

**IN THE CIRCUIT COURT OF COOK COUNTY, ILLINOIS  
COUNTY DEPARTMENT, CHANCERY DIVISION**

PEOPLE OF THE STATE OF ILLINOIS,	)	
<i>ex rel.</i> KWAME RAOUL, Attorney	)	
General of the State Illinois,	)	
	)	
Plaintiff,	)	
	)	
and	)	
	)	
SIERRA CLUB and FRIENDS OF THE	)	No. 18 CH 10229
CHICAGO RIVER,	)	
	)	
Plaintiff-Intervenors,	)	Judge Thaddeus L. Wilson
	)	
	)	
v.	)	
	)	
401 NORTH WABASH VENTURE, LLC,	)	
d/b/a TRUMP INTERNATIONAL	)	
HOTEL & TOWER, a Delaware	)	
limited liability company,	)	
	)	
Defendant.	)	

**CONSENT ORDER**

Plaintiff, PEOPLE OF THE STATE OF ILLINOIS, *ex rel.* KWAME RAOUL, Attorney General of the State of Illinois (“the People”), the ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (“Illinois EPA”), Plaintiff-Intervenors, SIERRA CLUB and FRIENDS OF THE CHICAGO RIVER (“Plaintiff-Intervenors”) and Defendant, 401 NORTH WABASH VENTURE, LLC (“Defendant”), (collectively “Parties to the Consent Order”), have agreed to the making of this Consent Order and submit it to this Court for approval.

**I. INTRODUCTION**

This stipulation of facts is made and agreed upon for purposes of settlement only and as a factual basis for the Court’s entry of the Consent Order and issuance of any injunctive relief. None

of the facts stipulated herein shall be introduced into evidence in any other proceeding regarding the violations of the Illinois Environmental Protection Act (“Act”), 415 ILCS 5/1 *et seq.* (2022), and the Illinois Pollution Control Board (“Board”) regulations, alleged in the People’s Second Amended Complaint, or any other proceeding regarding the creation of a public nuisance as alleged in Count II of the Plaintiff-Intervenors’ Amended Complaint in Intervention, except as otherwise provided herein. It is the intent of the Parties to this Consent Order that it be a final judgment on the merits of this matter.

**A. Parties**

1. On August 22, 2018, a Complaint was filed on behalf of the People of the State of Illinois by Lisa Madigan, then Attorney General of the State of Illinois, on her own motion and upon the request of the Illinois EPA, pursuant to Section 42(d) and (e) of the Act, 415 ILCS 5/42(d) and (e) (2016), against the Defendant. On April 20, 2023, the People filed a First Amended Complaint updating and clarifying the allegations of the original Complaint. On September 18, 2023, the People filed a Second Amended Complaint adding an additional count for subsequently discovered violations.

2. On August 29, 2018, Plaintiff-Intervenors filed a Complaint in Intervention for Injunctive Relief and Civil Penalties pursuant to 33 U.S.C. § 1365(b)(1)(B) of the Clean Water Act, alleging violations of the Clean Water Act and Public Nuisance against Defendant. On September 25, 2023, Plaintiff-Intervenors filed an Amended Complaint in Intervention adding additional allegations based on subsequently discovered violations.

3. On October 1, 2018, Parties to the Consent Order entered into an Agreed Interim Order to address the People’s and Plaintiff-Intervenors’ most immediate concerns regarding the

allegations in their respective complaints. This Consent Order supersedes the terms and conditions of the Agreed Interim Order.

4. On March 20, 2024, the Court dismissed Plaintiff-Intervenors' Counts I and III of the Amended Complaint in Intervention. Plaintiff-Intervenors preserved for appeal these dismissed claims and per the Court's order, each claim may be brought in federal court.

5. The Illinois EPA is an administrative agency of the State of Illinois, created pursuant to Section 4 of the Act, 415 ILCS 5/4 (2022).

6. At all times relevant to the Second Amended Complaint, Defendant, 401 North Wabash Venture, LLC, was and is a Delaware corporation which has operated the Cooling Water Intake System ("CWIS") at the Trump International Hotel and Tower facility located at 401 North Wabash, Chicago, Cook County, Illinois ("Facility").

