaded to Dropbox to:

Hearing Officer Dean Studer, Mail Code #5
Illinois Environmental Protection Agency
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Re: City of Chicago Combined Sewer Overflows - NPDES Permit No. IL0045012 - Notice No. KKD:07120501.bah.

Dear Hearing Officer Studer and other Illinois EPA officials:

This letter and the documents being sent with it are comments of the Natural Resources Defense Council, Alliance for the Great Lakes, Openlands, Prairie Rivers Network, Recovery on Water and Sierra Club on the draft National Pollutant Discharge Elimination System (NPDES) permit (Draft Permit) for Combined Sewer Overflows (CSOs) of the City of Chicago. These comments should be read together with the comments of Alliance for the Great Lakes, Sierra Club, Prairie Rivers Network, Friends of the Chicago River et al that are hereby incorporated by reference.

Members of the organizations joining in these comments are directly affected by CSOs that discharge into the North Shore Channel, the North Branch of the Chicago River, the Chicago River, the South Branch of the Chicago River, the Collateral Channel, the South Fork of the South Branch of the Chicago River (Bubbly Creek), the Sanitary and Ship Canal, the Little Calumet River, and the Des Plaines River. Members are also adversely affected by flows of polluted water into Lake Michigan that are allowed in part due to CSOs owned by the City of Chicago. Discharges of polluted water from Chicago CSOs also negatively impact downstream waters used

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and enjoyed by members, including the Lower Des Plaines River and the Illinois River.

Members of the commenting organizations drink water from, boat, fish and swim in, hike, and observe wildlife near waters affected by the CSOs at issue. Many members of these organizations would use these waters more frequently were they not affected by pollution from the Chicago CSOs and other sources of pollution into these waters.

SUMMARY OF COMMENTS and OBJECTIONS

The City of Chicago, along with the United States Environmental Protection Agency (U.S. EPA), Illinois Environmental Protection Agency (IEPA), and the Metropolitan Water Reclamation District of Greater Chicago (MWRD), have recognized the importance of protecting Lake Michigan, the Chicago Area Waterways (CAWS),¹ the Des Plaines River and the Illinois River from polluted CSOs.² As a result of much work done by public and private entities, important improvements have been made to the CAWS and the Lower Des Plaines River.³ However, the goals of the Clean Water Act are far from being achieved. Without additional actions, the hard won improvements in water quality that have opened sections of the

¹ The portion of the affected waters known as the Chicago Area Waterways include the North Shore Channel; the portion of the North Branch of the Chicago River below the confluence of the North Branch and the North Shore Channel; the Chicago River; the South Branch of the Chicago River; Bubbly Creek; the Chicago Sanitary and Ship Canal (CSSC); the Cal Sag Channel; the portion of the Little Calumet below its connection with the Cal Sag Channel; Lake Calumet; and the Calumet River.

² E.g. Report to Congress Combined Sewer Overflows to the Lake Michigan Basin (2007)

http://water.epa.gov/polwaste/npdes/cso/upload/cso_reporttocongress_lakemichigan.pdf (Ex. A); Letter of Commissioner Thomas H. Powers to Amy Dragovich, April 24, 2014 (Ex. B); Hey and Assoc., Des Plaines River Use Attainability Analysis (2003)(Ex C); CDM, Chicago Area Waterway Use Attainability Analysis, August 2007 (Ex.D), IEPA, Statement of Reasons, August 2007 (Ex, E) p.22; MWRD, Petition for Variance from Dissolved Oxygen Standards, PCB 2016-028, (Ex F). Letter of Linda Holst (Region 5) to IPCB, April 15, 2010 (Ex. G).

³ Hey and Assoc., Des Plaines River Use Attainability (2003) (Ex. C) pp. 2-34 to 2-38 (showing progress but continuing violations in Des Plaines); CDM, Chicago Area Waterway Use Attainability Analysis, August 2007 (Ex. D) p. 3-13, 4-87 (showing progress and continuing violations in CAWS), IEPA, Statement of Reasons, August 2007 (Ex. E) p.22. IPCB, R08-9 (Subdocket C) Opinion and Order of the Board, Nov. 21, 2013.

CAWS to increased recreational use and greater fish species diversity could be lost.

Indeed, the Clean Water Act (CWA) requires that much more work be done. In particular, it is imperative that the NPDES permit addressing the 184 or more CSO overflows owned by the City of Chicago set forth a detailed plan for controlling discharges from those overflows so as to prevent violations of water quality standards and that the City of Chicago's permit otherwise comply fully with the CWA, including the requirements of the EPA 1994 CSO policy (CSO Policy), which has been incorporated by reference into the CWA.⁴

As will be discussed in further detail below, the Draft Permit must be strengthened in the following respects:

- Special conditions should be incorporated into the permit requiring prompt development and implementation of a detailed LTCP. No long-term control plan (LTCP) has been developed, let alone properly adopted, with regard to the City's CSO discharges. An essential element of the development of an LTCP is determining whether it will prevent violations of water quality standards. It does not appear that the City has started the necessary analysis that would enable adoption of the required LTCP. In light of this delay, the permit must include a proscriptive and enforceable schedule for developing and implementing an LTCP.
- The LTCP must be drafted recognizing that the Tunnel and Reservoir Plan (TARP) is not expected to address all Chicago area CSOs that cause violations of water quality standards. MWRD has directly acknowledged in public documents that TARP will not ensure compliance with CWA obligations for all dischargers into the CAWS and Lake Michigan, including the City.⁵ Further, MWRD, the U.S. EPA and IEPA have expressly taken the position that U.S. EPA and

⁴ U.S. EPA CSO Control Policy, 59 Fed. Reg. 18689 (April 19, 1994) Section I.A., available at <http://water.epa.gov/polwaste/npdes/cso/upload/owm0111.pdf>. In 2000, Congress enacted the Wet Weather Water Quality Act expressly incorporating the CSO Policy in its entirety into the CWA through new CWA § 402(q), 33 U.S.C. § 1342(q).

⁵ MWRD Petition for Variance pp. 16-28 (Ex. F).

IEPA's 2011 consent decree with MWRD and the MWRD NPDES permits do not address Chicago's CSOs.⁶

- The LTCP plan must take into account recent changes to the dissolved oxygen, chloride and pathogen water quality standards applicable to the CAWS and Upper Dresden Island Pool of the Des Plaines River. The Illinois Pollution Control Board (IPCB) recently strengthened numerous criteria applying to waters affected by the Chicago CSOs.⁷
- The LTCP should consider a wide range of potential green infrastructure and CSO treatment alternatives, and the permit should spell out in detail what should be done to analyze these alternatives. Advances in the understanding of the effectiveness of green infrastructure and CSO treatment should make it practical to address much of the Chicago CSOs in this manner.
- The permit should require a study in the LTCP of the costs and benefits of constructing increased stormwater conveyance to prevent CSOs and flooding on the North Side of Chicago and to address Bubbly Creek. In view of new evidence, and other information discussed below, that increased capacity is needed for conveyance to the McCook Reservoir of stormwater from the North Side of Chicago and to prevent CSOs to Bubbly Creek, the City should be required to determine what additional conveyance is physically possible and economically achievable.
- The permit must provide for public comment on the draft LTCP. Public participation is an essential element of LTCP development under the CSO policy, hence the LTCP timetable must build in all required public comment opportunities.

⁶ Reply of the United States and State of Illinois to Plaintiff-Intervenors' Responses in Opposition to Entry of Consent Decree, p. 37-9 (Ex. H).

⁷ IPCB, in Case No. R2008-09(d), recently established new water quality criteria designed to protect recreation and aquatic life for the CAWS. See Order and Opinion of the Board, June 18, 2015, In the Matter of: Water Quality Standards and Effluent Limitations for the Chicago Area Waterways System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code §§ 301, 302, 303 and 304. Earlier in that proceeding, IPCB issued a final rule on February 2, 2012 creating new recreational use designations – *inter alia*, “primary contact” and “incidental contact” for the CAWS.

