ILLINOIS POLLUTION CONTROL BOARD
December 16, 2021

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO,	)	
Petitioner,	)	
v.	)	PCB 16-28
	)	(Time Limited Water Quality Standard)
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY,	)	
Respondent.	)	

OPINION AND ORDER OF THE BOARD (by B.F. Currie):

On July 26, 2018, the Metropolitan Water Reclamation District of Greater Chicago (MWRD) filed an amended petition for a dissolved oxygen time-limited water quality standard (TLWQS). 35 Ill. Adm. Code 104 Subpart E. A TLWQS is a form of temporary relief from a water quality standard that the Board may issue for a single discharger, multiple dischargers, a watershed, a water body, or a waterbody segment. Dischargers petitioning the Board for a TLWQS must demonstrate that attaining the water quality standard is infeasible for the TLWQS' proposed term because of one or more specified factors, such as human-caused conditions that cannot be timely remedied. Generally, the TLWQS consists of an interim use and interim criterion for a specific pollutant or water quality parameter that reflect the waterway's highest attainable condition during the term of that relief. The term must last no longer than is necessary to achieve that highest attainable condition.

MWRD is seeking a five-year TLWQS for discharges from Combined Sewer Overflow (CSO) outfalls into the Chicago Area Waterways System (CAWS). MWRD requests a TLWQS for CSO outfalls covered under the National Pollutant Discharge Elimination System (NPDES) permits issued to its O'Brien, Calumet and Stickney water reclamation plants. Today, the Board grants MWRD's petition for a five-year TLWQS for dissolved oxygen subject to several conditions.

This opinion first sets out the legal background for a TLWQS, including the federal and State requirements to successfully petition for a TLWQS followed by review of the factual background, including the watersheds encompassed by this TLWQS. It then lays out the procedural background, starting with the initial water quality standard (WQS) rulemaking, MWRD's petition for a variance for dissolved oxygen, the conversion of that variance to a TLWQS petition under Public Act 99-937, and the orders and hearing in this proceeding. Then the discussion section of the opinion addresses the arguments set forth by MWRD and the recommendations from the Illinois Environmental Protection Agency and states the Board's findings regarding the dissolved oxygen TLWQS. Finally, the Board reaches its conclusion and

establishes the TLWQS Order to govern dissolved oxygen reduction activities and effluent limits for a five-year term.

LEGAL BACKGROUND

MWRD is seeking a TLWQS from the Board's dissolved oxygen water quality standards in 35 Ill. Adm. Code 302.206 and 302.405. The Board established the dissolved oxygen WQS at issue here under Section 303 of the federal Clean Water Act (CWA), 33 USC §1251(a)(2), which requires states to adopt WQSs that include designated uses and the criteria to protect such uses. *See* 40 C.F.R. § 131.2. The Board adopted the dissolved oxygen WQS in Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(D) (June 18, 2015).

The water quality criteria represent "the conditions (e.g. concentrations of particular chemicals, levels of certain parameters) sufficient to restore and maintain the chemical, physical, and biological integrity of the water bodies and protect applicable designated uses." Water Quality Standards Handbook: Second Edition, Chapter 3: Water Quality Criteria, p.1 (EPA-823-B-17-001). Part 303 of the Board's rules contains water use designations which determine for a given body of water which set of Part 302 WQS applies.

> The Chicago Area Waterways and Lower Des Plaines River Waters are designated to protect for primary contact recreation, incidental contact or non-contact recreational uses (except where designated as non-recreational waters), commercial activity (including navigation and industrial water supply uses), and the highest quality aquatic life and wildlife attainable, limited only by the physical condition of these waters and hydrologic modifications to these waters. Except for the Chicago River, these waters are required to meet the standards contained in 35 Ill. Adm. Code 302, Subpart D. 35 Ill. Adm. Code 303.204.

The dissolved oxygen WQS at issue in this petition is found in Parts 302.206 and 302.405(c) of 35 Ill. Adm. Code.

> Section 302.405 Dissolved Oxygen
>
> Dissolved oxygen concentrations shall not be less than the applicable values in subsections (a), (b), (c), and (d).
>
> a) For South Fork of the South Branch of the Chicago River (Bubbly Creek), dissolved oxygen concentrations shall not be less than 4.0 mg/L at any time.
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> * * *

c) For the Chicago Area Waterway System Aquatic Life Use A waters listed in 35 Ill. Adm. Code 303.235:

1) during the period of March through July, 5.0 mg/L at any time; and

2) during the period of August through February:

A) 4.0 mg/L as a daily minimum averaged over 7 days; and

B) 3.5 mg/L at any time.

d) For the Chicago Area Waterway System and Brandon Pool Aquatic Life Use B waters listed in Section 303.240: 1) 4.0 mg/L as a daily minimum averaged over 7 days; and 2) 3.5 mg/L at any time. 35 Ill. Adm. Code 302.405(a), (c) and (d).

The Board established the dissolved oxygen (DO) WQS to protect aquatic organisms from acutely lethal effects as well as chronic, sublethal effects of low dissolved oxygen. Water Quality Standards and Effluent Limitations for the Chicago Area Waterway System and Lower Des Plaines River Proposed Amendments to 35 Ill. Adm. Code 301, 302, 303, and 304, R08-9(D), slip op. at 14 (Sept. 18, 2014). The MWRD notes that its CSO outfalls, which provide relief from local flooding during heavy wet weather events due to finite pumping and hydraulic capacity of the collection system and treatment plants, contribute to nonattainment of the dissolved oxygen water quality standards in the CAWS. Am. Pet. at 9.

Because the Board's dissolved oxygen WQS was established pursuant to the CWA, any variation from that WQS must satisfy the CWA and the USEPA. In 2015, the USEPA published rules under the CWA permitting variances from a WQS for a limited time period. *See* 40 C.F.R. §131.14. A WQS variance is defined as a "time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance." 40 C.F.R. 131.3(o), *see also* 40 C.F.R. 131.14(b)(1)(ii). The Illinois Environmental Protection Agency (IEPA or Agency) proposed rules to the Board to update its water quality variance to make them more compatible with the USEPA requirements. *See* Regulatory Relief Mechanisms: Proposed New 35 Ill. Adm. Code Part 104, Subpart E, R18-18. In the Illinois Environmental Protection Act (Act), the TLWQS has replaced the variance as the mechanism for seeking temporary relief from a WQS. *See* 415 ILCS 5/3.488, 38.5 (2020); 35 Ill. Adm. Code 104.515(b). "'Time-limited water quality standard' has the meaning ascribed to the term 'water quality standards variance' in 40 C.F.R. § 131.3(o)." *See* 415 ILCS 5/3.488 (2020).

To be approved by the USEPA, a state order granting a new temporary standard must show that attaining the designated use and criterion are not feasible throughout the term of the WQS variance because of one of the factors listed in 40 C.F.R. § 131.10(g) (10(g) Factors):

1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact. 40 C.F.R. § 131.10(g); *see also* 40 C.F.R. § 131.14(b)(2)(i)(A)(1).

The Act and Board rules, incorporating the CWA and related federal regulations, allow a discharger, or dischargers as a class, to request a TLWQS from a WQS that would otherwise apply to them. *See* 415 ILCS 5/38.5 (enacted by P.A. 99-937, eff. Feb. 24, 2017); 35 Ill. Adm. Code 104.Subpart E.

The TLWQS, once adopted by the Board and approved by USEPA, will be the applicable WQS for the Petitioners for the TLWQS term. 35 Ill. Adm. Code 104.505(d). Any limitations and requirements necessary to implement the TLWQS will be included as enforceable conditions of the NPDES permit for any permittee granted coverage under the TLWQS by the Board or Agency. *Id*. The Board will maintain, in its WQS, the underlying designated use and dissolved oxygen standard for dischargers not covered by the TLWQS, unless the Board adopts and USEPA approves a revision to the underlying designated use and dissolved oxygen standard consistent with 40 C.F.R. §§ 131.10 and 131.11. 35 Ill. Adm. Code 104.565(a). If a covered discharger does not conduct a re-evaluation as required and scheduled in the TLWQS or those results are not submitted to the USEPA, the TLWQS will no longer be the applicable WQS for that discharger. 35 Ill. Adm. Code 104.580(h).

A TLWQS proceeding is non-adjudicatory and not subject to the procedural requirements for rulemakings. 35 Ill. Adm. Code 101.108(a). The procedures that govern a TLWQS proceeding are found in Part 104, Subpart E of the Board's procedural rules implementing Section 38.5 of the Act, and the federal rules implementing the CWA. 415 ILCS 5/38.5 (2020); 35 Ill. Adm. Code 104.Subpart E; 40 C.F.R. 131.

A TLWQS petition must satisfy four procedural steps to qualify for a TLWQS. First, the TLWQS petition must satisfy several content requirements, and the Board must determine whether these requirements are met before the petition may proceed to hearing. Second, the petitioner must demonstrate, through its submissions, testimony, and argument, that it meets the requirements for a TLWQS. Third, in approving a TLWQS the Board must find that the petitioner has met the requirements for a TLWQS, establish the re-evaluation schedule for TLWQS with terms longer than five years, and establish the requirements for any other discharger in the watershed to obtain coverage under the TLWQS. Fourth, the USEPA must separately evaluate whether a Board-approved TLWQS satisfies the CWA and related federal regulations. Each of these steps must be satisfied for a TLWQS to apply. The applicable statutes, regulations and rules are addressed in the following sections.

TLWQS Petition Requirements

Generally, once a TLWQS petition is timely filed[1] in compliance with 35 Ill Adm Code 104.525(a) and (b), the applicable WQS is stayed for that discharger until the petition is finally approved or "all rights to judicial review of the Board's order denying the petition or amended petition are exhausted." 35 Ill. Adm. Code 104.525(b); *see also* 415 ILCS 5/38.5(h)(4) (2020). The IEPA must file a response to the TLWQS petition identifying the discharger or class of dischargers, the relevant watershed, and the appropriate type of TLWQS and recommending the date by which compliant petitions are due. 415 ILCS 5/38.5(c) and (e) (2020); 35 Ill. Adm. Code 104.535. The Board must then issue an order establishing the classes of dischargers that may be covered by the TLWQS and the deadline by which petitions must be filed or amended. 415 ILCS 38.5(f) (2020); 35 Ill. Adm. Code 104.540.

After issuing the above order, the Board reviews the TLWQS petition for substantial compliance with the requirements of 40 C.F.R. § 131.14, Section 38.5 of the Act, and the Board's procedural rules implementing Section 38.5 of the Act. 415 ILCS 38.5(g) (2020); *see also* 35 Ill. Adm. Code 104.530, 545(a). Section 104.530 of the Board's rules specifies the

[1] "Any petition for a variance from a water quality standard under Section 35 of this Act that was filed with the Board before the effective date of this amendatory Act of the 99th General Assembly and that has not been disposed of by the Board shall be converted, by operation of law, into a petition for a time-limited water quality standard under this Section on the effective date of this amendatory Act of the 99th General Assembly [February 24, 2017]." 415 ILCS 5/38.5(c) (2020).

content requirements of a TLWQS petition.[2] 35 Ill. Adm. Code 104.530. Section 104.530(a) lists 17 requirements that must be met by a TLWQS petition. 35 Ill. Adm. Code 104.530(a).

When the Board finds the TLWQS petition substantially complies as described above, IEPA must file its recommendation regarding whether the petitioners made their demonstrations under Section 104.560, the eligibility criteria for other dischargers to be covered under the TLWQS, and the recommended term of the TLWQS. 35 Ill. Adm. Code 104.550(a).