7. Plaintiff-Intervenor Sierra Club, a not-for-profit corporation organized and existing under the laws of the State of California, is a national environmental organization with approximately 617,000 members with offices and programs authorized and doing business in the State of Illinois, including Chicago, Illinois.

8. Plaintiff-Intervenor Friends of the Chicago River ("Friends") is a not-for-profit corporation organized and existing under the laws of the State of Illinois, whose mission is to improve and protect the Chicago River system for people, plants, and animals. Friends works to improve the water quality of the river so that it can support native plants, fish and other wildlife, and a variety of recreational uses; performs on-the-ground projects that result in physical improvements and the preservation of quality habitat; and engages in education and outreach programs that inform and inspire people to help revitalize the Chicago River.

## **B. Chancery Court Findings and Orders**

1. On September 9, 2024, this Court granted both the People's and Plaintiff-Intervenors' motions for summary judgment as to liability with respect to all five counts of the People's Second Amended Complaint and Count II of Plaintiff-Intervenors' Amended Complaint in Intervention. In so holding, the Court found the People's alleged facts were well founded, not materially challenged, and there was no dispute that, as alleged in Counts I through V of the People's Second Amended Complaint, Defendant "violated Sections 12(a) and (f) of the Act, 415 ILCS 5/12(a) and (f) (2022), Paragraph 9 of the October 1, 2018 Agreed Interim Order, Sections 305.102(b), 306.201, 309.102(a), and 309.104(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 305.102(b), 306.201, 309.102(a), and 309.104(a), and Special conditions 1 and 8, and Standard Conditions 1, 2, 10(a) and (d), 11(d), and 21 of its [National Pollutant Discharge Elimination System ("NPDES")] permit." SJ Order, Sept. 9, 2024, at 3.

2. In the Court's September 9, 2024 decision, it also found "Plaintiff-Intervenors' alleged facts are well founded, not materially challenged, and there is no dispute that, as alleged in Count II of Plaintiff-Intervenors' Complaint, Defendant has created and continues to create a public nuisance in violation of Illinois law by operating its CWIS in a manner that substantially and unreasonably interferes with the public right to fish and otherwise recreate in the Chicago River." at 4. The Court further found that none of the matters raised in any of Defendant's purported affirmative defenses to Plaintiff-Intervenors' public nuisance claim provides any valid legal or factual basis to deny summary judgment to Plaintiff-Intervenors' on that claim." *Id.*

3. In particular, on September 9, 2024, the Court ruled on summary judgment that Defendant has violated the following provisions of the Act and Board regulations:

Count I: Discharge without an NPDES Permit in violation of Sections 12(f) of the Act, 415 ILCS 5/12(f) (2022), and Sections 309.102(a) and

309.104(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 309.102(a) and 309.104(a).

- Count II: Failure to Comply with NPDES Regulations Applicable to Cooling Water Intake Structures for New Facilities in violation of Section 12(f) of the Act, 415 ILCS 5/12(f) (2022), and Sections 306.201 and 309.102(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 306.201 and 309.102(a).
- Count III: Violations of Special Condition 8 and Standard Condition 27 of its NPDES Permit in violation of Section 12(f) of the Act, 415 ILCS 5/12(f) (2022), and Sections 305.102(b), 306.201, and 309.102(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 305.102(b), 306.201, and 309.102(a).
- Count IV: Misreporting Discharge Flow in Monthly Discharge Monitoring Reports, in violation of Special Condition 1, and Standard Conditions 1, 10(a) and (d), 11(d), and 21 of its NPDES Permit, and therefore Section 12(f) of the Act, 415 ILCS 5/12(f) (2022), Section 309.102(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 309.102(a), and Paragraph 9 of the October 1, 2018 Agreed Interim Order.
- Count V: Discharging in violation of Sections 305.102(b), 306.201, 309.102(a), and 309.104(a) of the Board Water Pollution Regulations, 35 Ill. Adm. Code 305.102(b), 306.201, 309.102(a), and 309.104(a), and therefore in violation of Section 12(a) of the Act, 415 ILCS 5/12(a) (2022).