- The LTCP and the Permit must spell out how the City is going to address each of the nine minimum controls (NMCs) required by the CSO policy. Merely stating, in Special Condition #3, No. 6, that the permittee must comply with the nine minimum controls and listing the controls, without providing details as to what the permittee must do fails to provide necessary guidance for the permittee, the public, and enforcement authorities.⁸
- Skimmer boats adequate to address the Chicago CSOs should be specifically required in the permit to implement the CSO policy minimum control regarding control of solids and floatable materials in CSOs. MWRD is not required by its permits to clean up floatables and other offensive conditions originating from Chicago CSO discharges, and, thus, the City cannot rely on it to do so.
- Public comment procedures should be spelled out in the permit that will allow public comment on and judicial review of the pollution prevention plans (PPP), the CSO operation and maintenance plans (CSO O&M plan) and the Public Notification Plan. As with the LTCP, the PPP, CSO O&M and Public Notification plans are key elements of the permit that must be developed in an open process subject to public review and comment.
- The section of the Draft Permit regarding sensitive uses (Special Condition #3 No. 7), should be substantially rewritten to recognize that there is now ongoing recreational primary contact use in every part of the CAWS except for a portion of the CSSC. All of the water body segments that have been designated as primary contact by the IPCB are in fact used for canoeing, jet skiing, kayaking, or other primary contact activities.
- Language that suggests that IEPA can make changes to the designated uses of receiving waters or determine that designated uses and applicable water quality standards can be ignored must be deleted. The language of Special Condition #3 No. 7 describes a process through which the permittee can choose what segments of the CAWS

⁸ IEPA should consider reorganizing and renumbering the permit provisions. Having numbered special conditions that include numerous numbered provisions makes reference to provisions somewhat more difficult.

it feels are not suitable for primary contact recreation and request that IEPA find that these waterbody segments are not “sensitive areas.” An implication of this condition could be to circumvent the legally determined designated uses and applicable water quality standards in these same segments. Any such determination by the IEPA would fall well outside of the use attainability analysis (UAA) process described at 40 CFR § 131.10(g). Failure to protect those designated uses fully or to issue a permit that fails to ensure full compliance with all applicable water quality standards and protection of those designated uses is in conflict with the law. Removal of a designated use is a change in water quality standards that must be justified using one or more of the 40 CFR § 131.10(g) factors and is subject to approval by the IPCB and U.S. EPA. 40 CFR § 131.10(j). Indeed, the designated uses for many, if not all, of the segments were recently changed through a UAA that put in place more protective designated uses and water quality standards.

- Bubbly Creek should be designated as a sensitive area and studies should be undertaken to address the Chicago CSOs that discharge to Bubbly Creek (as well as the Racine Avenue Pumping Station). Testimony heard at the public hearing on this permit made clear that water recreation on Bubbly Creek, because of its location and protection from certain commercial traffic, has become an important existing use for numerous people. Studies should be undertaken as soon as possible to determine how Bubbly Creek can be made safer for recreational activities.
- Because it should be known whether the Sewer Use Ordinance mentioned in Special Condition #3 No. 9 exists, the permit should specify what should be done. It is unclear from the Fact Sheet and Draft Permit what the current situation is with regard to the ordinance. The agency should determine this and set forth appropriate conditions in light of known facts instead of generic requirements.
- Development of a plan to address violations of water quality standards should be made an immediate requirement of this permit under a revised Special Condition #3 No. 10. As shown by the IEPA’s 303(d)

listings⁹ and much other evidence discussed below, it is well established in the public record that continuing violations of water quality standards for dissolved oxygen and "unnatural sludge" have occurred that are in part the result of CSO discharges from City-owned outfalls.

- The City's monitoring obligations (not MWRD's) must be spelled out in detail in this permit. The City naturally may use MWRD data to the extent it is available, but the permit must place ultimate responsibility for monitoring the City's CSOs and reporting that data to the public on the City, and the City must be responsible for the collection of additional data necessary to assure that its CSOs are properly characterized and that they do not cause or contribute to violations of water quality standards.

- The required effluent monitoring of the CSO outfalls is insufficient and does not meet the minimum requirements for monitoring and discharge characterization required for implementation of the Nine Minimum Controls for the National CSO Control Policy or for compliance with Special Condition #3, No. 6(i). Only two of the 184 CSO outfalls (Outfalls 024 and 178),¹⁰ are monitored for water quality parameters, which include only flow, 5-day Biochemical Oxygen Demand (BOD₅), suspended solids, and pH. An additional 70 of the 184 outfalls are subject to limited monitoring for duration and frequency of discharge, through an agreement with MWRD.¹¹ Monitoring of effluent quality should be required to ensure a complete characterization of CSO discharges, their impact on receiving waters, and the measurement of effectiveness of CSO abatement efforts. IEPA should require monitoring for a much greater number of outfalls and include the following parameters: fecal coliform, total phosphorus, total nitrogen, chloride and toxicity, as well as any parameters listed as a cause of impairment. In addition, frequency and duration of CSO discharges should rely more on automated sensors and less on visual

⁹ A copy of the IEPA 303(d)/305b report highlighting some of the impairments and violations of water quality standards that are potentially caused or contributed to by City of Chicago CSOs is attached as Ex. I.

¹⁰ Draft NPDES Permit No. IL0045012, City of Chicago Combined Sewer Overflows, p. 2, February 27, 2015.

¹¹ Draft NPDES Permit No. IL0045012, City of Chicago Combined Sewer Overflows, Special Condition #3, Nos. 11-17, pp. 9-13, February 27, 2015.

inspections. IEPA should also make a formal determination on whether more than 70 outfalls should be monitored for frequency and duration of discharge.

- Continuous ambient water quality monitoring of dissolved oxygen levels must be required of all the waters that may be affected by the discharges to determine the extent to which dissolved oxygen standards are violated by CSOs. BOD₅ and nutrient pollution, known to be discharged by CSOs, impact waters affected by the discharges in ways that can only be gauged by monitoring ambient water quality in the receiving water bodies. The City may utilize the MWRD's continuous dissolved oxygen data that is available, but has an independent responsibility to determine the extent to which its CSOs are impacting the receiving waters and causing violations of Special Conditions #3 No.10 and Special Condition #5 of its permit. Monitoring of ambient water quality is necessary to report compliance with "all effluent limits and special conditions." 35 Ill. Adm. Code § 309.146(a)(2)
- Monitoring should also be required to determine compliance with the narrative "unnatural sludge" and "offensive conditions" standards of 35 Ill. Adm. Code §§ 302.203 and 302.403 in order to characterize the CSOs and determine compliance with Special Conditions #3 No.10 and #5. Prevention of violations of narrative standards is required by federal and state law. 33 U.S.C. § 1311(b)(1)(c); 40 CFR § 122.44(d), 35 Ill. Adm. Code § 304.105, and 35 Ill. Adm. Code § 309.141(d)(1) 35 Ill. Adm. Code § 309.143(a). Like dissolved oxygen standards, compliance with narrative standards prohibiting "unnatural sludge" and "offensive conditions" cannot be determined without measuring the impact of the CSOs in the receiving waters. Again, monitoring is required to determine compliance with all permit conditions. 35 Ill. Adm. Code § 309.146(a)(2).
- The permit must assure that the public receives adequate notification of CSO occurrences and CSO impacts. The particulars of what will be announced and how it will be announced should be set forth in detail in the permit.

I. The Legal and Regulatory Background

A. Clean Water Act General Requirements

The CWA was enacted in 1972 with the express goal of making all waters of the United States “fishable and swimmable” – i.e. clean enough to support these sensitive uses.¹² To achieve that goal, the CWA requires states to designate for each water body in its jurisdiction the uses that are attainable using available technology and practices.¹³ Based on these use designations, the states establish criteria to support them, i.e., numeric or narrative limits on particular pollutants and water chemistry parameters consistent with the designated use. For example, in most of the CAWS, the IPCB has established criteria requiring that levels of dissolved oxygen (DO) (which aquatic organisms need to breathe) must not drop below 5.0 milligrams per liter (mg/L) during the period of March through July, or below 3.5 mg/L during August through February.¹⁴ Additionally, the IPCB has established a narrative criterion for the CAWS requiring that the waters “shall be free from unnatural sludge or bottom deposits, floating debris, visible oil, odor, unnatural plant or algal growth, color or unnatural color or turbidity.”¹⁵

The CWA requires that all dischargers of pollutants to water through a “point source” (i.e., a discrete pipe or other conveyance as opposed to diffuse runoff) obtain a NPDES permit. In order to ensure that the water quality standards (WQS) described above are met, the CWA requires permitting authorities to establish water quality based effluent limits (WQBELs) in individual permits that ensure the discharge will not cause or contribute to a WQS violation.¹⁶ In addition, NPDES permits must contain technology-based pollutant limits, to be determined based on current capabilities of pollution abatement technology.¹⁷ Under the CWA, all effluent limits and other regulatory plans to address pollution are subject to public scrutiny and full public participation in the decision process. 33 U.S.C. § 1251(e); *Waterkeeper Alliance, Inc. v. U.S. EPA*, 399 F.2d 486, 504 (2d. Cir. 2005).

¹² 33 U.S.C. § 1251(a)(2).

¹³ 33 U.S.C. § 1313(c); 40 CFR § 131.10(g).

¹⁴ 35 ILL. ADM. CODE § 302.405.

¹⁵ 35 ILL. ADM. CODE § 302.403.

¹⁶ 33 U.S.C. § 1312(a); 33 U.S.C. § 1342(b); 40 CFR § 122.44(d); 35 Ill. Adm Code § 304.105; 35 Ill. Adm. Code § 309.141(d)(1) and (d)(2); and 35 Ill. Adm. Code § 309.143.

¹⁷ 33 U.S.C. § 1311.