Statutory and Regulatory Requirements for Board Hearing and Order

Illinois TLWQS Requirements

After IEPA's recommendation is filed, the Board will give notice of and hold a public hearing on the TLWQS petition, receiving testimony and public comment. 35 Ill. Adm. Code 104.555. To meet the requirements for a TLWQS, a petitioner must demonstrate that one or more of the 10(g) Factors prevent the petitioner from attaining the WQS. *See* 35 Ill. Adm. Code 104.560(a).[3] A petitioner must also demonstrate that the TLWQS term "is the minimum necessary to achieve the highest attainable condition" and justify the TLWQS term "by describing the pollutant control activities required to achieve the highest attainable condition, including those activities through a Pollutant Minimization Program." 35 Ill. Adm. Code 104.560(c).

Board Opinion and Order Requirements

Where the Board finds that the petitioner has satisfied its burden of demonstrating it meets the requirements of Section 104.560 of its procedural rules, the Board order adopting a TLWQS must then include several provisions. First, the order must identify the pollutant at issue, the watershed to which the TLWQS applies, and the entities covered by the TLWQS. 35 Ill. Adm. Code 104.565(d)(1) and (2)(A).

Second, the order must quantify the highest attainable condition [HAC] as either:

i) The highest attainable interim use and interim criterion; or

ii) If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflect the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the Board adopts the TLWQS and with the adoption and

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[2] Section 104.530 incorporates the requirements set out in 40 C.F.R. § 131.14(b).

[3] The Board's rule (35 Ill. Adm. Code 104.560(a)(1)-(6)) reflects the 10(g) Factors set out in the federal regulations, but it also includes a 7th factor: "[a]ctions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented." 35 Ill. Adm. Code 104.560(a)(7).

implementation of a Pollutant Minimization Program. 35 Ill. Adm. Code 104.565(d)(4)(B).

Third, the order must establish the requirements and conditions applicable throughout the TLWQS term that will represent the HAC of the watershed throughout the term and will not lower the currently attained ambient water quality. 35 Ill. Adm. Code 104.565(d)(3).

Fourth, the order must establish the TLWQS term from the date of USEPA approval or a specific date. 35 Ill. Adm. Code 104.565(d)(6). When the TLWQS term is greater than five years, the order must establish "a specified frequency [of no more than five years] to re-evaluate the highest attainable condition under Section 104.580." 35 Ill. Adm. Code 104.565(d)(7). The order must also provide that the "TLWQS will no longer be the applicable [WQS] for purposes of the Clean Water Act if the petitioner does not conduct a re-evaluation consistent with the frequency specified in the TLWQS or the results are not submitted to USEPA as required by Section 104.580." 35 Ill. Adm. Code 104.565(d)(8).

Fifth, the order must provide "[e]ligibility criteria that may be used by new or existing dischargers or classes of dischargers to obtain coverage under the TLWQS during its duration". 35 Ill. Adm. Code 104.565(d)(2)(A)(ii). The rules further state:

a) Any discharger that has not obtained a TLWQS may obtain coverage under a Board-approved TLWQS by satisfying, at the time of renewal or modification of that person's NPDES permit, or at the time the person files an application for certification under section 401 of the federal Clean Water Act, the Board-approved criteria for coverage under the TLWQS.

b) Any applicant obtaining coverage under a Board-approved TLWQS must comply with the requirements and conditions that apply throughout the term of the TLWQS established under Section 104.565(d).

c) Any applicant obtaining coverage under a Board-approved TLWQS must participate in any re-evaluations conducted under Section 104.580. 35 Ill. Adm. Code 104.575.

Federal TLWQS Requirements

Before a TLWQS becomes effective, the IEPA must submit the final, Board-approved TLWQS to the USEPA for approval in compliance with Section 303(c) of the CWA and 40 C.F.R. §§ 131.20 and 131.21. 35 Ill. Adm. Code 104.570(a); *see also* 40 C.F.R. § 131.14. The USEPA must either notify the State that the TLWQS is approved within 60 days or that the TLWQS are disapproved within 90 days. 40 C.F.R. § 131.21(a). The notification of disapproval must explain why the approved TLWQS does not comply with the requirements of the CWA and related regulations and specify the changes needed to comply. *Id.*

Additionally, the federal regulations provide guidance on the impact a TLWQS would have on a petitioner's NPDES permit.

> (c) Implementing WQS variances in NPDES permits. A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements pursuant to § 122.44(d) of this chapter for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance. 40 C.F.R. § 131.14(c).

When the USEPA approves of the TLWQS, the TLWQS will be the applicable WQS for the named dischargers under its terms.[4]

FACTUAL BACKGROUND

The Metropolitan Water Reclamation District operates three water reclamation plants at issue here, the O'Brien plant at 3500 West Howard Street, Skokie; the Stickney plant at 6001 West Pershing Road, Cicero; and the Calumet plant at 400 East 130th Street, Chicago. Am. Pet. at 4. All three plants are located in Cook County. Each plant is covered under a NPDES permit which allows for discharge from CSO outfalls into parts of the CAWS during CSO events. Am. Pet at 5. MWRD notes that while several reaches of CAWS do not meet the current Board standards for dissolved oxygen, none of them consistently attain the dissolved oxygen WQS during and after wet-weather events when the dissolved oxygen levels can be significantly lower than the standards due to CSO discharges. Am. Pet. at 2, 9.

Since 1972, MWRD has been planning and constructing the Tunnel and Reservoir Plan (TARP) with the goal of eliminating combined sewer overflows into CAWS. Exh. J at 1. A combined sewer system (CSS) collects both rainwater runoff and wastewater. 35 Ill. Adm. 301.255. If, during heavy rainfall events, the capacity of the CSS is reached, the system uses combined sewer overflow outfalls to provide relief to the system. Am. Pet. at 9. Generally, when the CSO outfalls are used, "untreated stormwater and wastewater, discharge directly to nearby streams, rivers, and other water bodies. Combined sewer overflows […] contain untreated or partially treated human and industrial waste, toxic materials, and debris as well as stormwater." USEPA, Combined Sewer Overflow, https://www.epa.gov/npdes/combined-sewer-overflows-csos (last visited Dec. 9, 2021).

Heavy rain can overwhelm MWRD's system, causing a number of harmful issues throughout the area, including flooding basements of residences and businesses with stormwater and sewer water, flooding streets, and discharging raw sewage into Lake Michigan. Am. Pet at

[4] "[T]he TLWQS will no longer be the applicable water quality standard for purposes of the Clean Water Act if the petitioner does not conduct a re-evaluation consistent with the frequency specified in the TLWQS or the results are not submitted to USEPA as required by Section 104.580." 35 Ill. Adm. Code 104.565(d)(8).

9. Chicago and many surrounding older suburbs are served by combined sewers which carry both sanitary and stormwater flow to reclamation plants. However, during periods of heavy rainfall, the system becomes overwhelmed by the volume of stormwater. This causes MWRD to release excess flow at discharge points from the O'Brien, Stickney and Calumet plants. Am. Pet. at 9. A map of the MWRD CSO outfalls is attached as Attachment A. A map of the TARP system is attached as Attachment B.

During wet weather events in the Chicago area, the TARP tunnel system captures the sewer and stormwater overflow and directs it to reservoirs that hold the water until it can be treated by the water treatment plants. Currently, no part of CAWS consistently meets the Board's dissolved oxygen standard during wet weather events. Am. Pet. at 4, Rec. at 7. During and after wet weather events, the measured dissolved oxygen in CAWS can be significantly lower than the WQS. Am. Pet. at 4. MWRD also points to recent reductions in the amount of water it is allowed to divert from Lake Michigan into the CAWS as another contributing factor to being unable to meet the dissolved oxygen standard. Am. Pet at 9-10. "[F]urther reductions that are expected to occur in the future[] should only increase the frequency of DO nonattainment situations in the CAWS." Am. Pet. at 10.

TARP is still under construction, with the final portion scheduled to be completed in 2029. Am. Pet at 11. The increased storage volume that will be available once TARP is completed is expected to significantly decrease combined sewer overflow events in the system. Am. Pet. at 13.

MWRD seeks a five-year TLWQS for the combined sewer overflow discharges governed by the NPDES Permits issued to the O'Brien, Stickney, and Calumet Plants. Am. Pet. at 1. While TARP is still under construction, MWRD does not have the reservoir capacity during wet weather events to hold the excess water to treat it before discharging at the outfalls. Am. Pet at 13. Currently, during wet weather events, the excess flow is discharged through the outfalls. *Id*. MWRD projects that combined sewer overflows will continue to happen until TARP is completed in 2029. Am. Pet at 21. The alternative to CSOs, as described by MWRD, would be accepting only the volume of flow into the TARP system that the current reservoirs could hold. Am. Pet at 13. This would lead to potential widespread property damage and harmful health effects including diluted sewage backing up into homes and buildings. *Id*.

Other steps that MWRD could take to increase dissolved oxygen and reduce combined sewer overflow events include installing additional aeration stations and aerated flow augmented stations within the CAWS. Am. Pet at 11. MWRD estimates that it would cost approximately $669 million to install additional aeration stations and aerated flow augmented stations. Am. Pet at 12. MWRD argues that the installation of either system would not guarantee compliance with the dissolved oxygen standard. *Id*. The TLWQS issued in this Board opinion and order would expire five years after USEPA approval, which will likely be approximately three years before the anticipated completion of TARP. MWRD expects that it would likely request a second dissolved oxygen TLWQS once this five-year standard expires. The Board anticipates that MWRD would request the second TLWQS within the twelve-month period before the expiration of this TLWQS.

PROCEDURAL BACKGROUND

In the rulemaking regarding the water quality standards for CAWS and the Lower Des Plaines River (LDPR), the Board adopted a final aquatic life WQS for CAWS, including a standard for dissolved oxygen. 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, R08-9(D), slip op. (June 18, 2015).

On July 21, 2015, MWRD filed its petition (Pet.) for a variance from the dissolved oxygen water quality standards. Once Public Act 99-337 took effect on February 24, 2017, all pending petitions for variances before the Board, including MWRD's dissolved oxygen variance petition were converted into petitions for time-limited water quality standards. 415 ILCS 5/38.5(a) and (c) (2020). On April 12, 2017, the Board issued an order that established the dischargers and class of dischargers that may be covered by the requested TLWQS and set a petition-filing deadline. Metropolitan Water Reclamation District of Greater Chicago v. IEPA, PCB 16-28, slip op. at 1 (Apr. 12, 2017).

Section 38.5(g) of the Act requires the Board to evaluate each petition to determine whether it is in substantial compliance with 40 C.F.R. § 131.14. 415 ILCS 5/38.5(g) (2020). Additionally, if the Board finds that a currently pending petition does not substantially comply, the Board will enter an interim order identifying the petition's deficiencies. 415 ILCS 5/38.5(h)(3) (2020).

On June 22, 2017, the Board found that MWRD's 2015 petition "generally lacks information required by [40 C.F.R.] Section 131.14." MWRD v. IEPA, PCB 16-28, slip op. at 2 (June 22, 2017). The Board directed MWRD to file an amended petition to remedy the deficiencies. *Id*. On July 26, 2018, MWRD filed an amended petition (Am. Pet.). On March 28, 2019, the Board found the amended petition contained the required components for a TLWQS petition and was therefore in substantial compliance with 40 C.F.R. § 131.14, Section 38.5 of the Act, and Section 104.530 of the Board rules. MWRD v. IEPA, PCB 16-28, slip op. at 1 (Mar. 28, 2019). The Board also directed IEPA to file its recommendation and to transmit copies of its recommendation and the amended petition to USEPA. *Id*. at 5. On May 13, 2019, IEPA filed its recommendation (Rec.).