4. In addition, on September 9, 2024, the Court ruled on summary judgment that Defendant is liable for the following torts as alleged in Plaintiff-Intervenors' Amended Complaint in Intervention:

- Count II: Creating and maintaining a public nuisance by operating a 20 MGD intake and discharging for years in violation of permit conditions and regulations designed to protect aquatic life, and continuing to operate said intake without obtaining permits containing appropriate limits or minimizing its impact on aquatic life, such that Defendant has substantially and unreasonably interfered in Plaintiff-Intervenors' right to fish and otherwise recreate in the Chicago River and may substantially so interfere in the future.

**C. Non-Admission of Violations**

Notwithstanding the Court's rulings on summary judgment, as the case is not yet ripe for appeal, Defendant represents that it has entered into this Consent Order for the purpose of settling and compromising disputed claims without having to incur the expense of contested litigation. By entering into this Consent Order and complying with its terms, Defendant does not affirmatively admit the allegations of violation within the Second Amended Complaint and Amended Complaint in Intervention referenced above, and this Consent Order shall not be interpreted as including such admission.

**D. Compliance Activities to Date**

1. On October 1, 2018, the Court entered an Agreed Interim Order. Defendant complied with a number of tasks detailed in the Agreed Interim Order in an effort to achieve regulatory compliance and to renew its NPDES Permit for the Facility. Those tasks include, but are not limited to, studies and proposals designed to study and comply with discharge flow requirements, intake requirements, and impingement and entrainment requirements.

2. On July 31, 2018, Defendant submitted to the Illinois EPA a proposal titled "Section 316(b) Evaluation Approach for 401 North Wabash," prepared by Defendant's consultant, Burns & McDonnell, to address the violations alleged in the People's Complaint. Defendant provided a copy of the proposal to Plaintiff-Intervenors on August 3, 2018.

3. On October 1, 2018, Defendant submitted a proposal to the Illinois EPA and Plaintiff-Intervenors for the collection of impingement and entrainment information as required by 40 C.F.R. § 125.86(c)(2)(iii) ("I&E Study Plan").

4. On November 28, 2018, Defendant submitted a revised version of the above-referenced October 1, 2018 submission, incorporating the Illinois EPA's and Plaintiff-Intervenors' comments ("Revised Impingement and Entrainment Study Plan).

5. On February 28, 2019, Defendant submitted to the Illinois EPA and Plaintiff-Intervenors some of the factual information required by 40 C.F.R. §122.21(r)(2), (3), and (4) and § 125.86(c)(1).

6. On January 1, 2020, Defendant submitted to the Illinois EPA and Plaintiff-Intervenors a Comprehensive Demonstration Study, in accordance with 40 C.F.R. § 125.86(c)(2), for the Illinois EPA's review and approval.

7. Between September 22, 2020 and April 12, 2024, Parties exchanged comments and responses regarding the Comprehensive Demonstration Study.

8. On September 9, 2024, Defendant submitted to the People for the Illinois EPA's review, and to Plaintiff Intervenors, a draft CWIS screen proposal followed by a Conceptual Diagram of the proposal on November 27, 2024.

9. On April 12, 13, and 14, 2025, Defendant installed meters at its CWIS intakes and outfalls to accurately measure the volume of Defendant's heated effluent discharges from its CWIS ("flow meters"). On May 15, 2025, Defendant provided written notification to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order, indicating the date the outfall flow meters were installed and tested, including all calibration records, and a certification that all future DMRs and other NPDES reporting from that point forward will accurately reflect a complete month of discharge flow as measured by the newly installed flow meters.

## **II. APPLICABILITY**

1. This Consent Order shall apply to and be binding upon the Parties to the Consent Order. Defendant waives as a defense to any enforcement action taken pursuant to this Consent Order the failure of any of its officers, directors, agents, employees, successors, or assigns to take such action as shall be required to comply with the provisions of this Consent Order. This Consent Order may be used against Defendant in any subsequent enforcement action or permit proceeding as proof of a past adjudication of violation of the Act and the Board Regulations for all violations alleged in the Second Amended Complaint in this matter, for purposes of Sections 39 and 42 of the Act, 415 ILCS 5/39 and 42 (2022).