B. Clean Water Act CSO-Specific Requirements

CSOs are the product of combined sewer systems (CSSs) existing in municipalities around the nation, including Chicago. In the CSS, sanitary sewage and stormwater runoff flow into a single conveyance system, which sends it to a publicly owned treatment works (POTW) to be given primary and secondary treatment and other treatment necessary to meet WQSs before discharged to a water body. However, during periods of heavier rain, the volume of combined sewage overwhelms the capacity of the POTW, and must be discharged before it gets to the POTW through a CSO outfall – i.e., a direct discharge of untreated sewage combined with polluted stormwater.¹⁸ In addition to these CSO discharges’ deleterious effects on recreational uses, they also cause dissolved oxygen levels to drop precipitously, often down to zero, and cause violations of narrative standards such as the one in effect in the CAWS.¹⁹

To address the threat to water quality posed by CSOs, and ensure that proper limits are established in NPDES permits for CSOs, U.S. EPA in 1994 promulgated its CSO Control Policy (The Policy).²⁰ The Policy, which is expressly grounded in the principle that “CSOs are point sources subject to NPDES permit requirements including both technology-based and water quality-based requirements of the CWA,”²¹ establishes a detailed set of steps that must be implemented by CSS communities to curb pollutant discharges from CSO outfalls and meet NPDES permitting requirements.

The Policy requires that CWA compliance be achieved in all CSS communities within a reasonable time frame, through use of measures developed by the CSS community and implemented by U.S. EPA and state authorities. The Policy establishes specific directives for both CSS communities and permitting agencies. The directives include the following:

¹⁸ See U.S. EPA CSO Control Policy, Section I.A.

¹⁹ See e.g., MWRD Monitoring and Research Department, Report No. 14-21(Ex. J), Report No. 13-35 (Ex. K) and MWRD 2014 Ambient Waterways (Ex. L) which show DO values in CAWS below 3.0 mg/L. MWRD monitoring locations are shown in AWQM and DO stations (Ex. M). These MWRD reports and other showing numerous WQS violations are available at <https://www.mwrdd.org/irj/portal/anonymous/WQM>; see also, IEPA 303(d) Report (Ex. I).

²⁰ 59 Fed. Reg. 18689 (April 19, 1994).

²¹ Policy Section I.A.

- Nine minimum controls. The Policy requires that CSS dischargers comply immediately with a set of basic, straightforward measures to curb CSO pollution referred to as the nine minimum controls (NMCs). The NMCs represent the technology-based controls required in all NPDES permits, and are required under the Policy to be included in Phase I of NPDES permitting following issuance of the Policy and all permits thereafter. The NMCs include, *inter alia*, a requirement that POTWs in CSS communities ensure “[m]aximization of flow to the POTW for treatment” in order to minimize the amount of combined sewage that needs to be discharged through CSO outfalls.²²
- System modeling, monitoring, and characterization. CSS dischargers are given a detailed set of instructions as to how to assess and characterize their system through monitoring and modeling, in order to lay the groundwork for development of a CSO control plan. They are to gather the necessary rainfall records; and monitor the frequency, duration, flow rate, volume, and pollutant concentration of CSO discharges and their impact on the receiving waters; and model the response of the system and the receiving waters to predict system responses to various wet weather events.²³
- Long term control plan. After completion of its system assessment, the CSS discharger is required to develop a long term control plan to address CSO discharges, and ensure that future NPDES permits comply with the CWA requirement that such permits contain WQBELs prohibiting discharges that cause or contribute to a violation of WQS in the receiving waterbody. The Policy requirements applicable to LTCPs include, *inter alia*, the following:
 - Evaluation of alternatives. The CSS discharger must consider a “reasonable range of alternatives” in the process of developing an LTCP. The alternatives

²² Policy Sections II.A, IV.B.

²³ Policy Section II.C.1.

analysis should be “sufficient to make a reasonable assessment of cost and performance.”²⁴

- Fixed-date schedule. The Policy requires a “fixed-date project implementation schedule.”²⁵
- Performance criteria to ensure protection of WQS. The Policy requires that any selected LTCP alternative be shown capable of meeting CWA requirements upon completion. The permit requiring implementation of the LTCP must require that the applicable performance criteria be met, and contain a reopener clause in case they are not.²⁶
- Implementation schedule based on financial capability analysis. The Policy requires that the LTCP implementation schedule be determined based on, *inter alia*, both the relative importance of adverse impacts of the CSOs on WQS, and the discharger’s financial capability.²⁷
- Public participation. The discharger is required, in developing the LTCP, to “employ a public participation process that actively involves the affected public in the decision-making to select the long-term CSO Controls.” The “affected public” is defined to include “rate payers, industrial users of the sewer system, persons who reside downstream from the CSOs, persons who use and enjoy these downstream waters, and any other interested persons.”²⁸

Following issuance of the Policy, U.S. EPA issued a number of guidance documents explaining and fleshing out the Policy’s requirements. These include, *inter alia*, the Combined Sewer

²⁴ Policy Section II.C.4.

²⁵ Policy Section II.C.

²⁶ Policy Section II.C.4.a.

²⁷ Policy Section II.C.8.

²⁸ Policy Section II.C.2.

Overflows Guidance for Permit Writers (EPA 832-B-95-008) (the CSO Guidance for Permit Writers),²⁹ the Combined Sewer Overflows Guidance for Long-Term Control Plan (LTCP Guidance),³⁰ and the Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development.³¹

The City of Chicago has not developed an LTCP, and it is not clear what work the City has done to control CSOs. The MWRD has made clear that its CSO control work only tangentially treats the CSOs of Chicago and other municipalities.³²

Where work on the LTCP is ongoing at the time of permitting, the Policy establishes a set of criteria for determining the extent to which completed work obviates the need for the LTCP analysis and planning otherwise required by the Policy as described above.³³ Where, as here, a permittee has merely “previously constructed CSO control facilities in an effort to comply with WQS but has failed to meet such applicable standards or to protect designated uses due to remaining CSOs,” that permittee should receive only “consideration for such efforts in future permits or enforceable orders for long-term CSO control planning, design and implementation.”³⁴ Chicago’s work thus far does not obviate the need for LTCP analysis and planning.

²⁹ This document and other U.S. EPA guidance regarding proper CSO control can be found at <http://water.epa.gov/polwaste/npdes/cso/Guidance-Documents.cfm>.

³⁰ Available at <http://www.epa.gov/npdes/pubs/owm0272.pdf>.

³¹ Available at <http://www.epa.gov/npdes/pubs/csofc.pdf>.

³² MWRD, Petition for Variance from Dissolved Oxygen Standards, PCB 2016-028 p. 11 (Ex. F).

³³ It provides that where a permittee “on the date of publication or this final Policy [April 19, 1994] has substantially developed or is implementing a CSO control program pursuant to an existing permit or enforcement order, and such program is considered by the NPDES permitting authority to be adequate to meet WQS and protect designated uses,” then the permittee “should complete those facilities without further planning activities otherwise expected by this Policy.” Policy Section I.C.2. In such circumstances, the ongoing work should still be “reviewed and modified to be consistent with the . . . financial capability and post construction monitoring provisions of this policy.” Policy Section I.C.3.

³⁴ Policy Section I.C.3.

II. Comments, Criticisms and Suggestions regarding the Draft Chicago CSO Permit

Significant comments, criticisms and suggestions regarding the draft Chicago CSO are detailed in A through S below.³⁵

A. The Permit Fails to Reflect the Phasing Requirements Mandated by the Policy.

The CSO Guidance for Permit Writers explains that CSO permits are to be written in phases. Phase I is to contain a number of initial controls and collection of information to allow for development of a Phase II plan. Phase II permits are to utilize information developed under the Phase I permit to develop more precise requirements and make necessary adjustment to the NMCs selected. CSO Guidance for Permit Writers Section 4.

The Draft Permit fails to adhere to these phasing requirements. Indeed, it is impossible to tell whether IEPA meant to draft a Phase I permit, a Phase II permit, or neither. While the Permit should be a Phase II or post-Phase II permit based on the number of years that have passed and permits that have been issued, it does not appear to have been drafted as such. Much of the work that should have been done in the past (e.g. an LTCP, evaluation of control alternatives and consideration of sensitive areas) has apparently not been done.

While in some ways the Draft Permit resembles a Phase I permit in that it lacks specificity as is typical in Phase I permits, it does not even contain the necessary Phase I elements. It lacks the study requirements and deadlines required by the Policy.

Specifically, the LTCP Guidance provides that Phase I NPDES permits for CSOs require:

- Identification of CSO Outfalls in the permit,
- Immediate implementation of the nine minimum controls (NMC) based on best professional judgment, and

³⁵ Failure by IEPA to respond to any of comments A-P is likely to lead to a permit appeal, perhaps one that would not have occurred if IEPA had complied with 35 Ill. Adm. Code § 166.192.

- Development of a Long Term Control Plan that will ultimately result in the permittee's compliance with Clean Water Act requirements.

It appears here that the CSO outfalls have been identified, but there is no LTCP and the NMCs are set forth in the Draft Permit in only generic terms.