On November 8, 2019, the pre-filed testimony of Dustin Gallagher was submitted on behalf of MWRD. On November 26, 2019, Friends of the Chicago River, the Illinois Chapter of Sierra Club and Openlands submitted prefiled questions. On November 27, 2019, the Board submitted questions to MWRD and IEPA, and IEPA submitted questions to MWRD. On March 13, 2020, MWRD and IEPA filed their responses.

The notice of hearing was issued by the hearing officer on June 12, 2020, and published in the *Chicago Sun-Times* on June 16, 2020, and in the *Springfield Journal-Register* on June 17, 2020. The hearing was held on August 4, 2020. On September 3, 2020, USEPA submitted its comment regarding MWRD's petition (USEPA Comment).

On September 30, 2020, IEPA submitted a post-hearing comment and MWRD submitted a post-hearing brief. On November 13, 2020, IEPA submitted its second post-hearing comment and MWRD submitted its post-hearing reply brief.

DISCUSSION

Justification For TLWQS

MWRD seeks a five-year dissolved oxygen TLWQS applicable to CSO outfall discharges specifically covered by the NPDES permits for the O'Brien, Stickney, and Calumet water reclamation plants (WRPs). MWRD argues that the applicable dissolved oxygen standards cannot be met in the receiving waterways due to CSO discharges during wet weather events. Am. Pet. at 11. Under the Board's TLWQS procedural rules, the Board may adopt a TLWQS if a petitioner demonstrates that attainment of the designated use and criterion is not feasible for the proposed term of the TLWQS in compliance with 35 Ill. Adm. Code 104.560. *See* 35 Ill. Adm. Code 104.560. The petitioner must provide justification that attainment of the current designated use and criterion is not feasible because of one or more of the seven factors under Section 104.560(a). The first six Section 105.560(a) factors mirror those in 40 C.F.R. § 131.10(g). MWRD seeks relief under the following two factors:

> 3) human caused conditions or sources of pollution that prevent the attainment of the designated use and cannot be remediated or would cause more environmental damage to correct than to leave in place (35 Ill. Adm. Code 560(a)(3), 40 C.F.R. § 131.10(g)(3)); and
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> 6) widespread economic and social impact would result from controls more stringent than those required by the CWA Section 301(b) and 306 (35 Ill. Adm. Code 560(a)(6), 40 C.F.R. § 131.10(g)(6)). Am. Pet. at 13-14.

MWRD notes that the Board's TLWQS rules under 35 Ill. Adm. Code 104 are specifically designed to satisfy the federal water quality variance requirements under 40 C.F.R. § 131.14. Therefore, MWRD argues the amended petition meets "the Federal requirements by complying with the requirements set forth in the Board's TLWQS regulations." *Id.* at 25-26.

Board Findings

For the reasons discussed below, the Board finds that MWRD has provided sufficient justification to warrant the grant of a dissolved oxygen TLWQS for the CSO discharges covered by the NPDES permits of its three WRPs pursuant to the "human caused conditions" factor under 35 Ill. Adm. Code 104.560(a)(3) and 40 C.F.R. § 131.10(g)(3). Therefore, the Board grants MWRD a five-year dissolved oxygen TLWQS for MWRD's CSO discharges subject to certain conditions identified in the Board's order. In the following sections, the Board will discuss the components of MWRD's petition along with IEPA's recommendations and USEPA's comments.

TLWQS is Needed Because of Human Caused Conditions (35 Ill. Adm. Code 560(a)(3), 40 C.F.R. § 131.10(g)(3))

MWRD seeks relief from the Board's dissolved oxygen standard because human-caused conditions or sources of pollution prevent the attainment of the dissolved oxygen water quality standards in the CAWS. MWRD argues that the existence of CSO outfalls is a human-caused condition and the discharges from CSO outfalls cannot be remediated without causing significant negative impacts. Am. Pet. at 13. To eventually meet the generally applicable dissolved oxygen standards, MWRD is implementing the TARP project, which is scheduled to be completed in 2029. *Id.* at 21. Currently, the Calumet portion of the TARP is completed, and the O'Brien and Stickney portions are still under construction. *Id.* at 19-21. MWRD asserts that the elimination of CSO outfalls before the completion of TARP could lead to widespread property damage and potential adverse health effects. Am. Pet. at 14. In addition, diluted sewage backing up into building and homes can lead to electrocution, disease, and mold. *Id.* at 15.

CSO Outfalls

MWRD says that CSO discharges occur during heavy wet weather events when pumping and hydraulic capacity of the collection system and treatment plants are inadequate to manage the excess flow into the combined sewer system. Am. Pet. at 11. The CSO outfalls provide relief from local flooding by allowing untreated excess flow from the combined sewers to be discharged directly into the receiving streams. These discharges, however, contribute to nonattainment of the dissolved oxygen water quality standards in the CAWS. *Id*. MWRD's amended petition seeks dissolved oxygen TLWQS coverage for discharges from CSO outfalls that are owned and operated by MWRD, and covered in the NPDES permits for the O'Brien, Stickney and Calumet WRPs. *Id.,* Exhs. C, D, E.

IEPA agrees with MWRD that only CSO outfalls that are in and upstream of the CAWS and LDPR segments may be part of the requested TLWQS. Rec. at 6. IEPA provided a table listing the CSO discharges outfalls and receiving waters that are subject to the TLWQS along with the Stream Segment Codes and the designated uses. *Id.* Attachment 2. These CSO outfall discharges include several General Use segments in the Des Plaines River, Addison Creek, and North Creek that are upstream of the CAWS and Brandon Pool. *Id.* However, in response to a Board question, MWRD clarified that the proposed TLWQS would not apply to CSO outfalls in the General Use segments of the Des Plaines River (G-28, G-15, G-30, and G-32), nor would it apply to Addison Creek, upstream of Brandon Pool (GLA-02). 3/13/20 MWRD Resp. at 19.

MWRD noted that the only exceptions are General Use CSO outfalls that discharge to the North Creek (010), which is upstream of CAWS, and the Chicago River (HCB-01). MWRD submitted a map showing all CSO outfalls (Attachment A) covered by the proposed the TLWQS. This map does not show any CSO outfalls in the Chicago River. The Board notes that the Stickney WRP's NPDES permit indicates that all three CSO outfalls discharging to the Chicago River are owned by the City of Chicago and not MWRD. Am. Pet. Exh. D at 14. IEPA, in its post-hearing comments, said that only the outfalls that are in CAWS and upstream of CAWS should be part of the requested relief. PC 2 at 5.

Given the petitioner is a single discharger TLWQS, the Board agrees with MWRD and IEPA that the requested relief must apply only to CSO outfalls in CAWS or upstream of CAWS that are owned and operated by MWRD. Regarding CSO outfalls in the general use segments, based upon MWRD's clarification, the Board will include the CSO outfall (#010) in the North Creek and exclude those in the Des Plaines River and Chicago River. The Board will include those CSOs identified in the map submitted by MWRD in response to Board questions. 3/13/20 MWRD Resp. Exh. B. These CSO outfalls are listed in Table 1 below along with the receiving stream segment and aquatic life use designation and are also shown in Attachment A.

Table 1

CSO Outfall #	Receiving Water	Aquatic Life Use Designation
O'Brien Water Reclamation Plant NPDES Permit		
101	North Shore Channel	CAWS Aquatic Life Use A
102	North Shore Channel	CAWS Aquatic Life Use A
103	North Shore Channel	CAWS Aquatic Life Use A
104	North Shore Channel	CAWS Aquatic Life Use A
105	North Shore Channel	CAWS Aquatic Life Use A
106	North Shore Channel	CAWS Aquatic Life Use A
107	North Branch of Chicago River	CAWS Aquatic Life Use A
110	North Shore Channel	CAWS Aquatic Life Use A
Stickney Water Reclamation Plant NPDES Permit		
142	S. Fork of S. Branch of Chicago River (upstream of CAWS)	Secondary Contact and Indigenous Aquatic Life
143	Chicago San. and Ship Canal	CAWS Aquatic Life Use B
144	Chicago San. and Ship Canal	CAWS Aquatic Life Use B
145	Chicago San. and Ship Canal	CAWS B
146	Chicago San. and Ship Canal	CAWS B
147	Chicago San. and Ship Canal	CAWS B
148	Chicago San. and Ship Canal	CAWS B
149	Chicago San. and Ship Canal	CAWS B
Calumet Water Reclamation Plant NPDES Permit		
006	Calumet Sag Channel	CAWS A
007	Calumet Sag Channel	CAWS A
010	North Creek (upstream of CAWS)	General Use
151	Calumet River	CAWS A
152	Calumet River	CAWS A

CSO Outfall #	Receiving Water	Aquatic Life Use Designation
153	Little Calumet River	CAWS A
154	Calumet Sag Channel	CAWS A
156	Calumet Sag Channel	CAWS A
157	Calumet Sag Channel	CAWS A
158	Calumet Sag Channel	CAWS A
160	Calumet Sag Channel	CAWS A

Nonattainment of Dissolved Oxygen Standards

MWRD states that discharges from CSO outfalls contribute to nonattainment of the dissolved oxygen water quality standards in CAWS. Am. Pet. at 11. MWRD submitted six years of water quality data from 2013 to 2019 that show the applicable dissolved oxygen standards are not being met consistently in various segments of CAWS. 3/13/20 MWRD Resp., Exh. C. The data also show that the dissolved oxygen levels can be significantly lower than the standards during and after wet weather events. Am. Pet. 11-12, Exh. J1 at 1, *citing* Exh. B. Additionally, MWRD expects the frequency of dissolved oxygen nonattainment will likely increase with the recent reduction in the amount of water MWRD can divert from Lake Michigan into the CAWS. *Id.* at 1. IEPA agrees with MWRD that CSO discharges contribute to nonattainment of dissolved oxygen standards in CAWS. Rec. at 7. However, for CSO outfalls in the Calumet portion of the CAWS, IEPA says that MWRD must submit additional information on the necessity of the dissolved oxygen TLWQS. IEPA notes that these CSO outfalls are impacted by the storage capacity provided by the Thornton Reservoir, which became fully operational in 2016. *Id.* at 6. This issue is discussed in more detail later in this opinion.

Board Findings

The Board agrees with MWRD and IEPA that wet weather discharges from MWRD's CSO outfalls contribute to the nonattainment of the applicable dissolved oxygen standards in CAWS. The hourly dissolved oxygen monitoring data submitted by MWRD show consistent nonattainment of the dissolved oxygen WQS in CAWS. While the dissolved oxygen levels in CAWS may be impacted by "other factors like dry conditions, low water flow, stagnant areas, warm weather, and temporary shutdown of a SEPA station", the monitoring data show that dissolved oxygen levels are significantly lower during and after wet weather events. 3/13/20 MWRD Resp. at 6, Am. Pet., Exh. J1, *citing* Exh.B. Further, the Board notes that Dr. Melching's modeling of changes in the discretionary diversion of the Lake Michigan water into CAWS supports MWRD's contention that the frequency of dissolved oxygen nonattainment will likely increase with reduction in volume of diversion water. Am. Pet. Exh. J, Exh. B. at 154-156. Therefore, the Board finds that the CSO outfalls contribute to nonattainment of dissolved oxygen WQS in the CAWS. The nonattainment of dissolved oxygen standards may continue until the completion of the TARP.