2. Defendant shall notify each contractor to be retained to perform work required in this Consent Order of each of the requirements of this Consent Order relevant to the activities to be performed by that contractor, including all relevant work schedules and reporting deadlines, and shall provide a copy of this Consent Order to each contractor already retained no later than thirty (30) calendar days after the date of entry of this Consent Order. In addition, Defendant shall provide copies of all schedules for implementation of the provisions of this Consent Order to the prime vendor(s) supplying the control technology systems and other equipment required by this Consent Order.

3. No change in ownership, corporate status, or operator of the Facility shall in any way alter the responsibilities of Defendant under this Consent Order. In the event that Defendant proposes to sell or transfer any real property or operations subject to this Consent Order, Defendant shall notify the People thirty (30) calendar days prior to the conveyance of title, ownership or other interest, including a leasehold interest in the Facility or a portion thereof. This requirement shall be limited to any transfer of ownership and/or control of the Facility's CWIS and does not apply

beyond Defendant to any other individual or entity owning or leasing real property within the Facility that is not a party to this Consent Order. Defendant shall make as a condition of any such sale or transfer, that the purchaser or successor provide to Defendant site access and all cooperation necessary for Defendant to perform to completion any compliance obligation(s) required by this Consent Order. Defendant shall provide a copy of this Consent Order to any such successor in interest, and Defendant shall continue to be bound by and remain liable for performance of all obligations under this Consent Order. In appropriate circumstances, however, Defendant and a proposed purchaser or operator of the Facility may jointly request, and the People in its discretion, may consider modification of this Consent Order to obligate the proposed purchaser or operator to carry out future requirements of this Consent Order in place of, or in addition to, Defendant. This provision does not relieve Defendant from compliance with any regulatory requirement regarding notice and transfer of applicable Facility permits.

### **III. JUDGMENT ORDER**

This Court has jurisdiction of the subject matter herein and of the Parties to the Consent Order and, having considered the stipulated facts and being advised in the premises, finds the following relief appropriate:

#### **IT IS HEREBY ORDERED, ADJUDGED AND DECREED:**

##### **A. Payments**

##### **Civil Penalty**

1. Defendant shall pay a civil penalty of one million, five hundred thousand dollars (\$1,500,000.00). Payment shall be tendered at time of entry of the Consent Order, as follows:
  - a. A civil penalty payment in the amount of seven hundred and fifty thousand dollars (\$750,000.00) shall be made by certified check or money order

payable to the Illinois EPA for deposit into the Environmental Protection Trust Fund (“EPTF”). The case name and case number shall appear on the face of the certified check or money order.

- b. A civil penalty payment in the amount of seven hundred and fifty thousand dollars (\$750,000.00) shall be made by via electronic funds transfer, in accordance with instructions that the People shall provide to Defendant prior to entry of this Consent Order, to the Illinois Attorney General State Projects and Court Ordered Distribution Fund (801 Fund) for subsequent expenditure to fund environmental enforcement activities as authorized by the Illinois Attorney General. The payment transfer shall reference the case name and case number.

### **Payments to Plaintiff-Intervenors**

#### **Supplemental Environmental Project**

2. In order to promote the goals of the Act to restore, protect and enhance the quality of the environment, Defendant shall pay the amount of three million dollars (\$3,000,000.00) at the time of entry of this Consent Order to fund the supplemental environmental project (“SEP”) described in Section III.E.1 of this Consent Order (“SEP Payment”). The payment will partially offset penalties sought by the State and Plaintiff-Intervenors in this matter.