- The Permit should clearly spell out the work that has been done under earlier permits and what work must be done under the new permit with an accelerated schedule assigned to work that should have been done under earlier permits that has not been done.

B. A properly developed Long Term Control Plan is needed.

A critical flaw in the Draft Permit is its lack of any LTCP requirement. An LTCP is the centerpiece of the process to address CSOs set forth in the Policy, yet the Draft Permit omits it entirely.³⁶ MWRD's LTCP and TARP is not the City's LTCP, nor could it be, as the governmental authorities involved in TARP implementation have made clear that TARP is inadequate to control CSOs other than MWRD's.³⁷

U.S. EPA has said that, "the LTCP development process is a comprehensive planning effort designed to evaluate a range of CSO control alternatives and result in the selection of CSO controls that will provide for the attainment of [water quality standards]." CSO Guidance for Permit Writers Section 3.5 pp. 3-12. An IEPA response to a Freedom of Information Act request submitted by commenters confirms that no document purporting to be a LTCP for the City's CSOs exists.³⁸ Certainly,

³⁶ There is discussion in some documents that TARP forms a part of the LTCP for the City's CSOs. Letter of Thomas H. Powers to Amy Dragovich, April 24, 2014 (Ex. B). There is, however, no evidence that TARP was adopted into any properly considered LTCP. Moreover, even if such a LTCP existed, the City could not now properly rely on TARP because of MWRD's acknowledgment that TARP will not end the City's CSOs and changes that have been made to applicable water quality standards.

³⁷ Filings by the U.S. EPA and IEPA make clear that the provisions of the Consent Decree entered in *U.S. v. MWRD*, 11-CV-08859 (N.D. Ill.) and the MWRD permits have no bearing on the City of Chicago's permits. That consent decree addresses only the 37 MWRD CSOs and was not intended to do more. Further, U.S. EPA and IEPA may still bring an enforcement action against the City. Reply of the United States and State of Illinois to Plaintiff-Intervenors' Responses in Opposition to Entry of Consent Decree, Ep. 37-9 (Ex. H); see also, *infra*, note 39.

³⁸ Response to FOIA (Ex. N).

no LTCP exists that contains the required elements created after the type of analysis and public participation required by the law. Further, to the extent that any thinking has gone into consideration of an LTCP for the City's CSOs, recent developments have rendered much of it obsolete.

- The Permit should require proper development of an LTCP as soon as possible, while allowing for public participation in the creation of the LTCP. Further, compliance with the finished LTCP should be made a condition of the next NPDES permit and made subject to public comment and potential IPCB review as are all NPDES permit conditions.

C. The LTCP must take into account that TARP will not eliminate violations of WQS caused by Chicago CSOs and that MWRD has no legal obligation to prevent such violations.

It is currently claimed that TARP will be completed in 2029, 14 years from the present. Further, MWRD has stated in testimony and filings to the IPCB that violations of water quality standards will continue in the CAWS even after the completion of TARP.³⁹ As was stated by MWRD in a recent filing in the IPCB:

It should also be noted that aside from the MWRD's Plants and CSO outfalls, there are other sources that are relevant to attainment of the new DO standards including 167 CSO outfalls that are operated by the City of Chicago and 49 CSO outfalls that are operated by various suburban communities ... These sources are not covered by MWRD's Permits. It is expected that contributions from some of these sources will be reduced as the MWRD implements the remaining elements of TARP but, as noted above, it is not expected that the proposed DO standards would be met consistently under all conditions.⁴⁰

³⁹ Written Responses to Illinois EPA's Pre-filed Questions from MWRDGC's Witness Adrienne D. Namura (R08-9) Doc. 72742 pp.6-26 (Ex. O). See also, Great Lakes and Mississippi River Interbasin Study, Appendix F (GLMRIS App. F) (Ex. P), at F-22-3, F-244-5, F-258-63, and F-453-44 available at http://glmr.is.anl.gov/documents/docs/glmrisreport/Appendix_F-Water_Quality_Analyses.pdf.

⁴⁰ MWRD, Petition for Variance from Dissolved Oxygen Standards, p. 11, PCB 2016-028 (Ex. F). In fact, for some rain events and locations the CSO flows are predicted

Further, as mentioned, IEPA and U.S. EPA have stated that the control, monitoring, and implementation of requirements in the MWRD NPDES permits and the Consent Decree entered into with MWRD only apply to the CSOs controlled by MWRD.⁴¹

- The LTCP for the City of Chicago must include an analysis of what can be done to address the City of Chicago's CSOs until TARP is completed and what CSOs will never be addressed without implementation of additional control measures by the City. In all cases, the LTCP must provide for elimination of the CSOs as soon as feasible.

D. The LTCP must take into account that the Water Quality Standards applicable to many of the waters affected by Chicago CSOs have recently changed.

The Policy states that "Permittees with CSOs are responsible for developing and implementing long-term CSO control plans that will ultimately result in compliance with the requirements of the CWA." CSO Policy II.C. This requires bringing the CAWS and the Lower Des Plaines into compliance with water quality standards. Accordingly, even had Chicago developed an LTCP for its CSOs prior to April 19, 1994, the City would have to reconsider that LTCP because the target has changed.

After a very lengthy proceeding involving more than 50 days of testimony over a five-year period, the IPCB changed use designations for most of the CAWS and the Upper Dresden Pool of the Des Plaines River.⁴² The IPCB also approved changes to the water quality criteria applicable to these waters for fecal coliform, dissolved oxygen, chloride, and other water quality parameters.⁴³ All of these parameters are known to be affected by

actually to increase after stage 1 of the McCook Reservoir and, even later, after TARP as a whole is completed. GLMRIS App. F (Ex. P) F-241-2, F-257, and F-267.

⁴¹ Reply of the United States and State of Illinois to Plaintiff-Intervenors' Responses in Opposition to Entry of Consent Decree, p. 37-9 (Ex. H).

⁴² IPCB, Order and Opinion of the Board R08-09, (Subdocket C) Nov. 21, 2013; Margaret Conway, MWRD UAA Analysis, March 27, 2015 (Ex. Q).

⁴³ IPCB, R08-09 (Subdocket D), Order and Opinion of the Board, June 18, 2015, In the Matter of: Water Quality Standards and Effluent Limitations for the Chicago Area Waterways System and Lower Des Plaines River: Proposed Amendments to 35 Ill. Adm. Code §§ 301, 302, 303 and 304: Conway (Ex. Q).

CSOs.⁴⁴ Since the major point of an LTCP is to bring water bodies receiving CSOs into long term compliance with water quality standards, the fact that the targets have substantially changed mandates revisiting any prior plans that have been made to achieve water quality targets. The changed standards are yet another reason why TARP, designed several decades ago, cannot be presumed sufficient to achieve compliance with the newly-developed water quality standards.

- The LTCP must consider how the City will prevent its CSOs from causing or contributing to violations of the criteria that have become applicable to the CAWS and the Lower Des Plaines for fecal coliform, chloride, dissolved oxygen, and other pollutant parameters.

E. Green infrastructure and CSO treatment alternatives must be considered in the LTCP and the permit.

Long-term CSO control plans must "evaluate alternatives for attaining compliance with the CWA, including compliance with water quality standards and protection of designated uses." CSO Policy at Fed. Reg. Vol. 59, No. 75 at 18688. "The primary objective of the LTCP is to evaluate CSO control alternatives that will enable the permittee, in consultation with the NPDES permitting authority, the WQS authority, and the public, to select controls that will meet CWA requirements." CSO Guidance for Permit Writers Section 3.5.1.4.

It is clear that green infrastructure should be a major component of the LTCP for the City of Chicago. Green infrastructure is the use of natural and built systems, such as wetlands, green roofs, rain gardens, bioswales, street trees and porous pavement that infiltrates, speeds evapotranspiration, or otherwise captures rain to manage stormwater by either slowing or preventing its entry into the collection system altogether. The U.S. EPA has issued multiple policies on integrating green infrastructure into regulatory programs, including LTCPs and Consent Decrees (CDs);⁴⁵ the Agency has

⁴⁴ GLMRIS App. F; CSO Guidance for Permit Writers Section 1.1; Report to Congress Combined Sewer Overflows to the Lake Michigan Basin (Ex. A) ES-4.

⁴⁵ See: U.S. EPA (2011). "Protecting Water Quality with Green Infrastructure in EPA Water Permitting and Enforcement Programs," prepared by Acting Assistant Administrator Nancy Stoner, Office of Water, and Assistant Administrator Cynthia Giles, Office of Enforcement and Compliance Assurance, accessed at http://www.epa.gov/npdes/pubs/gi_memo_protectingwaterquality.pdf; U.S. EPA (2007).

also developed a national green infrastructure strategy.⁴⁶ As the Assistant Administrator for Enforcement and Compliance Assurance wrote in a letter to the U.S. Conference of Mayors:⁴⁷

The EPA and the Department of Justice strongly believe that green infrastructure presents an exciting opportunity for stormwater management approaches that help eliminate CSOs in a cost-effective manner, while simultaneously securing a host of important environmental and community benefits, including improved water and air quality, increased energy efficiency, green spaces and economic development. For these reasons, the EPA is committed to the use of green infrastructure projects in CSO settlements wherever it is feasible and appropriate. The EPA and the DOJ strongly encourage all CSO communities to consider green infrastructure, as part of an integrated approach to CSO control.