Tunnel and Reservoir Plan (TARP)

The TARP project consists of a system of deep tunnels and reservoirs "for cost-effectively complying with Federal and State water quality standards with respect to the 375 square mile combined sewer area consisting of Chicago and 51 suburbs." Am. Pet., Exh. J6 at 1. The deep tunnel system, which spans about 110 miles, is operational providing approximately 2.3 billion gallons of storage. *Id.* To date, two of the three reservoirs under TARP, the Gloria Alitto Majewski Reservoir and the Thornton Reservoir, are fully operational providing a combined storage volume of 5.15 billion gallons. A map of the TARP is shown in Attachment B. An additional 10 billion gallons of storage will be provided by the McCook Reservoir, which is scheduled to be completed in 2029. *Id.* at 1-3. MWRD states that the completion of TARP will reduce CSO discharges in CAWS, however, TARP will not be completed within the five years period of the currently requested TLWQS. Am. Pet., Exh. J1 at 2.

TLWQS Is Needed due to Human-Caused Condition

MWRD argues that the existence of CSO outfalls is a human caused condition that cannot be remedied within the term of the TLWQS. Additionally, MWRD notes that there are other sources not covered by MWRD permits that impact the attainment of dissolved oxygen standards in the CAWS. Am. Pet. at 16. These include City of Chicago's 167 CSO outfalls, 49 CSO outfalls operated by suburban communities, and permitted municipal storm sewer discharges (MS4s). MWRD argues that the additional sources are also human-caused conditions. Further, MWRD says that the human caused condition cannot be remedied until the completion of the TARP. *Id.* MWRD contends that elimination of CSOs before the completion of TARP would result in massive flooding of streets and basements, sewage backups in buildings, and potential damage and overflows throughout the combined sewer system. Am. Pet., Exh. J1 at 2. The backup of diluted sewage may also have potential adverse health effects, as well as risks of electrocution, disease, and mold. *Id.*

IEPA recommends that the Board adopt the proposed dissolved oxygen TLWQS with conditions for the CSO outfalls covered under the O'Brien and Stickney WRP NPDES permits. Rec. at 6. Given that the TARP will not be completed until 2029, IEPA agrees with MWRD "that attainment of the designated use and dissolved [oxygen] water quality standard is not feasible because of human caused conditions (factor 3)." *Id.* at 7. Further, IEPA agrees that the elimination of the CSO outfalls would cause more environmental damage than to leave them in place. *Id.* USEPA agrees with this recommendation and says, "a five-year variance for CSO discharges from the dissolved oxygen criteria for CSOs impacted by the McCook Reservoir might be appropriate, without any additional showing of technical or financial infeasibility, because MWRD will not complete construction of the McCook Reservoir under the consent decree until 2029." PC 2 at 2.

While both IEPA and USEPA agree with MWRD's position that "human caused condition" justifies the granting of the requested dissolved oxygen TLWQS for the O'Brien and Stickney CSO outfalls, they maintain that additional demonstration is needed for the Calumet CSO discharges. Rec. at 5-6, PC 1 at 2. This is because of the completion of the TARP's

Thornton Reservoir, which provides approximately 4.8 billion gallons of storage for the Calumet system flood relief. Am. Pet., Exh. J6 at 3. IEPA says that under Calumet's NPDES Permit, MWRD was required to submit its post-construction study by June 30, 2019 indicating "whether: a) CSOs in the Calumet WWTP [waste water treatment plant] portion of the CAWS are causing or contributing to violations of applicable water quality standards and, if so, (b) upon notification by the Agency, develop and implement a revised CSO Long-Term Control Plan (LTCP) for assuring that discharges from the CSOs do not cause or contribute to violation to applicable water quality standards or cause use impairments in the receiving waters." Rec. at 6.

MWRD submitted a copy of the Thornton Reservoir's post construction monitoring report into the record as an attachment to the prefiled testimony of MWRD's biologist, Mr. Dustin Gallagher (Gallagher Test.). This report concludes that the "CSO events were drastically reduced in the CRS [Calumet River System] after the TCR [Thornton Composite Reservoir] was placed in service." *Id.* at 22. The report also notes that the "[o]verall compliance with DO WQS increased at most continuous DO monitoring (CDOM) locations between pre- and post-construction monitoring periods and was greater than 90 percent at all locations during the post-construction monitoring period." Gallagher Test. at 3. Gallagher's testimony addresses IEPA's concerns regarding the need for TLWQS for the Calumet portion of the CAWS. Gallagher says that while the completion and operation of the Thornton Reservoir has reduced the number of discharges from the Calumet CSO outfalls, a few discharges have still occurred from those outfalls. *Id*. at 1. However, Gallagher asserts that MWRD cannot conclude that there will be no CSO discharge in the future. He explains that while the Thornton Reservoir has a storage volume of 7.9 billion gallons, only 4.9 billion gallons will be available for CSO discharges because the remaining volume will be used for Thorn Creek floodwater storage when the lease on the transitional reservoir expires in 2020. *Id.* at 2, *citing* MWRD's Post-Construction Monitoring Report for the Calumet Tunnel and Reservoir Plan System dated June 2019. The transitional reservoir that is currently used for storing the Thornton Creek flood waters will be returned to active quarrying upon the lease expiration. Am. Pet. Exh. J6 at 2. In response to a Board question regarding the possibility of extending the lease for the transitional reservoir, MWRD stated that the "only extension that may be available at the current time is through 2021." MWRD 03/13/20 Resp. at 2.

Gallagher argues that the likelihood of the Calumet system having CSO discharges would be higher with the loss of transitional reservoir storage capacity. *Id.* at 2. Further, he asserts that that storms in the future that are expected to be larger than those experienced since the Thornton Reservoir became operational may trigger CSO discharges. *Id.* MWRD maintains that the Calumet portion of the CAWS must be provided coverage under the dissolved oxygen TLWQS. However, MWRD suggests that the Board could include a reopener clause in the TLWQS to remove the coverage for the Calumet portion if it is determined in future that there will be no CSO discharge in that portion of the CAWS. *Id.*

USEPA says that if CSO discharges in the Calumet portions of the CAWS "cannot be remedied or that remedying those CSOs would cause more environmental damage than to leave in place, consistent with 40 C.F.R. § 131.10(g)(3)," MWRD must provide additional information to support that claim. PC 1 at 2. This is because MWRD's justification based on Dr. Zenz's

testimony regarding the measures that would be required to achieve compliance with the dissolved oxygen standards was based on conditions that existed before the Thornton Reservoir was complete, and therefore not applicable to the current condition in the Calumet portion of the CAWS. *Id.* USEPA said that for the Calumet portion, MWRD must specifically address the following:

1) Whether, and to what extent, there will still be CSOs now that Thornton Reservoir is in full operation;

2) If additional CSOs are expected, to what extent those CSOs will still be contributing to low dissolved oxygen levels;

3) If additional CSOs are expected, the potential alternatives to reduce or eliminate the number of CSOs or to provide additional aeration to mitigate the effects of CSOs on dissolved oxygen;

4) The feasibility of implementing each potential alternative; and

5) What other conditions exist that contribute to low dissolved oxygen levels and what activities could be implemented to mitigate those conditions or otherwise improve aquatic life. *Id*.

In its public comment, USEPA instructs that if this information is not currently available, the Board may grant MWRD a "bridge variance" by including conditions to collect the necessary information as well as identify the next steps to improve dissolved oxygen and aquatic life in the Calumet portion of the CAWS. *Id.* Such information would be critical for the Board when it considers any renewal request at the end of the proposed five-year TLWQS. *Id.* IEPA agrees that MWRD must develop this information and proposed additional conditions for the Board's TLWQS order to address USEPA's concerns. PC 2 at 5, Att. 1. In its post-hearing reply brief, MWRD said that it has no objection to including the conditions proposed by USEPA for the Calumet system. MWRD Post-Hearing Reply Brief (Br.) at 2. However, MWRD proposes changes to the condition proposed by IEPA to clarify the applicability to the Calumet system as well as the timeframe. MWRD Br. at 1-2. In response, IEPA says these changes address the Agency's concerns with the Calumet System. PC 3 at 4.

Board Discussion

The Board agrees with MWRD and IEPA that discharge of combined sewer overflow from MWRD's outfalls are a human-caused condition that contribute to the nonattainment of the dissolved oxygen WQS in CAWS. As noted above, the hourly dissolved oxygen monitoring data submitted by MWRD shows that wet weather discharges result in consistent nonattainment of the dissolved oxygen WQS in the CAWS. 3/13/20 MWRD Resp. at 6, Am. Pet., Exh. J1, *citing* Exh. B. Further, the Board notes that the frequency of dissolved oxygen nonattainment will likely increase with reduction in volume of diversion water from the Lake Michigan. Am. Pet. Exh. J, Exh. B. at 154-156. Therefore, the Board finds that the CSO outfalls contribute to

nonattainment of dissolved oxygen WQS in the CAWS and the nonattainment of dissolved oxygen standards may continue until the completion of the TARP. Further, the Board finds that the CSO outfalls cannot be eliminated without causing additional environmental damage. Rather, MWRD should continue to use the CSO outfalls at least until TARP is completed in 2029. The schedule for completing TARP is described in the Consent Decree between MWRD, IEPA and USEPA. Am. Pet., Exh. L.

However, the Board shares IEPA's and USEPA's concerns regarding the Calumet portion of CAWS given that the Thornton Reservoir, which serves the Calumet system, is complete and fully operational. The Board agrees with IEPA that MWRD must develop the information described by USEPA for the Calumet system to determine whether there is a need for the Calumet CSO outfalls to be covered under the dissolved oxygen TLWQS at the end of the 5-year initial TLWQS period. Because MWRD needs additional time to collect the information, the Board will utilize the "bridge variance" approach suggested by the USEPA and grant coverage to the Calumet CSO outfalls under the dissolved oxygen TLWQ. In addition, the Board will include as a condition of the TLWQS the requirements proposed by MWRD that address all five items described by USEPA regarding the Calumet CSO outfalls.

Board Findings

The Board finds that the discharge of combined sewer overflow from MWRD's outfalls, listed in Table 1 above, are a human-caused condition that contribute to the nonattainment of the dissolved oxygen water quality standards in CAWS. Further, the Board finds that eliminating the CSO outfalls would cause more environmental damage than leaving the outfalls in place at least until TARP is completed in 2029. Therefore, the Board finds that MWRD, as required by Section 104.560(a) and 40 C.F.R. § 131.10(g), has provided adequate justification for a dissolved oxygen TLWQS because the attainment of the current designated uses and dissolved oxygen standards are not feasible due to human-caused conditions or sources of pollution and cannot be remediated safely.

TLWQS is Needed Because of Widespread Economic and Social Impact

In addition to the 40 C.F.R. § 131.10(g) factor analyzed above – human-caused conditions – MWRD's amended petition lists a second 10(g) factor. MWRD argues that a TLWQS is needed due to factor 40 C.F.R. § 131.10(g)(6), widespread economic and social impact. Am. Pet at 14.