3. Upon entry of this Consent Order, Defendant shall pay the above-referenced SEP Payment to Friends, which Friends shall administer pursuant to the provisions in Section III.E below. Payment shall be tendered via electronic funds transfer or check in accordance with instructions that Friends shall provide to Defendant prior to entry of this Consent Order. The

payment transfer or check shall reference the case name and case number. Proof of payment and the transmittal shall be sent to:

Elizabeth Dubats  
Assistant Attorney General  
Environmental Bureau  
Illinois Attorney General's Office  
69 W. Washington Street, Suite 1800  
Chicago, Illinois 60602

#### **Plaintiff-Intervenors' Attorneys' Fees**

4. Plaintiff-Intervenors could assert a statutory claim for attorneys' fees if (1) they pursued their dismissed claims described in Section I.A.4 on appeal and prevailed, or (2) they pursued those dismissed claims in federal court and prevailed. However, to achieve a global settlement, Defendant and Plaintiff-Intervenors agree to compromise and resolve the Plaintiff-Intervenors' claims for attorneys' fees. Accordingly, Defendant shall pay to Plaintiff-Intervenors three hundred thousand dollars (\$300,000.00) for their attorneys' fees and costs ("Attorneys' Fee Payment").

5. Upon entry of this Consent Order, Defendant shall the above-referenced Attorneys' Fee Payment to Friends in complete satisfaction of all of Plaintiff-Intervenors' collective claims for attorneys' fees and costs in this matter that they could otherwise pursue on appeal or in federal court. The payment shall be made by electronic funds transfer or check payable to Friends of the Chicago River in accordance with instructions that Friends shall provide to Defendant prior to entry of this Consent Order. The payment transfer or check shall reference the case name and case number.

#### **B. Stipulated Penalties, Interest and Default**

1. If Defendant fails to complete any activity or fails to comply with any response or reporting requirement by the date specified in this Consent Order, Defendant shall provide notice

to the People and Plaintiff-Intervenors of each failure to comply with this Consent Order and shall pay stipulated penalties in the amount of \$1,000.00 per day per violation for up to the first fifteen (15) days of violation, \$2,000.00 per day per violation for the next fifteen (15) days of violation, and \$3,000.00 per day per violation thereafter until such time that compliance is achieved. The People and/or Plaintiff-Intervenors may make a demand for stipulated penalties upon Defendant for its noncompliance with this Consent Order. However, failure by the People and/or Plaintiff-Intervenors to make this demand shall not relieve Defendant of the obligation to pay stipulated penalties. All stipulated penalties shall be payable within thirty (30) calendar days of the date Defendant knows or should have known of its noncompliance with any provision of this Consent Order. In the event the People and/or Plaintiff-Intervenors provide notice to Defendant pursuant to this paragraph, they shall simultaneously provide a copy of such notice to the other Party.

2. The stipulated penalties provided herein shall not apply to Defendant's failure to timely complete any activity specified in this Consent Order provided all of the following conditions are met: 1) such failure resulted from the actions of a third party beyond Defendant's control, including but not limited to delays in obtaining authorizations, permits, and/or approvals required to complete an activity required under this Consent Order; 2) Defendant can demonstrate that it was diligent in attempting to meet the requirements of this Consent Order by showing it made a complete and timely request for a permit application, authorization, or approval of any requirements in Section III.D. of this Consent Order; 3) Defendant made timely efforts to mitigate the anticipated violation of the Consent Order, including, but not limited to, curing any defects identified by the third party in its applications; and 4) Defendant notifies the People and/or Plaintiff-Intervenors in writing of the anticipated violation of the Consent Order at the contacts listed in Section III.I within fourteen (14) days of discovery of the anticipated violation of the

Consent Order and requests Modification of the Consent Order pursuant to Section III.G of this Consent Order.

3. If Defendant fails to make any payment required by this Consent Order on or before the date upon which the payment is due, Defendant shall be in default and the remaining unpaid balance of the penalty, plus any accrued interest, shall be due and owing immediately. In the event of default, the People and/or Plaintiff-Intervenors shall be entitled to reasonable costs of collection, including reasonable attorney's fees.