The U.S. EPA has found that “Green infrastructure can often provide more benefits at lesser cost than single-purpose gray infrastructure.”⁴⁸ That is because comprehensive urban stormwater and combined sewer overflows (CSOs) strategies that incorporate green infrastructure are more flexible, more effective, and often less costly than traditional approaches. In its 2011 report, “Rooftops to Rivers II,” the Natural Resources Defense Council (NRDC) documented a range of green infrastructure benefits, including stormwater volume control, pollutant removal and water conservation, as well as a range of non-water benefits, including reducing the urban heat

“Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs,” prepared by Assistant Administrator Benjamin H. Grumbles, Office of Water, accessed at http://www.epa.gov/npdes/pubs/greeninfrastructure_h2oprograms_07.pdf; U.S. EPA (2007). “Use of Green Infrastructure in NPDES Permitting and Enforcement,” prepared by Director Linda Boornazian, Water Permits Division and Director Mark Pollins, Water Enforcement Division, accessed at http://www.epa.gov/npdes/pubs/gi_memo_enforce.pdf.

⁴⁶U.S. EPA, “Green Infrastructure,”

<http://water.epa.gov/infrastructure/greeninfrastructure/>.

⁴⁷ U.S. EPA (2010). “Letter from US EPA Assistant Administrator, Office of Enforcement and Compliance Assurance, Cynthia Giles, to CEO and Executive Director, U.S. Conference of Mayors, Tom Cochran, December 8, 2010.

⁴⁸ U.S. EPA, “Cost-Benefit Resources,”

http://water.epa.gov/infrastructure/greeninfrastructure/gi_costbenefits.cfm.

island affect.⁴⁹ U.S. EPA has also analyzed the economic benefits of green infrastructure, most recently in “Case Studies Analyzing the Economic Benefits of Low Impact Development and Green Infrastructure Programs.”⁵⁰

During the past 10 years, U.S. EPA has executed a number of CDs with large municipalities or their sewage treatment authorities requiring green infrastructure. The cities with whom U.S. EPA has entered into such consent decrees include St. Louis, Kansas City, Louisville, Ft. Wayne, Indianapolis, Cincinnati (Hamilton County), Pittsburgh, Toledo, and Akron. In addition, many major municipalities – including New York City and Philadelphia – have developed and received approval for LTCs and/or extensive green infrastructure implementation plans in the context of CSO control planning. Examples include:⁵¹

- New York City: In a 2012 state consent order, New York City committed to investing more than \$1 billion in green infrastructure-based controls to reduce combined sewer overflows. Importantly, the consent order includes a requirement that the city use green infrastructure retrofits to manage one inch of runoff from 10 percent of the impervious acreage in its combined sewer service area by 2030, with interim targets for 2015, 2020, and 2025. Runoff can be managed using either retention, which is a superior means of addressing stormwater issues, or detention, with delayed release to the sewer system. These commitments have been incorporated into Clean Water Act permits, even as the city continues comprehensive planning efforts to reduce its sewer overflows and to establish long-term green infrastructure and water quality goals. New York has implemented several neighborhood-scale demonstration areas that out-performed expectations, and has scaled-up construction of “bioswales” and other green infrastructure features in the public right-of-way (i.e., planted strips along sidewalks and roadways that capture street runoff).

⁴⁹ Garrison, Noah and Hobbs, Karen, “Rooftops to Rivers II: Green strategies for controlling stormwater and combined sewer overflows,” Natural Resources Defense Council, 2011, www.nrdc.org/rooftops.

⁵⁰ U.S. EPA, “Case Studies Analyzing the Economic Benefits of Low Impact Development and Green Infrastructure Programs,” August 2013, http://water.epa.gov/polwaste/green/upload/lid-gi-programs_report_8-6-13_combined.pdf.

⁵¹ While some of the examples cited are from MS4 permits, they remain relevant as to how the use of green infrastructure can reduce CSOs.

- Further, the city is laying plans to diversify its approach to catalyze more green infrastructure on private property.
- Philadelphia: To address chronic pollution problems related to combined sewer overflows, Philadelphia established the “Green City, Clean Waters” program, an ambitious effort focused on green infrastructure solutions that will require the retrofit of nearly 10,000 acres of impervious surface on public and private property over a 25-year period. The approved plan requires Philadelphia to reduce annual CSO volume by 7.96 billion gallons, with the majority of that reduction coming from green infrastructure. Enforceable targets—both for acres of green infrastructure retrofits and for measurable reductions in sewage overflow pollution—are embodied in a state consent order. The consent order also provides that these targets will be incorporated into the city’s Clean Water Act permits. The city is on-track to meet its first major green infrastructure target, in 2016, through a combination of public investments in green infrastructure, regulation of private development projects, and incentives for private property retrofits. For example, the city established a requirement that new development and redevelopment projects infiltrate the first one inch of runoff on-site; in 2015, it strengthened that standard to require infiltration of the first 1.5 inches of runoff. The city also adopted a stormwater fee structure providing a substantial credit (up to nearly 80 percent) for nonresidential property owners who install retrofits that manage the first inch of rainfall over their entire parcel on-site, with no discharge. And, in 2015, the city launched a new grant program, which utilizes a unique public-private partnership model to generate cost-effective green infrastructure retrofits on private property. Under this Greened Acre Retrofit Program, capital costs are underwritten by the city, maintenance costs are covered by the property owner (in exchange for ongoing stormwater fee reductions from the city), and entrepreneurial private firms recruit property owners and design and build retrofit projects in bulk.
 - Portland, Oregon: To comply with its NPDES permit, Portland established a comprehensive stormwater management program that includes design standards for source control devices as well as best management practices for reducing stormwater pollution. Portland’s runoff retention standard prioritizes the use of green infrastructure over all other control measures for new and redevelopment projects

- involving as little as 500 square feet of impervious area. The city also requires the development of a retrofit plan for existing impervious areas and is implementing programs to replace city-owned impervious areas along streets and on municipal building roofs.
- Seattle: The City of Seattle Stormwater Management Plan was developed to comply with its NPDES permit; it specifically requires that green stormwater infrastructure be used to the maximum extent feasible for single-family residential and parcel-based projects. To help sites meet the requirement, a range of best management practices are identified, including bioretention, use of permeable paving, retention of existing trees, rainwater harvesting, and installation of green roofs.
 - Washington, D.C.: The city operates a separate storm sewer system that conveys stormwater runoff independently from sewage over much of the city. Its stormwater permit requires new development and redevelopment projects to retain 1.2 inches of rainfall from each storm event. Recently adopted regulations to implement the permit's requirements established a first-of-its-kind program that sets retention standards and a volume credit trading system that allows some of the retention obligation to be met off-site. Additionally, the city's wastewater utility, DC Water, has recently proposed to modify its federal consent decree to incorporate green infrastructure. If approved, the consent decree modification would allow DC Water to replace or downsize two planned underground tunnels by substituting green infrastructure practices in certain areas of the city.
 - Prince George's County, Maryland: The county's new stormwater permit requires it to retrofit 20 percent of its impervious surfaces, or about 8,000 acres, to control stormwater runoff over the next five years. To meet this requirement, the county is establishing an innovative public-private partnership (P3) program. A private company will fund, implement, and maintain the retrofit projects, which will consist of green infrastructure practices, with costs to be repaid over time using revenues from the county's stormwater fee. Provided that the program is structured to ensure that the county remains accountable for meeting its permit requirements, the Prince George's County approach could be used as a model in other jurisdictions subject to CSO control requirements.

The State of New Jersey Department of Environmental Protection recently included requirements for 21 NPDES permittees to include green infrastructure in the evaluation of the alternatives for the LTCP:⁵²

“The permittee shall evaluate a range of CSO control alternatives predicted to accomplish the requirements of the CWA. In its evaluation of each potential CSO control alternative, the permittee shall use an NJDEP approved hydrologic, hydraulic and water quality models. The permittee shall utilize the models to simulate the existing conditions and conditions as they are expected to exist after construction and operation of the chosen alternative(s). The permittee shall evaluate the practical and technical feasibility of the proposed CSO control alternative(s), and water quality benefits of constructing and implementing various remedial controls and combination of such controls and activities which shall include, but not be limited to the controls below: i. Green infrastructure. ii....”