MWRD argues that installation of additional aeration stations and aerated flow augmentation stations aimed at increasing the dissolved oxygen levels in CAWS would cost approximately $650 million and may not result in consistent compliance with the dissolved oxygen standard. *Id.* at 17. In addition, MWRD maintains that eliminating CSO outfalls would cause "extensive flooding of streams and streets, sewage backups in buildings and homes, and potential damage and overflows throughout the combined sewer system." *Id.* at 16. For these reasons, MWRD argues that these additional measures, "would impose substantial and widespread economic and social impact in the areas served by the MWRD." *Id*. Therefore,

MWRD contends that the CSO outfalls in CAWS qualify for coverage under the requested dissolved oxygen TLWQS under 35 Ill. Adm. Code 560(a)(6) and 40 C.F.R. § 131.10(g)(6).

IEPA says that MWRD's petition did not include sufficient information to justify "substantial and widespread negative economic and social impact on the public because it is lacking information on of the cost per user and whether it is affordable." Rec. at 8, PC 2 at 5. However, IEPA notes that meeting only one of the factors under Section 104.560 or 40 C.F.R. § 131.10(g) is sufficient to demonstrate the need for a TLWQS, and MWRD has demonstrated that attainment of the designated use(s) and dissolved oxygen WQS are not feasible throughout the term of the TLWQS because of "human caused sources or pollution" under Section 104.560(a)(3) and 40 C.F.R. § 131.10(g)(3). *Id.*

MWRD declined to revise the 2008 cost estimate of $650 million for installation of aeration stations and aerated flow augmentation stations. 03/13/20 MWRD Resp. at 23. MWRD argues that to do so would require a "detailed engineering and hydraulic analysis" to determine the final number of stations that would be needed in the various portions of the CAWS. *Id.* Additionally, MWRD argues that a cost analysis to determine cost per user "would be complex and take substantial time and effort, particularly given the new analyses that would be required and the need to adjust the cost information for inflation and other factors." *Id.* MWRD maintains that compliance with the new dissolved oxygen standards is not possible before completion of the Thornton Reservoir and efforts to comply with the standards would impose substantial and widespread economic and social impact. *Id. citing* Am. Pet. at 16.

Board Discussion and Findings

The Board finds that MWRD has not met the requirements to satisfy Section 104.560(a)(6) and 40 C.F.R. § 131.10(g)(6). MWRD's 2008 cost estimate of $650 million for installation of aeration stations and aerated flow augmentation was based on information from the Zenz report. Am. Pet. at 11, Exh. I. The Zenz report is based on data from as early as 1990. Much has changed in the interim, both with the current conditions in CAWS as well as the completion and use of the Thornton Reservoir. Should MWRD choose to seek a second dissolved oxygen TLWQS in the future and choose to use Section 104.560(a)(6) to do so, it must submit a cost estimate that reflects the current conditions in the system, not conditions from as early as 1990. Additionally, the Board finds that any evidence used to support the economic impact of complying with the dissolved oxygen standard must include an estimate of the incremental cost per user of the MWRD system. Providing that information will allow the Board to determine if the impact of compliance results in a substantial negative economic impact to end users.

Based on the above, the Board finds that MWRD has not provided sufficient evidence to satisfy the requirements of Section 104.560(a)(6) and 40 C.F.R. § 131.10(g)(6). Therefore, the Board declines to use that factor to grant MWRD a dissolved oxygen TLWQS under Section 104.560(a)(6) and 40 C.F.R. § 131.10(g)(6).

Highest Attainable Condition of the Watershed

When granting a TLWQS to a single discharger, Section 104.560(d)(4) requires the Board to specify the HAC of the water body or waterbody segment as a quantifiable expression of one of the following:

i) The highest attainable interim criterion;

ii) The interim effluent condition that reflects the greatest pollutant reduction achievable; or

iii) If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the Board adopts the TLWQS and with the adoption and implementation of a Pollutant Minimization Program. 35 Ill. Adm. Code. 105.560(d)(4).

MWRD seeks to use the HAC in Section 104.560(d)(4)(iii). Am. Pet. at 15. MWRD says this would reflect the greatest pollution reduction achievable by relying on existing control technologies in addition to pollution prevention measures. *Id*. MWRD's proposed HAC includes the effluent conditions authorized by the existing NPDES Permits for the O'Brien, Stickney and Calumet plants that address the MWRD's CSO outfalls and conditions of the Consent Decree. *Id*. MWRD also proposes a series interim pollution minimization measures that would apply during the five-year term of the TLWQS. These interim measures are designed to improve dissolved oxygen levels in CAWS. *Id.* at 18-22. MWRD claims that the interim measures may not achieve full compliance with the dissolved oxygen standard, but the measures are expected to reduce the frequency of nonattainment. *Id.* at 18. Further, as required by Section 104.530(a)(17), MWRD says that the proposed HAC does not conflict with the attainment of dissolved oxygen WQS in downstream areas not covered by the amended TLWQS petition. *Id*. MWRD contends that any downstream impacts would be significantly less than impacts in the CAWS due to the series of TARP conditions and interim measures as well attenuation and dilution effects. Finally, MWRD says that during the five-year term of the TLWQS, it will analyze the data collected from implementing these interim measures and make modifications to continue to improve dissolved oxygen levels in CAWS. *Id.*

IEPA agrees with MWRD's approach of specifying the HAC based on the greatest pollutant reduction achievable with the existing pollutant control technologies. Additionally, IEPA agrees with the adoption and implementation of a pollutant minimization measures for the CSOs impacted by the McCook Reservoir. Rec. at 8-9. However, for the CSOs impacted by the Thornton Reservoir, IEPA argues that MWRD must submit additional information on the necessity of the dissolved oxygen TLWQS since that reservoir is now fully operational. Rec. at 9. Additionally, IEPA recommends that the Board incorporate the effluent conditions authorized by the existing NPDES Permits, conditions of the Consent Decree, and the proposed interim measures as conditions of the dissolved oxygen TLWQS. *Id*. at 10, Attach. 1. IEPA recommends that the Board grant the TLWQS with the following additional conditions:

1. Conditions currently in the permits for Calumet, Stickney and O'Brien. (Special Condition #13 for Calumet, Special Condition #13 for Stickney and Special Condition #8 for O'Brien; Petitioner Exhibits C, D and E).

2. Suggested Conditions in the Amended Petition in Part I.E.1. (Amended Petition, P.16-20)

3. A requirement that MWRD will analyze the instream dissolved oxygen data and make modification and adjustments to improve dissolved oxygen levels in the receiving streams.

4. Follow actions and achieve milestones set forth in the Consent Decree detailed in Part I.E.1 of the Amended Petition. (Amended Petition, P. 20-21). *Id.*

Board Discussion and Findings

The Board agrees with MWRD and IEPA that the HAC based on existing control technologies and pollution minimization measures during the term of the TLWQS and complying with Section 104.560(d)(4)(A)(iii) is appropriate because completion of TARP is the precursor to attainment of the dissolved oxygen WQS. Regarding the CSO outfalls affected by the Thornton Reservoir, as discussed above, the Board is taking the "bridge variance" approach suggested by USEPA. The Board will include Calumet CSOs under the TLWQS but require MWRD to collect additional data to address whether continued relief is necessary for the Calumet CSO outfalls.

MWRD's proposed HAC for the receiving streams (CAWS) include conditions in the NPDES permits covering MWRD's CSO outfalls, conditions of the Consent Decree, and the interim pollution minimization measures. The Board will discuss these components of the HAC below.

NPDES Permit Conditions

MWRD proposes using the current effluent condition authorized by the existing NPDES Permits for the O'Brien, Stickney and Calumet WRPs for MWRD's CSO outfalls. Am Pet. Exhs. C, D, E. These permits include conditions applicable to the CSO discharges covered by the proposed TLWQS. The permits specify technology-based requirements described by USEPA in Sections 301(b) and 306 of the CWA. Am. Pet. at 12. These requirements include the Nine Minimum Controls (NMC), as specified in the U.S. EPA's Combined Sewer Overflow (CSO) Control Policy and associated NMC guidance. *Id., citing* 59 Fed. Reg. 18,688 (Apr. 19, 1994); Combined Sewer Overflows, Guidance for Nine Minimum Controls, U.S. EPA Office of Water (May 1995). The HAC related conditions proposed by IEPA cite the Special Condition pertaining to CSO discharges in each of the three MWRD WRP NPDES permits: Special Condition #13 for Calumet, Special Condition #13 for Stickney, and Special Condition #8 for O'Brien. Rec., Attach. 1.

Board Discussion

The Board notes that the CSO Special Condition in each of the three permits represents a comprehensive approach to regulating CSO discharges that includes the NMC requirements for CSO discharges, pollution prevention activities, operation and maintenance plans, and monitoring and reporting requirements. Including these requirements in the TLWQS ensures that the affected CSO outfalls will comply with the control and treatment requirements applicable under the federal CSO policy during the term of the TLWQS. Thus, the Board agrees with MWRD that the effluent conditions authorized by the existing NPDES Permits represent the greatest pollution reduction achievable through existing control technologies. Therefore, the Board will include a condition of the TLWQS order requiring adherence with the current NPDES permits for Calumet, Stickney and O'Brien WRPs.

Consent Decree Conditions

MWRD proposes the inclusion of certain actions and milestones in the Consent Decree relating to the TARP as part of the HAC. The Consent Decree between USEPA, IEPA, and the MWRD specifies additional requirements related to USEPA's NMC for controlling CSO discharges. Am. Pet. at 12-13, *citing* Exh. L. The Consent Decree includes detailed plans for the TARP and specifies the MWRD's obligations regarding the implementation of the TARP for controlling CSO discharges that are contributing to low dissolved oxygen in CAWS. *Id.* at 13. MWRD notes that one of the goals of the major construction projects encompassed in TARP is to minimize the occurrence of CSO events. While approximately $3.8 billion has been spent on TARP to date, MWRD says an additional $48 million would be required to complete the TARP by 2029. Am. Pet. at 13. MWRD proposes the inclusion of certain Consent Decree requirements relating to the TARP as part of the HAC to satisfy the greatest pollution reduction achievable through existing control technologies criterion under Section 104.560(d)(4)(iii). MWRD asks that the following Consent Decree conditions be used to minimize and monitor dissolved oxygen discharges to the CAWS resulting from the CSO outfalls covered by the TLWQS:

- The Thornton Composite Reservoir for the Calumet TARP System must commence full operation no later than one year after it was placed into operation on December 31, 2015, or by December 31, 2016 (Consent Decree, para. 16). (MWRD reports this has been accomplished.)

- A final post-construction monitoring report for the Calumet TARP System will be submitted by MWRD by June 30, 2019.

- Stage 1 of the McCook Reservoir for the Mainstream/Lower Des Plaines TARP System must be placed into operation no later than December 31, 2017 (which has been accomplished) and will commence full operation no later than December 31, 2018 (Consent Decree, para. 17).

- Stage 2 of the McCook Reservoir for the Mainstream/Lower Des Plaines TARP System will be placed into operation no later than December 31, 2029 and will commence full operation no later than December 31, 2030.

- A post-construction monitoring plan for the Mainstream/Lower Des Plaines TARP System will be submitted for approval by January 6, 2019 and a final report will be submitted by the MWRD within six months of the end of the monitoring period specified in the approved plan. *Id*. *citing* Exh. L.

IEPA supports MWRD's proposal to include Consent Decree conditions as a part of the HAC. IEPA notes that the HAC for the receiving streams is the continued use of TARP. Rec. at 10. IEPA recommends that the Board include the above Consent Decree actions/milestones as a TLWQS condition. Rec., Attach. 1.