The New Jersey permits also require an evaluation of municipal facilities and operations to minimize their flows which could include measures such as water conservation; alternation or reduction in operations; and on-site storage.”⁵³

Finally, the New Jersey permits recognize the importance of coordination between permittees and the need to clarify permittees’ respective obligations in LTCPs:⁵⁴

Where multiple permittees own/operate different portions of a hydraulically connected CSS, the permittee is required to work cooperatively with all other permittees to ensure the LTCPs are consistent. The LTCP documents must be based on the same data, characterization, models, engineering and cost studies, and other information, where appropriate. Each permittee is required to prepare the necessary information for the portion of the hydraulically

⁵² Department of Environmental Protection, State of New Jersey, “Final Surface Water Renewal Permit Action,” March 12, 2015, p. 349-350, www.state.nj.us/dep/dwq/cso-permits.htm (see drop-down menu labeled “Individual Permits”).

⁵³ Ibid, p. 57.

⁵⁴ Ibid, p. 239.

connected system that the permittee owns/operates and provide this information to the other permittees within the hydraulically connected system in a timely manner for LTCP submission.

As the examples above show, states and U.S. EPA are increasingly incorporating municipal green infrastructure commitments into NPDES and MS4 permits, as well as consent decrees. IEPA should require that, at a minimum, the City of Chicago's Green Stormwater Infrastructure Strategy, and other green infrastructure commitments, be incorporated into its NPDES permit. In addition, IEPA should ensure that the City is maximizing its green infrastructure investment in its permit.

In April 2014, the City issued its Green Stormwater Infrastructure Strategy;⁵⁵ stating that "Green stormwater infrastructure is therefore an alternative or complement to conventional stormwater management approaches,"⁵⁶ committing the City to a data-driven, fact-based approach. The City also commits to incorporating green stormwater infrastructure into future public capital projects; incorporating permeable pavement into appropriate sewer main replacement projects; increasing the use of green stormwater infrastructure in streetscape projects; determining the costs and benefits of using green infrastructure to manage stormwater; and developing rainfall frequency data that incorporates recent storms as well as climate change projections. The implementation of all of these initiatives should impact the ability of the City to comply with its NPDES permit and thus should be incorporated therein, with enforceable deadlines and clear numeric goals.

The State of Illinois also recognizes the role of green infrastructure to control stormwater runoff and protect water quality. Since 2012, IEPA's Green Infrastructure Grant (IGIG) program has awarded close to \$15 million to local units of government.⁵⁷ Prior to the creation of IGIG, which is currently being reassessed, the agency commissioned a report to evaluate the

⁵⁵ City of Chicago, "Green Stormwater Infrastructure Strategy," April, 2014, <http://www.cityofchicago.org/content/dam/city/progs/env/ChicagoGreenStormwaterInfrastructureStrategy.pdf>.

⁵⁶ Ibid, p. 40.

⁵⁷ Illinois Environmental Protection Agency, "Illinois Green Infrastructure Grant Program for Stormwater Management," <http://www.epa.illinois.gov/topics/grants-loans/water-financial-assistance/igig/index>.

effectiveness of using green infrastructure to manage stormwater. The report found that:⁵⁸

On average, many of these practices [green infrastructure] are as effective as conventional on-site detention basins in reducing total suspended solids and total nitrogen being discharged to waterways and that they can also reduce runoff volumes and peak flows discharged to urban streams, reducing erosion, sedimentation and flood risks...using green infrastructure can result in substantial savings in both construction and life-cycle costs when compared to using conventional infrastructure to manage runoff in suburban, urban residential and commercial projects.

Given the State's own investment in green infrastructure, and the findings of its own studies supporting the effectiveness of this approach to better manage stormwater, the State should incorporate those findings into NPDES permits.

- The LTCP must consider alternatives for addressing CWA requirements including green infrastructure and CSO treatment.

F. Increased Conveyance Capacity should be studied to reduce the City's CSO and improve Bubbly Creek.

The Great Lakes and Mississippi River Interbasin Study (GLMRIS) found that additional pipelines will be needed to prevent CSOs even after the completion of TARP.⁵⁹ The need to increase conveyance was earlier found in a study commissioned by the U.S. Army Corps of Engineers.⁶⁰ Such

⁵⁸“The Illinois Green Infrastructure Study: A Report to the Illinois Environmental Protection Agency on the Criteria in Section 15 of Public Act 96-0026, the Illinois Green Infrastructure for Clean Water Act of 2009,” Submitted by University of Illinois at Chicago et al, May 28, 2010, p. 5, <http://www.epa.state.il.us/green-infrastructure/docs/draft-final-report.pdf>.

⁵⁹ GLMRIS App. F (Ex. P) at F-23, F-29, and F-454.

⁶⁰ He, J, Son, C.S. Liu, Ying and Gong, C., Hydraulic Transient Study of Mainstream Tunnel System and Control System (1994) (Ex. R). Indeed, it appears from several documents that the MWRD, U.S. EPA and the Corps of Engineers recognized early on that much greater conveyance was needed if TARP was to address all of the CSOs discharging in the Chicago area. U.S. EPA Final EIS (1976) (Ex. S) and USACE, Economic Analysis (1986) (Ex. T). To cut costs, however, it was decided to build a system only capable of addressing MWRD CSOs much of the time.

additional conveyance to the McCook Reservoir might also reduce or eliminate the number of Chicago CSOs, as well as the need for the continued operation of the Racine Ave pumping station, which currently floods into Bubbly Creek.

- The LTCP should consider whether additional conveyance is needed to move stormwater from the north side of Chicago to the McCook Reservoir and whether such conveyance could also address CSOs now flowing into Bubbly Creek.⁶¹

G. The LTCP planning process must incorporate the Policy's public participation process.

The Policy makes public participation a central element of the LTCP development process. U.S. EPA has stated, "Under the CSO Control Policy, the permittee should employ a public participation process that actively involves the affected public in the decision-making to select the long-term CSO controls(s)." CSO Guidance for Permit Writers Section 3.5.1.1. Given the mandate by Congress to involve the public in permitting decisions, 33 U.S.C. §1251(e), critical portions of any plan to control pollution must be presented to the public and made available for public review and comment. *Waterkeeper Alliance, Inc. v. U.S. EPA*, 399 F.3d at 504.

Accordingly, the permit should spell out in detail a planning and public comment process for developing a proper LTCP.

- The Permit should set forth requirements for allowing public comment on the LTCP. At a minimum, the Permit should state:
 - When a draft LTCP must be set forth for public comment,
 - When the plan should be finalized, and
 - That implementation of the LTCP will be made a condition of the next NPDES permit and subject to public comment and review as part of that permit.

⁶¹ Consideration of additional tunnels and other ways to address the major CSO discharges to Bubbly Creek was considered by CTE/AECOM in May 2007 and presented to IEPA (Ex. U). These ideas should be considered by IEPA and the City of Chicago now as means to protect the Bubbly Creek sensitive area.

H. Special Condition #3 No. 6 is inadequate, as implementation of the Nine Minimum Controls must be set forth in detail.

The Draft Permit states the NMC requirements in a generic fashion that would not even be adequate for a Phase I CSO permit, as it fails to contain a best professional judgment determination as to the particular controls that should be put into place by the permittee. CSO Policy II.B. For a proper Phase II CSO permit, the permit writer should have "evaluated the permittee's NMC implementation and documentation efforts" and "should, where appropriate, develop Phase II permit language that requires continued implementation of the NMC. The permit language should be tailored to the permittee's specific circumstances and should incorporate site-specific implementation and recordkeeping requirements." CSO Guidance for Permit Writers Section 4.4.2.

The public has no information regarding whether IEPA has done the required evaluation. If the agency has not, it should. In any event, after the evaluation has been done, it should be reflected in NMC provisions that are tailored to address the Chicago CSO discharges.

- The Permit should set forth in detail how the NMC are to be implemented by the City.

I. The final permit should require the City to analyze the number of skimmer boats needed to address the City's CSOs.

The City of Chicago must undertake an analysis to determine how many skimmer boats it must operate to address solid and floatable materials in its CSOs as part of the implementation of NMC #6.

The MWRD boats are to assure compliance with MWRD permits. There is no reason to anticipate that the MWRD boats can or will adequately address solids and floatables from Chicago CSO discharges.

While every effort should be made to prevent floatables from reaching the water bodies, the Permit must require the City to determine how many skimmer boats it must operate to address the City's CSOs.

J. Special Condition #3 No. 7 should be rewritten to recognize that most of the CAWS has been designated as primary contact, that all of the waters that the IPCB has designated as primary contact use are being used as such and that designated uses may not be removed without a Use Attainability Analysis conducted under 40 CFR § 131.10(g).

Sensitive areas must be considered and properly addressed as part of the LTCP. CSO Policy II.C.3. Not only does the Draft Permit fail to do so,⁶² its language suggests IEPA may remove or disregard protections of sensitive areas in the CAWS.

Special Condition #3 No. 7, which purports to address sensitive areas, ignores the fact that after a seven year process, the IPCB has adopted new use designations and criteria for the CAWS and the Upper Dresden Island Pool of the Lower Des Plaines. These new designations include many "primary contact" use designations decided on by the Board after testimony and full consideration.⁶³ These use designations have been approved by U.S. EPA under Section 303(c) of the CWA.