Board Discussion and Findings

The Board agrees with MWRD and IEPA regarding the inclusion of the Consent Decree conditions relating to the TARP under the proposed HAC. Including the conditions will help ensure the timely completion of TARP projects to eliminate or minimize the occurrence of CSO events and promote the attainment of the dissolved oxygen WQS in the CAWS. However, the Board will include only those conditions that are yet to be completed as conditions of the TLWQS.

Pollutant Minimization Measures

MWRD says that it will implement pollutant minimization measures during the term of the TLWQS to improve dissolved oxygen levels in CAWS "while the long-term solutions, such as TARP, are completed." Am. Pet. at 18. MWRD proposes a series of interim measures for each of the three WRPs covered under the proposed TLWQS. *Id.* at 18-22. These measures are summarized in Table 2 below.

Table 2

Interim Measures	**Water Reclamation Plants**		
	O'Brien	**Stickney**	**Calumet**
As part of the plan to make progress toward attainment of the long-term designated use goals, the MWRD has been working with other stakeholders to assess possible habitat improvement projects. The MWRD provided funding of $500,000 toward implementation of habitat improvement projects in the CAWS through the Chi-Cal Rivers Fund. (This agreement is attached as Exhibit M.) This funding was leveraged with funding from other parties that contributed to these projects.	Yes	Yes	Yes

Interim Measures	Water Reclamation Plants		
	O'Brien	**Stickney**	**Calumet**
Under the TLWQS, existing aeration/SEPA stations will be operated in operable periods. For this purpose, "operable" periods shall not include occurrences of short-term equipment failure, weed control problems, mechanical problems and replacement of equipment for preventive maintenance purposes. Operation of those stations will not be required during any particular time period if it is not needed in order for the CAWS to meet the new DO water quality standards.	Aeration Stations at Devon and Webster	None	SEPA stations 3, 4 and 5
No other DO-related control requirements will apply to the CSOs covered in the O'Brien Plant permit during the term of the TLWQS. (This is not intended to refer to the control of any nutrients, including nitrogen and phosphorus, discharged from the Plant.) Any water quality-related requirements applicable to CSO discharges in the permit that accompanies this TLWQS are subject to this condition.	Yes	Yes	Yes
Continuous DO monitoring (CDOM) will be done at the following CDOM stations. A report on DO results will be submitted by the MWRD each year, summarizing the prior year's data.	Foster Avenue and Church Street on the North Shore Channel; and Addison Street and Division Street on the North Branch Chicago River	Cicero Avenue, B&O Railroad, and Lockport on the Chicago Sanitary and Ship Canal	C&W Indiana RR and Halsted Street on the Little Calumet River, and Route 83 on the Cal-Sag Channel
TARP Provisions Related to McCook Reservoir • Stage 1 of the McCook reservoir is required to be completed by December 31, 2017. (This has been accomplished.) • Stage 2 of the McCook reservoir is required to be completed by December 31, 2029. • Pursuant to the Consent Decree (Exhibit L), the MWRD will verify the operational plan and commence full operation of Stage 1 of the McCook reservoir no later than one year after Stage 1 is placed into operation. During the 24-month period after Stage 1 of the McCook reservoir has commenced full operation, the MWRD will evaluate the DO impacts of the McCook operation, and will submit a report to IEPA 6 months after the completion of that 24-month study period. • The report will provide conclusions regarding expected nonattainment rate of the new DO standard with Stage 1 of McCook in full operation, analyzing wet weather events and dry weather time periods • The report will incorporate an assessment of the impacts on DO standards attainment due to	Yes	Yes	N/A

Interim Measures	Water Reclamation Plants		
	O'Brien	Stickney	Calumet
reductions in the State's discretionary diversion allocation. • The report will include an assessment of feasible options to further increase DO levels in the relevant reaches of the CAWS. This assessment will include, as appropriate, consideration of non-TARP measures such as green infrastructure to reduce CSO discharges and DO violations resulting from CSO discharges. • The results of the report will be considered in determining whether a TLWQS will be issued to accompany the next permit that is issued after submittal of the report and will be included in any MWRD petition requesting a TLWQS for any subsequent permit. Such a TLWQS, if issued, would incorporate the results of the report, specifying the expected nonattainment rate of the new DO standard during the TLWQS term, and specifying that no other DO-related control requirements applicable to CSO discharges would be imposed during the term of the TLWQS except such steps as are found by the MWRD or the Board to be feasible and appropriate given the goals of the Clean Water Act. • The same procedure will be followed for completion of Stage 2 of the McCook reservoir, but given its completion date, such issues will be addressed in a subsequent permit and TLWQS for the Stickney Plant and related CSO Outfalls.			
TARP Provisions Related to Thornton Reservoir • The Thornton Composite Reservoir came on-line December 31, 2015. Pursuant to the Consent Decree (Exhibit L), the MWRD will verify the operational plan and commence full operation of the Thornton reservoir no later than one year after the reservoir is placed into operation. (This has been accomplished.) • During the 24-month period after the Thornton reservoir has commenced full operation, the MWRD will evaluate the DO impacts of the Thornton operation, and will submit a report to IEPA 6 months after the completion of that 24-month study period. • The report will provide conclusions regarding expected nonattainment rate of the new DO standard with Thornton in full operation, analyzing wet weather events and dry weather time periods (assuming continued operation of SEPA stations whenever operable). • The report will incorporate an assessment of the impacts on DO standards attainment due to	N/A	N/A	Yes

Interim Measures	Water Reclamation Plants		
	O'Brien	Stickney	Calumet
reductions in the State's discretionary diversion allocation. • The report will include an assessment of feasible options to further increase DO levels in the relevant reaches of the CAWS. This assessment will include, as appropriate, consideration of non-TARP measures such as green infrastructure to reduce CSO discharges and DO violations resulting from CSO discharges. • The results of the report will be considered in determining whether a TLWQS will be issued to accompany the next permit that is issued after submittal of the report, and will be included in any MWRD petition requesting a TLWQS for any subsequent permit. Such a TLWQS, if issued, would incorporate the results of the report, specifying the expected nonattainment rate of the new DO standard during the TLWQS term, requiring continued operation of the aeration stations whenever operable, and specifying that no other DO-related control requirements applicable to CSO discharges would apply during the term of the TLWQS except such steps as are found by the MWRD or the Board to be feasible and appropriate given the goals of the Clean Water Act.			

MWRD says that while the measures listed above will reduce the frequency of nonattainment of the dissolved oxygen WQS they may not result in complete attainment of the standard. Am. Pet. at 18. Further, MWRD says that it will analyze the data collected during the implementation of the interim measures and will make modifications and adjustments to improve dissolved oxygen levels in CAWS. This data evaluation, MWRD notes, will also be used to support any future dissolved oxygen TLWQS request. *Id.* IEPA supports including the proposed interim pollution minimization measures as part of the HAC. Rec. at 10. However, IEPA suggests that the Board include the interim data evaluation measure to improve dissolved oxygen levels in CAWS as condition of the TLWQS. *Id.*, Attach. 1.

Board Discussion

The Board agrees with MWRD that the proposed interim pollution minimization measures to improve the dissolved oxygen levels in CAWS serve as a significant component of the proposed HAC for CAWS. The continued hourly dissolved oxygen monitoring in the various segments of CAWS will provide the data necessary to evaluate the effectiveness of the various interim measures, including the completion of the TARP projects. Additionally, the continued operation of the aeration and SEPA stations will ensure the reduction of the frequency of nonattainment of dissolved oxygen standards during wet weather events. Finally, the inclusion of the TARP actions and milestones will help ensure the timely completion of all

required components of TARP with the goal of attainment of the dissolved oxygen standards in the CAWS. Therefore, the Board will include the proposed interim measures in the TLWQS order.

However, as noted in the MWRD's amended petition, some of the proposed measures have already been completed by the petitioner. These include the TARP requirements pertaining to the Stage 1 McCook Reservoir and the Thornton Reservoir. Additionally, in response to a Board question, MWRD noted that the interim measure concerning the habitat improvement projects should be excluded from the list because those projects have been completed and MWRD has no further obligations under the relevant Intergovernmental Agreements. MWRD 03/13/20 Resp. at 29. Therefore, Board will exclude the habitat improvement projects as well as the TARP actions and milestones, which have been completed to date.

Board Findings

The Board finds that MWRD has provided sufficient justification for the proposed HAC in the receiving streams (CAWS). Given that implementation of TARP is the preferred option for attainment of the dissolved oxygen WQS in the CAWS, the Board finds that the HAC based on the existing control technologies and the proposed pollution minimization measures complies with the requirements of Section 104.560(d)(4)(A)(iii). Therefore, the Board finds that the effluent condition authorized by the existing NPDES Permits of the three MWRD WRPs and Consent Decree requirements pertaining to TARP in addition to the proposed interim pollution minimization measures represent the greatest pollution reduction achievable through existing control technologies. The Board will include the specific requirements discussed above that pertain to permit conditions, Consent Decree requirements, and interim measures as conditions of the TLWQS.

TERM OF THE DISSOLVED OXYGEN TLWQS

The Board's TLWQS regulations require a petitioner to "demonstrate that the term of the TLWQS is the minimum necessary to achieve the highest attainable condition. This demonstration must justify the term of the TLWQS by describing the pollutant control activities required to achieve the highest attainable condition, including those activities through a Pollutant Minimization Program." 35 Ill. Adm. Code 104.560(c). The federal rules also require a petitioner to justify that the requested term of the TLWQS is only as long as necessary to achieve the HAC of the water body segment. *See* 40 C.F.R. § 131.14(b)(1)(iii). MWRD says that the requested five-year term for the dissolved oxygen TLWQS is consistent with both Board and USEPA requirements and allows MWRD to implement interim measures to achieve the HAC in CAWS. Am. Pet. at 5. However, MWRD argues that consistent compliance with the dissolved oxygen standards in CAWS will not be achieved within the five-year term because TARP will not be fully operational until the end of 2029. Am. Pet. at 23-24, *citing* Exh. L.

MWRD says that it requests an initial five-year TLWQS since completion of portions of the TARP (Thornton Reservoir and McCook Stage 1 Reservoir) will change the dissolved oxygen attainment situation in CAWS. Am. Pet. at 23. Therefore, MWRD expects to request a

second TLWQS before the end of the five-year term of this initial TLWQS, which would reflect the situation at that future date. *Id.* Additionally, MWRD argues that the requested five-year term of the TLWQS represents the minimum time needed to achieve the HAC for dissolved in CAWS consistent with 35 Ill. Adm. Code 104.565(d)(7). *Id.*

IEPA supports the proposed five-year term of the dissolved oxygen TLWQS and acknowledges MWRD's plan to request a second, revised, TLWQS before the termination of the initial TLWQS. Rec. at 10.

Board Discussion

The Board agrees with MWRD's rationale for requesting an initial five-year TLWQS even though full attainment of the dissolved oxygen standards in CAWS is not likely until completion of the TARP in 2029. As noted above, the Board is including conditions in the TLWQS order requiring MWRD to evaluate the impact of completion and operation of certain TARP projects (Thornton Reservoir and Stage 1 McCook Reservoir) on the need for continued relief from the dissolved oxygen standards in certain segments of CAWS. These evaluations will likely result in a change of the terms in MWRD's potential second TLWQS. Further, the Board notes that the five-year term allows MWRD to implement the various measures required to achieve the HAC, including the interim pollution minimization measures.

Board Findings

Based on the above, the Board finds that MWRD has demonstrated that the proposed five-year term of the dissolved oxygen TLWQS is the minimum necessary to achieve the HAC in compliance with Section 104.560 and 40 C.F.R. § 131.14(b)(1)(iii). In doing so, the Board also recognizes MWRD may need relief for an additional time at least until the completion of the TARP at the end of 2029.

TLWQS Order - Satisfaction of 35 Ill. Adm. Code 104.565(d)

The Board notes that Section 104.565 prescribes the specific information that needs to be included in the TLWQS order. These items include identification of the pollutant, applicability (waterbody segment, multiple or single discharger), TLWQS conditions, the HAC, term of the TLWQS, and reevaluation provisions if necessary. See 35 Ill Adm Code 104.565. While MWRD did not provide specific language for the Board order granting the TLWQS, as discussed above, MWRD has proposed conditions to be included in the dissolved oxygen TLWQS order. These include interim pollution minimization measures under the proposed HAC as well conditions addressing IEPA's and USEPA's concerns regarding the TLWQS coverage for Calumet portion of the CAWs. MWRD Br. at 3. Additionally, MWRD's amended petition addresses other information that must be included in the TLWQS order under Section 104.565 including the scope and term of the TLWQS. IEPA also recommended several conditions, which are consistent with those proposed by MWRD. PC 2, Attach. 1.

As discussed above, the Board finds these conditions to be appropriate for inclusion in the TLWQS order with a few changes. The Board sought comments on a draft dissolved oxygen TLWQS order that addressed each of the requirements of Section 104.565. 11/27/19 Hearing Officer Order, Question 29. In response, MWRD suggested deletion of certain interim measures, which have already been completed by MWRD, and the addition of conditions proposed by MWRD to address IEPA's and USEPA's concerns regarding granting relief for the Calumet system. The Board incorporates those changes in today's order.

The following table identifies the sections of the order that satisfy each requirement in Section 104.565(d):

Subsection of 35 Ill. Adm. Code 104.565(d)	**Part of order**
1) Identification of the pollutant or water quality parameter	Introductory Paragraph
2) Applicability * * *	
B) Single Discharger	
i) Identification of the water body or waterbody segment to which the TLWQS applies; and	Paragraph 1 and Table 1
ii) The person covered under the TLWQS	Paragraph 1
3) The TLWQS requirements and conditions that apply throughout the term of the TLWQS:	
A) Will represent the highest attainable condition of the watershed, water body, or waterbody segment applicable throughout the term of the TLWQS based on petitioner's demonstration required by Section 104.560; and	Introductory Paragraph
B) Will not result in any lowering of the currently attained ambient water quality, unless the petitioner demonstrates that a TLWQS is necessary for restoration activities under Section 104.560(a)(7).	Introductory Paragraph

4)	The highest attainable condition of the water body or waterbody segment as a quantifiable expression of one of the following: * * * A) For a single discharger and a multiple discharger TLWQS: iii) If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the Board adopts the TLWQS and with the adoption and implementation of a Pollutant Minimizing Program.	Paragraph 3
5)	A statement providing that the requirements of the TLWQS are either the highest attainable condition identified at the time of the adoption of the TLWQS, or the highest attainable condition later identified during any re-evaluation consistent with Section 104.580, whichever is more stringent.	Paragraph 6
6)	The term of the TLWQS, expressed as an interval of time from the date of USEPA approval or a specific date.	Paragraph 2
7)	For a TLWQS with a term greater than five years, a specified frequency to re-evaluate the highest attainable condition under Section 104.580. The re-evaluation must occur no less frequently than every five years after both the Board and USEPA approve the TLWQS.	Not applicable as the term is five years
8)	A provision that the TLWQS will no longer be the applicable water quality standard for purposes of the Clean Water Act if the petitioner does not conduct a re-evaluation consistent with the frequency specified in the TLWQS or the results are not submitted to USEPA as required by Section 104.580.	Not applicable as the term is five years

CONCLUSION

Today, the Board grants MWRD's request for a dissolved oxygen TLWQS in the CAWS watershed. The Board-approved TLWQS order is incorporated into this Board opinion and order. Under Section 104.570 of the Board's rules, "[b]efore a TLWQS becomes effective for Clean Water Act purposes, the IEPA must submit the TLWQS to the USEPA and obtain the

USEPA's approval in compliance with Section 303(c) of the Clean Water Act and 40 C.F.R. 131.20 and 131.21." 35 Ill. Adm. Code 104.570. Upon issuance of this order, the IEPA must submit the Board-approved TLWQS for USEPA approval consistent with Section 104.570.

This TLWQS, once adopted by the Board and approved by USEPA, will be the applicable dissolved oxygen WQS for discharges from MWRD's CSO outfalls for a five-year term. 35 Ill. Adm. Code 104.505(d). The limitations and requirements necessary to implement the TLWQS will be included as enforceable conditions of the NPDES permit. *Id*. The Board will maintain, in its WQS, the underlying designated use and dissolved oxygen criterion for all dischargers not covered by this TLWQS. 35 Ill. Adm. Code 104.565(a).

Under Section 104.525 of the Board's rules, the stay of effectiveness of the dissolved oxygen WQS remains in effect until the USEPA either approves the TLWQS or disapproves the TLWQS for failure to comply with 40 C.F.R. § 131.14. *See* 35 Ill. Adm. Code 104.525(a), (b)(1)(B).

ORDER

Time-Limited Water Quality Standard for Dissolved Oxygen

The Board grants Metropolitan Water Reclamation District of Greater Chicago (MWRD) a dissolved oxygen (DO) Time Limited Water Quality Standard (TLWQS) consistent with 40 C.F.R. § 131.14, Section 38.5 of the Act, and 35 Ill. Adm. Code 104 Subpart E. The Board grants this TLWQS, subject to the following conditions, in lieu of the DO water quality standards in 35 Ill. Adm. Code 302.206 and 302.405 and the designated aquatic life uses under 35 Ill. Adm. Code 303:

1. Applicability.

   This DO TLWQS applies only to discharges from the combined sewer overflow (CSO) outfalls, receiving waterbody segments, and associated designated uses listed in Table 1 of this order.

2. Term of the DO TLWQS.

   This TLWQS will be effective upon the approval of the United States Environmental Protection Agency (USEPA) and expires five years after the date of USEPA approval.

3. The Highest Achievable Condition (HAC).

   Under 35 Ill. Adm. Code 104.560(d)(4)(iii), MWRD's compliance with the following requirements represents the HAC for the receiving stream segments covered by this DO TLWQS:

a. The existing conditions imposed on the CSO outfalls listed in Table 1 by the current NPDES Permits for Calumet, Stickney and O'Brien water reclamation plants (WRP), including Special Condition #13 for Calumet, Special Condition #13 for Stickney and Special Condition #8 for O'Brien. (Amended Petition Exhibits C, D and E).

b. The Tunnel and Reservoir Plan (TARP) related requirements listed under paragraph (4) of this order.

c. The interim pollution minimization measures listed in paragraph (5) of this order.

4. MWRD must comply with the following TARP related requirements:

a. In compliance with the Consent Decree concerning the TARP between the United States Environmental Protection Agency (USEPA), Illinois Environmental Protection Agency (IEPA), and MWRD (Am. Pet. Exhibit L), MWRD must complete Stage 2 of the McCook Reservoir by December 31, 2029 and commence full operation no later than December 31, 2030.

b. Evaluate DO impacts of the Stage 1 McCook Reservoir operation on relevant reaches of the CAWS over a 24-month period after commencement of full operation and submit a report to IEPA within 6 months of the end of the 24-month study period. The report must:

i. Provide conclusions regarding expected nonattainment rate of the DO standards under 35 Ill. Adm. Code 302.405 with Stage 1 of McCook in full operation, analyzing wet weather events and dry weather time periods (assuming continued operation of aeration stations whenever operable).

ii. Incorporate an assessment of the impacts on DO standards attainment due to reductions in the State's discretionary diversion allocation.

iii. Include an assessment of feasible options to further increase DO levels in the relevant reaches of the CAWS. This assessment will include, as appropriate, consideration of non-TARP measures such as green infrastructure to reduce CSO discharges and DO violations resulting from CSO discharges.

iv. Contain sufficient information to assist the IEPA to determine whether a TLWQS will be issued to accompany the next permit

that is issued after submittal of the report to O'Brien and Stickney WRPs.

c. Six months before the end of the TLWQS term under paragraph (2), MWRD must submit a report to the Board and IEPA that evaluates the impact of full operation of the Thornton Reservoir on the continued need for the DO TLWQS for the CSO outfalls covered under the Calumet WRP NPDES permit. This report, at a minimum, will must include the following assessments performed by MWRD:

i. whether, and to what extent, there will still be CSOs in the Calumet System given that the Thornton Reservoir is in full operation.

ii. If additional CSOs are expected in the Calumet System, to what extent those CSOs will still be contributing to low DO levels.

iii. If additional CSOs are expected in the Calumet System, the potential alternatives to reduce or eliminate the number of CSOs in the Calumet System, including additional aeration to mitigate the effects of CSOs in the Calumet System on DO.

iv. The feasibility of implementing each of those potential alternatives.

v. What other conditions exist that contribute to low DO levels in the Calumet System and what activities could be implemented to mitigate those conditions or otherwise improve aquatic life in the Calumet System.

5. MWRD must comply with the following interim pollution minimization measures to improve the DO levels in the receiving stream segments:

a. Operate the existing aeration stations at Devon and Webster, and the existing SEPA stations 3, 4 and 5 during operable periods. The "operable" periods do not include occurrences of short-term equipment failure, weed control problems, mechanical problems and replacement of equipment for preventive maintenance purposes. Operation of those stations is not required during any particular time period when it is not needed for the CAWS to meet the DO water quality standards.

b. Continuously monitor DO at the following continuous dissolved oxygen monitoring (CDOM) stations: Foster Avenue and Church Street on the North Shore Channel; Addison Street and Division Street on the North Branch Chicago River; Cicero Avenue, B&O

Railroad, and Lockport on the Chicago Sanitary and Ship Canal; C&W Indiana RR and Halsted Street on the Little Calumet River; and Route 83 on the Cal-Sag Channel.

c. Submit to IEPA a report on DO results each year, summarizing the prior year's data collected under paragraph (5)(b).

d. In any future TLWQS petition addressing the CSO Outfalls covered under O'Brien permit, MWRD must incorporate the results of the report in paragraph (4)(b) for: specifying the expected nonattainment rate of the DO standards during the TLWQS term; requiring continued operation of the aeration stations whenever operable, considering the feasibility of taking other steps to address low DO in the North Shore Channel; and specifying that no other DO-related control requirements applicable to CSO discharges would be imposed during the term of the TLWQS except such steps as are found by the MWRD or the Board to be feasible and appropriate given the goals of the Clean Water Act.

e. In any future TLWQS petition addressing the CSO Outfalls covered under Stickney permit, MWRD must incorporate the results of the report submitted under paragraph 4(b) of this order for: specifying the expected nonattainment rate of the new DO standard during the TLWQS term; requiring continued operation of the aeration stations whenever operable, considering the feasibility of taking other steps to address low DO in the relevant reaches of the CAWS; and specifying that no other DO-related control requirements applicable to CSO discharges would be imposed during the term of the TLWQS except such steps as are found by the MWRD or the Board to be feasible and appropriate given the goals of the Clean Water Act.