Moreover, by asking the permittee to list portions of the water bodies that are not suitable for primary contact recreation, the language in Special Condition #3 No. 7 improperly suggests that IEPA could change use designations from primary contact to some other designation or that designated uses need not be protected. All of the waters found by the IPCB to be suitable for primary contact use are, in fact, suitable for such use.⁶⁴ The law is clear that no changes to designated uses, which are a component of water quality standards, 40 CFR 131. 3(i), can be made without a use attainability analysis and a change in designation made by the IPCB with the approval of the U.S. EPA. 33 USC § 1313(c); 40 CFR § 131.10(j).

⁶² It appears from the Draft Permit that the sensitive area analysis has never been done. Certainly, the Draft Permit and Fact Sheet contain no information as to how Special Condition #3 No. 7, which purports to address sensitive areas, relates to preparation of the LTCP, as is the purpose of this provision in relation to the CSO permitting process.

⁶³ These primary contact designations appear at 35 Ill. Adm. Code § 303.220.

⁶⁴ Chicago River Corridor Development Plan (Ex. V); Letter of Regional Administrator Susan Hedman to IPCB, Oct. 10, 2010 (Ex. W); Letter of Acting Assistant Administrator Nancy K. Stoner to Lisa Bonnett May 11, 2011 (Ex. X).

- The Permit should make clear that all of the areas that have been designated as primary contact by the IPCB are being used as such and should be protected as sensitive areas.

K. Bubbly Creek Must Be Designated as a Sensitive Area.

At the permit hearing, numerous persons testified regarding their reliance on Bubbly Creek for water recreation. It is clear that Bubbly Creek is an important recreational resource and supports existing primary contact recreational uses. Plans should be made to enable full fishable/swimmable uses in Bubbly Creek as soon as possible.

- Bubbly Creek should be included as a designated sensitive area in this permit. IEPA must determine in this permit process whether it is physically possible and economically feasible to attain safe primary contact in Bubbly Creek and how quickly it can be done. CSO Policy II.C. 3.b and c.

L. Special condition #3 No. 8 and Special Condition #3 No.18 should be rewritten to assure that there is an opportunity for public comment on the PPP, the Public Notification Plan and CSO O&M plans.

The provisions for establishing the Pollution Prevention Plan, the CSO Operation and Maintenance Plan and the Public Notification Plan seem to contemplate a "public information meeting" but not an opportunity for public comment on the plans. This should be corrected. The public must be allowed to comment on the Pollution Prevention Plan, the CSO Operation and Maintenance Plan and the Public Notification Plan (as well as the LTCP). These plans should be developed as soon as possible.

- Special Condition #3 Nos. 8 and 18 should require the draft Pollution Prevention Plan, the Public Notification Plan and the CSO Operation and Maintenance Plan be created within a year and presented to the public for comment and potential revision. The final Pollution Prevention Plan, Public Notification Plan and CSO Operation and Maintenance Plan should be made conditions of the next NPDES permit.

M. Special Condition #3 No. 9 - The Sewer Use Ordinance Permit Requirement should be clarified.

The Draft Permit Special Condition #3 No. 9 states "if no ordinance exists, such ordinance should be developed and implemented within six months of the effective date of this permit."

Either the required ordinance has been enacted or it has not.

- IEPA should determine now whether the sewer use ordinance has been enacted and whether it is appropriate and amend the special condition language appropriately.

N. Development of the plan contemplated by Special Condition #3 No. 10 should begin immediately and be submitted to IEPA and the public in six months.

There is already abundant evidence that Chicago CSO discharges are causing and contributing to violations of the dissolved oxygen and fecal coliform standards and that these discharges will cause violations of chloride standards when they become applicable to the CAWS.⁶⁵ As a practical matter, the plan to abate violations of water quality standards should be done as part of development of the LTCP. Both development of the abatement plan and the LTCP should be done on an expedited basis.

⁶⁵ Numerous reports show continuing violations of water quality standards in the CAWS including numerous reports that can be found on the MWRD website at <https://www.mwrdd.org/irj/portal/anonymous/WQM>. See e.g., IEPA 303(d) (Ex. I); MWRD Monitoring and Research Department, Report No. 14-21 (Ex. J), MWRD M&R 13-35 (ex. K), and MWRD 2014 Ambient Water (Ex. L), which show waters listed for violations of numerous criteria including DO values in CAWS below 3.0 mg/L, fecal coliform values far in excess of those allowed under 35 Ill. Adm. Code § 302.209 and chloride levels above the 500 mg/L level that will become applicable to the CAWS in 2018. GLMRIS App. B (Ex. Y) shows the existing impairments of waters receiving pollution from the Chicago CSOs B-26; GLMRIS App. F (Ex. P) shows that the CSOs and the resulting violations of water quality standards are likely to continue for the foreseeable future. F-127 to F 147. While, of course, there are sources of BOD, CL and fecal coliform to the CAWS in addition to the City of Chicago CSOs, it is certain that the large number of Chicago CSOs have contributed to these violations and will continue to do so. See, MWRD, Petition for Variance from Dissolved Oxygen Standards, p. 11 (Ex. F).

➤ Special Condition #3 No. 10 should require that the City immediately begin development of a plan to assess and abate ongoing impacts from CSO discharges.

O. The Monitoring required in Special Condition #3 - No. 11 - 17 must be clarified and improved in five important respects:

O.1 Discharge monitoring, reporting, and notification requirements should be enhanced and set forth in more detail.

Special Condition #3 Nos. 11-17 require the City to monitor the frequency of discharge and estimate the duration of each discharge from 70 of 184 CSO outfalls, and allow the City to rely in large part on data collected by MWRD.⁶⁶

This monitoring is exclusively limited to visual inspections, to be performed only once per month during dry weather and within 24 hours after the end of a precipitation event. Reliance on visual inspections alone is insufficient to characterize the nature of CSO discharges and their impact on water quality in the receiving waters. According to U.S. EPA's Guidance for Nine Minimum Controls, the permittee can rely on visual observation or "an appropriately placed flow or level sensor."⁶⁷ Automated systems for measuring frequency and duration of discharge are commonly available and well within the capabilities of the City.

Moreover, the Draft Permit even fails to require the City to, "measure and record the total daily rainfall, using a suitably placed rain gage."⁶⁸ Special Condition #3 No. 11 only requires the City to provide, "Estimates [emphasis added] of storm duration and total rainfall."

The City is also allowed to rely on MWRD data to the extent it is available and the Draft Permit does discuss City outfalls that the Draft Permit states are now monitored by MWRD. However, MWRD is not

⁶⁶ Draft NPDES Permit No. IL0045012, City of Chicago Combined Sewer Overflows, Special Condition #3, Nos. 11-17, pp. 9-13, February 27, 2015.

⁶⁷ Combined Sewer Overflows: Guidance for Nine Minimum Controls, U.S. EPA Office of Water, EPA 832-B-95-003, p. 10-2, May 1995.

⁶⁸ Ibid, p. 10-2.

required to do this monitoring and it is unclear where the public is to obtain information on Chicago CSOs that are monitored by MWRD. Will the City use information collected by MWRD to fill out the reports required by Special Condition #3 No.14 or will IEPA and the public be expected to obtain the information from MWRD? Further, it is unclear whether CSOs are to be monitored that are not monitored by MWRD. Are the outfalls that are not monitored by MWRD required to be monitored by the City, or may the City rely on the notion that the CSOs monitored by the MWRD are "Representative?"

- The Permit must require monitoring of frequency and duration of CSO discharges that are sufficient to “at a minimum...develop information on the frequency of overflows at individual points in the system.”⁶⁹ This should require the City to install sufficient automated sensors that can collect high quality data on the frequency and duration of CSO discharges, as well as expanding visual inspections to additional outfalls.
- The Permit should provide that the City is responsible for the completeness and accuracy of all monitoring data and the City must separately report the MWRD data on which it relies to comply with its CWA obligations.

O.2 Special Conditions #3 No. 11-7, #4 and #5: Effluent monitoring must be required to determine compliance with water quality standards for pathogens, dissolved oxygen, chloride, and other numeric standards.

The Draft Permit does not appear to require any chemical monitoring of the constituents of the pollution discharged from the CSOs except for two of the 184 CSOs, which are monitored for flow, BOD₅, suspended solids, and pH. It is impossible to see how IEPA will be able to "effectively characterize the CSO impacts and the efficacy of the CSO controls" without substantially more chemical monitoring. CSO Policy NMC #9. As stated in the CSO Policy, “Monitoring parameters should include, for example, oxygen demanding pollutants, nutrients, toxic pollutants, sediment contaminants, pathogens, bacteriological indicators (e.g. Enterococcus, E. Coli) and toxicity.” (II.C.1.c)⁷⁰

⁶⁹ Ibid.