6. No other DO-related control requirements will apply to the CSOs covered in the NPDES permits of O'Brien, Stickney and Calumet WRPs during the term of the TLWQS. (This is not intended to refer to the control of any nutrients, including nitrogen and phosphorus, discharged from the Plant.) Any water quality-related requirements applicable to CSO discharges in the permits that accompany this TLWQS are subject to this condition.

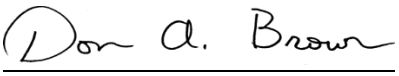
Table 1

CSO Outfall #	Receiving Water	Aquatic Life Use Designation
O'Brien Water Reclamation Plant NPDES Permit		
101	North Shore Channel	CAWS Aquatic Life Use A
102	North Shore Channel	CAWS Aquatic Life Use A
103	North Shore Channel	CAWS Aquatic Life Use A
104	North Shore Channel	CAWS Aquatic Life Use A
105	North Shore Channel	CAWS Aquatic Life Use A
106	North Shore Channel	CAWS Aquatic Life Use A
107	North Branch of Chicago River	CAWS Aquatic Life Use A
110	North Shore Channel	CAWS Aquatic Life Use A
Stickney Water Reclamation Plant NPDES Permit		
142	S. Fork of S. Branch of Chicago River (upstream of CAWS)	Secondary Contact and Indigenous Aquatic Life
143	Chicago San. and Ship Canal	CAWS Aquatic Life Use B
144	Chicago San. and Ship Canal	CAWS Aquatic Life Use B
145	Chicago San. and Ship Canal	CAWS B
146	Chicago San. and Ship Canal	CAWS B
147	Chicago San. and Ship Canal	CAWS B
148	Chicago San. and Ship Canal	CAWS B
149	Chicago San. and Ship Canal	CAWS B
Calumet Water Reclamation Plant NPDES Permit		
006	Calumet Sag Channel	CAWS A
007	Calumet Sag Channel	CAWS A
010	North Creek (upstream of CAWS)	General Use
151	Calumet River	CAWS A
152	Calumet River	CAWS A
153	Little Calumet River	CAWS A
154	Calumet Sag Channel	CAWS A
156	Calumet Sag Channel	CAWS A
157	Calumet Sag Channel	CAWS A
158	Calumet Sag Channel	CAWS A
160	Calumet Sag Channel	CAWS A

IT IS SO ORDERED.

Any person adversely affected or threatened by this final Board order may obtain judicial review of the order by filing a petition for review within 35 days after the date the Board order was served on the person affected by the order, under the provisions of the Administrative Review Law, and the rules adopted under it, except that review will be afforded directly in the appellate court for the district in which the cause of action arose and not in the circuit court. For purposes of this judicial review, a person is deemed to have been served with the Board's final order on the date on which the order is first published by the Board on its website. 415 ILCS 5/38.5(j) (2020); 35 Ill. Adm. Code 104.585. Within 35 days after receiving this final Board order, any participant to this Board proceeding may file a motion asking the Board to reconsider or modify the order. 35 Ill. Adm. Code 101.520, 104.565(e). Filing a motion to reconsider this final Board order is not a prerequisite to appealing the order. 35 Ill. Adm. Code 101.902.

I, Don A. Brown, Clerk of the Illinois Pollution Control Board, certify that the Board adopted the above opinion and order on December 16, 2021, by a vote of 5-0.



Don A. Brown, Clerk
Illinois Pollution Control Board

ATTACHMENT A – MAP OF MWRD OUTFALLS

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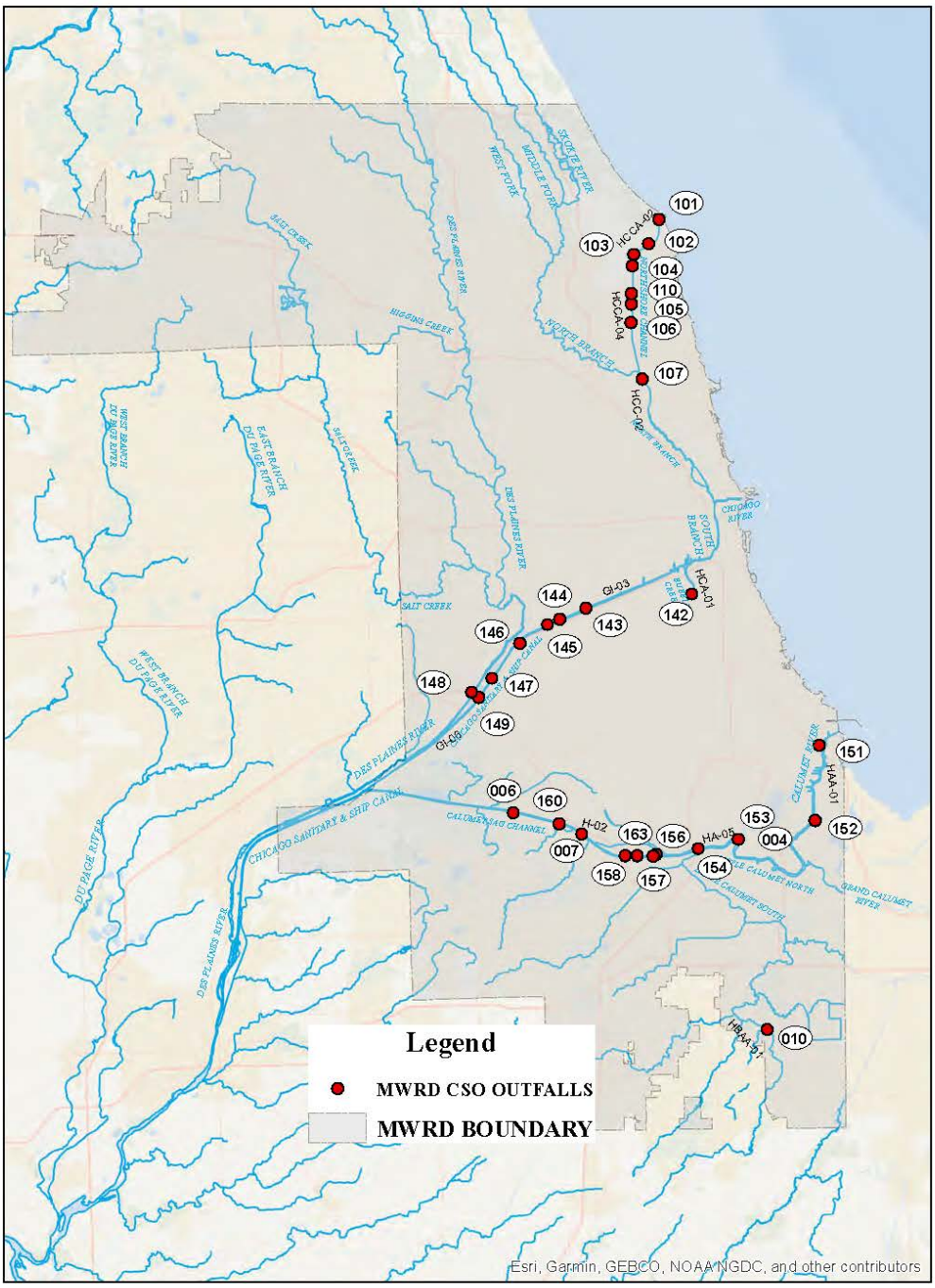
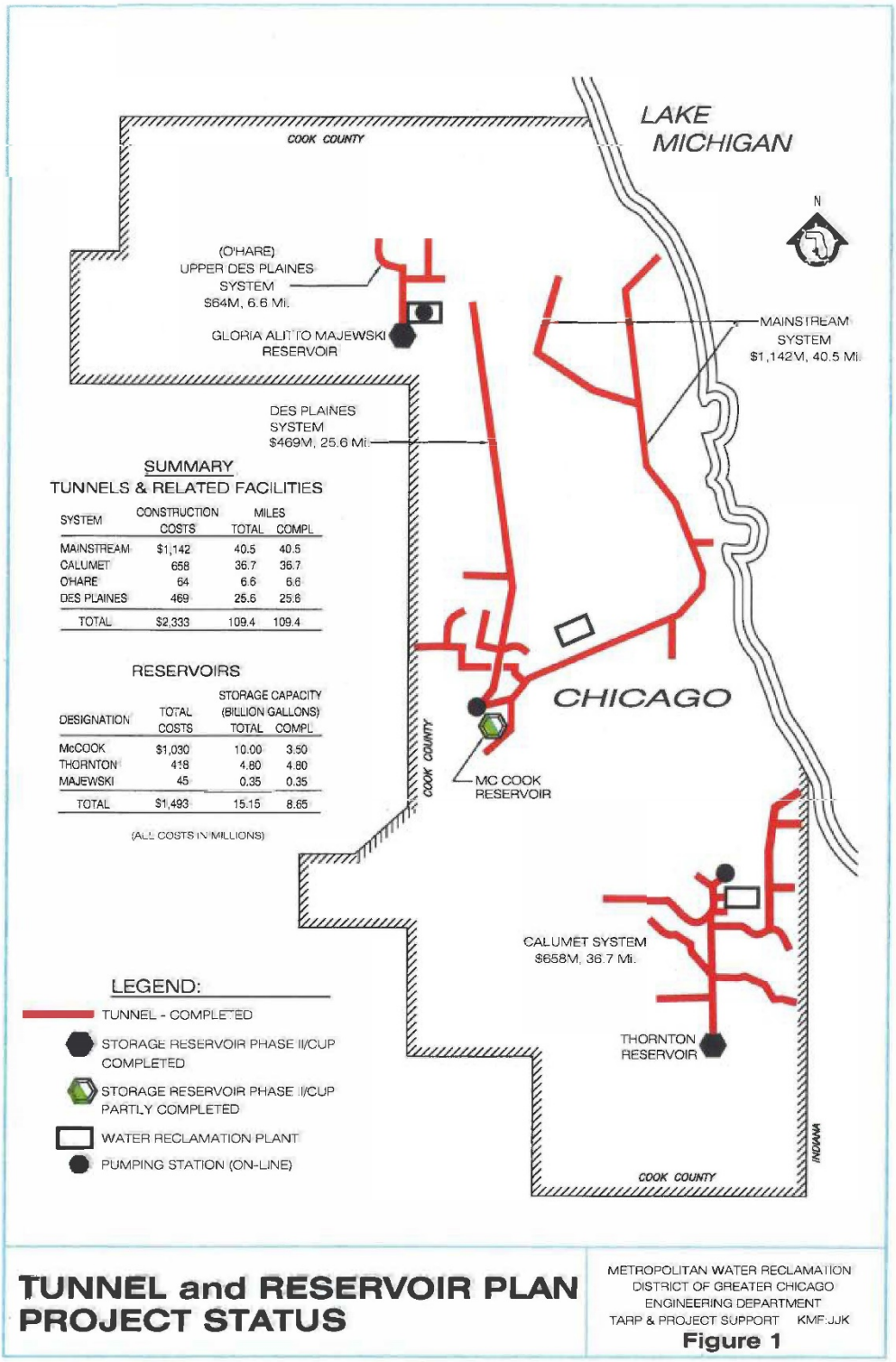
ILAUID REACHES WITH MWRD CSO OUTFALLS TO CAWS



ATTACHMENT B – MAP OF TARP SYSTEM



TUNNEL and RESERVOIR PLAN
PROJECT STATUS

METROPOLITAN WATER RECLAMATION
DISTRICT OF GREATER CHICAGO
ENGINEERING DEPARTMENT
TARP & PROJECT SUPPORT KMF:JJK

Figure 1