⁷⁰ CSOs are known to contain all of these pollutants. CSO Guidance for Permit Writers Section 1.1.

The failure of the Draft Permit to require monitoring of the Chicago CSOs with regard to the pollutants discharged violates basic principles of NPDES monitoring and Illinois law. 40 CFR 122.48, 35 Ill. Adm. Code § 309.146. While perhaps less than all of the CSOs need to be monitored for all pollutants, certainly many more than two should be monitored and a plan should be developed to assure that the discharges are properly characterized.

- The Draft Permit must be revised to require monitoring of the CSOs for BOD₅, fecal coliform, chloride, phosphorus, and other pollutants.

O.3 Ambient monitoring is necessary to determine compliance with the dissolved oxygen criteria.

It is well established that BOD₅ and nutrient pollution harm oxygen levels in water bodies even if there are high levels of DO in the effluent.⁷¹ Thus, ambient monitoring must be required that is sufficient to determine whether Special Condition #3 No. 10 and Special Condition #5 of the permit are being violated. As stated by 35 Ill. Adm. Code § 309.146 (a)(2), "The Agency shall require every holder of an NPDES Permit, as a condition of the NPDES Permit issued to the holder, to: ... (2) Make reports adequate to determine the compliance or lack of compliance with all effluent limits and special conditions in the permit ..."

Because of the effect of CSO discharges on dissolved oxygen levels, ambient continuous dissolved oxygen monitoring is needed in a number of places in the CAWS and in the Lower Des Plaines, which are also affected by Chicago CSOs⁷². The permit does not appear to require the City to

⁷¹ Baird, Roger B. and Smith, Roy-Keith, Ph.D., *Third Century of Biochemical Oxygen Demand*, Water Environment Federation (2002); Welch, E.B. *Ecological Effects of Wastewater*, Chapman and Hall (2d Ed. 1992) pp. 282-89; Dodds, Walter and Whiles, Matt, *Freshwater Ecology*, Academic Press (2d Ed. 2010) pp. 328-29; Hammer, Mark J., and Hammer, Mark J. Jr., *Water and Wastewater Technology*, Prentice Hall (3d Ed. 1996) pp. 72-76; Burkholder, JoAnn M., Glibert, Patricia M. *Eutrophication and Oligotrophication*, Encyclopedia of Biodiversity, Vol. #, P. 349 (2013) Pielou, E.C. *Fresh Water*, U. of Chicago Press (1998) p. 235; MRC Petition (Ex. Z), Lanyon, Impacts of Chicago Point Sources on the Upper Illinois and Testimony of Professor Michael Lemke to IPCB 4-026 (Ex. AA).

⁷² Hey and Assoc., *Des Plaines River Use Attainability Analysis* (2003) (Ex. C) pp. 2-34 to 2-38 (showing water quality standards being violated in Lower Des Plaines).

perform any continuous dissolved oxygen monitoring or even to assure that this critical data is collected through the auspices of MWRD or otherwise.

MWRD does currently do some continuous dissolved oxygen monitoring, although it has apparently been allowed to reduce critical monitoring in some locations. The Draft Permit does not discuss monitoring of water quality in the CAWS or the Lower Des Plaines at all. The extent to which the City should be allowed to rely on MWRD's continuous dissolved oxygen monitoring is not specified in the Fact Sheet or Draft Permit.

It is established that BOD₅ and nutrient pollution may cause effects on DO levels many miles below the discharge point.⁷³ Continuous dissolved oxygen monitoring should be required of the City in a number of locations that are affected by CSO pollution and other pollution to the CAWS and the Lower Des Plaines. In particular, continuous dissolved oxygen monitoring should be required in Little Calumet Section HA-05 to the east of the Calumet plant, near Joliet on the Sanitary and Ship Canal and at suitable locations between Joliet and Channahon on the Des Plaines.⁷⁴

- The Permit must require continuous dissolved oxygen monitoring and fecal coliform sufficient to determine whether dischargers from Chicago CSOs are causing or contributing to violations of numeric WQS.

O.4 Ambient Monitoring of compliance with narrative standards is necessary.

Along with requiring monitoring to determine compliance with DO standards and other numeric standards that the City CSOs are likely to affect, the Permit should also require monitoring to determine compliance with 35 Ill. Adm. Code §§ 302.203 and 302.403, the narrative "unnatural sludge" and "offensive conditions" standards applicable to the Des Plaines River and the CAWS. These are water quality standards against which compliance must be gauged and the standards regarding "offensive conditions" are particularly applicable to the type of floatable discharges and

⁷³ Lanyon Impact and Lemke testimony, CDM report attachments (Ex. AA).

⁷⁴ Continuous dissolved oxygen monitoring is also needed north of the O'Brien STP discharge point but because this area is subject to discharges from the O'Brien WWTP, and Evanston and Skokie CSO discharges (GLMRIS App. F Ex. P, at F-4), requirements for this continuous dissolved oxygen monitoring should be set forth in future MWRD, Evanston and Skokie CSO NPDES permits.

other pollutants frequently resulting from CSOs. Illinois law requires monitoring necessary to determine compliance with permit limits and special conditions, such as Special Condition 5 of the Draft Permit. 35 Ill. Adm. Code § 309.146(a)(2).

- The Permit should require monitoring to determine if Chicago CSOs are causing or contributing to sludge or bottom deposits, floating debris, visible oil, odor, plant, or algal growth of turbidity of other-than-natural origin.

O.5 Monitoring and reporting of incidents relating to CSO impacts must be required.

Among the NMCs is a requirement for "[m]onitoring to effectively characterize CSO impacts and the efficacy of CSO controls." CSO Policy II.B NMC#9. However, notably absent from the draft permit are requirements to collect "water quality data and information on chemical, physical and biological impacts resulting from CSOs (e.g. beach closings, floatable, wash-up episodes, fish kills, impaired habitat for wildlife)." CSO Guidance for Permit Writers Section 4.4.19.

The permit does not currently require the City to monitor or report any incidents or summary of incidents related to the discharge of CSOs. U.S. EPA recommends that CSO permittees do so and that the report include incidents such as beach closing or postings, shoreline wash-up of floatables, fish kills, hazards to small boat navigation, and street and basement flooding.⁷⁵

All of the above incidents are known to occur in the CAWS and in the City of Chicago. With regards to street and basement flooding, these kinds of events happen with increasing regularity as a result of rainfall events that overwhelm the existing stormwater infrastructure. Indeed, the City is applying to the federal Department of Housing and Urban Development's National Disaster Resilience Competition for funding to help address well-documented problems with urban flooding and stormwater. These events now result in widespread flooding due to back-ups of the CSS into people's homes, basements, and into City streets; they also result in CSO discharges. A recent report from the Illinois Department of Natural Resources indicates

⁷⁵ Combined Sewer Overflows: Guidance for Nine Minimum Controls, U.S. EPA Office of Water, EPA 832-B-95-003, p. 10-4, May 1995.

that well over 100,000 insurance claims have been made in Cook County and the City of Chicago due to problems associated with urban flooding between 2007 and 2014.⁷⁶

P. Special Condition #3 - No. 18: Public notification

The Special Condition governing public notifications (SC #3 No.18) states that a public notification program "shall be developed," and recognizes that a public notification plan should have been developed under the 2002 permit. The condition is written as though the permit writer has no idea whether the permittee complied with its 2002 permit requirements or not.

As discussed in Section IIA, *supra*, the Draft Permit should be a Phase II or Post Phase II permit. In such a permit, IEPA must review the results of past compliance with the NMC and the LTCP, follow up with the permittee and present this information to the public so that needed adjustments and improvements can be made to the NMC, the LTCP and the permit. CSO Guidance for Permit Writers Chapter 4. Thus, IEPA cannot simply make reference at this stage to the need to develop a notification plan. It must do the necessary research to determine what specifically has been done, and what should be done, with regard to public notification.

- IEPA should determine what has been done to implement the public notification requirement of Section II.B.8 of the CSO Policy, determine what remains to be done and require specific steps be taken to ensure that the public receives adequate notification of CSO occurrences and CSO impacts. As noted in EPA's "Combined Sewer Overflows Guidance for Nine Minimum Controls, while "public notification actions have no direct effect on reducing overflows and pollutant loads from CSO systems, or on minimizing water quality impacts...notification...will diminish the potential risk of adverse public health effects. Such actions will also increase public awareness and might increase public support for CSO control programs." Given the City of Chicago's increasing investment in riverfront amenities, and the use of the CAWS for recreational activities, public notification plays an increasingly important role.

⁷⁶ Report for the Urban Flooding Awareness Act, Illinois Department of Natural Resources, map at p. 9, June 2015. Available at <http://www.sws.uiuc.edu/hilites/more.asp?id=ufaa&fr=hi>.

CONCLUSION

The Draft Permit should be substantially rewritten to address the problems discussed above and re-presented for public comment pursuant to 35 Ill. Adm. Code § 309.120.

Sincerely,

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