4. Pursuant to Section 42(g) of the Act, interest shall accrue on any penalty amount owed by Defendant not paid within the time prescribed herein. Interest on unpaid penalties or fees shall begin to accrue from the date such are due and continue to accrue to the date full payment is received. Where partial payment is made on any penalty amount that is due, such partial payment shall be first applied to any interest on unpaid penalties then owing.

5. The stipulated penalties shall be enforceable by the People and/or Plaintiff-Intervenors and shall be in addition to, and shall not preclude the use of, any other remedies or sanctions arising from the failure to comply with this Consent Order.

**C. Stipulated Penalty and Interest Payment Procedures**

1. All payments required by Section III.B of this Consent Order shall be made by certified check or money order payable to the Illinois EPA for deposit into the EPTF. Payments shall be sent by first class mail and delivered to:

Illinois Environmental Protection Agency  
Fiscal Services  
2520 W. Iles Ave.  
P.O. Box 19276  
Springfield, IL 62794-9276

2. The case name and case number shall appear on the face of the certified check or money order. A copy of the certified check or money order and any transmittal letter shall be sent to:

Elizabeth Dubats  
Assistant Attorney General  
Environmental Bureau  
Illinois Attorney General's Office  
69 W. Washington Street, Suite 1800  
Chicago, Illinois 60602

**D. Future Compliance**

**Flow Meters and Discharge Monitoring Reports (“DMRs”)**

1. On or before August 1, 2025, Defendant shall finalize installation of intake flow meters and provide written notification to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order, indicating the date the intake flow meters were installed and tested, including all calibration records, and a certification that all future DMRs and other NPDES reporting from that point forward will accurately reflect a complete month of flow as measured by the newly installed flow meters.

2. On or before August 30, 2025, Defendant shall retain an independent third-party consultant and complete an audit of the accuracy of the flow meters and the Building Automation System to determine whether the flow meters accurately reflect the condenser water return flow. Within ten (10) days of the completion of the audit, Defendant shall submit the audit to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order.

3. Upon installation and operation of the flow meters described in Sections I.D.9 and III.D.1, Defendant shall share the new effluent discharge and cooling water intake flow data from its DMRs with the contacts listed in Section III.I of this Consent Order monthly for the first year

of operation. Defendant shall submit the new effluent discharge and cooling water intake flow data by the 15th of the following month.

4. Defendant shall continue to submit its effluent discharge volume to the Illinois EPA in its DMRs in Million of Gallons per Day (“MGD”) for its cooling water discharges from its CWIS as required by Special Condition 1, Standard Condition 10, Standard Condition 11(d) and Standard Condition 21 of the Facility’s NPDES Permit No. IL0079812, issued September 7, 2012, modified March 15, 2013, and expired on August 31, 2017, which pursuant to the Agreed Interim Order, entered October 1, 2018, and continued by agreement pursuant to Section III.D.25 of this Consent Order, Defendant must comply with all terms and provisions of the expired NPDES Permit No. IL0079812, except for Special Condition 8 which was deemed inapplicable.

#### **Impingement and Entrainment**

5. Within thirty (30) days of entry of this Consent Order, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, calculations demonstrating the proposal for a wedgewire screen system and conceptual diagram of that proposed system, which were previously submitted by Defendant to the Illinois EPA on September 9, 2024 and November 27, 2024, and which system will be designed to be limited to and will operate at a through-screen velocity of less than 0.5 feet per second based on the Facility’s maximum pumping rate.

6. Within one hundred and twenty (120) days of entry of this Consent Order, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, a detailed engineering proposal for installation of a wedgewire screen system (“Wedgewire Screen System”) including construction plans, design specifications, and calculations showing the design meets the impingement and entrainment requirements for New

Facilities under Subpart I of the federal Clean Water Act Regulations, 40 C.F.R. § 125.80 *et seq.*, and consisting of:

- a. Two (2) 0.5-millimeter (mm) mesh cylindrical wedgewire half screens with a through-screen velocity of less than 0.5 feet per second over each intake at the Facility;
- b. Each wedgewire screen shall include an intermittent airburst system to remove potentially impinged organisms and debris from the screen; and
- c. A continuous bubble curtain in front of each wedgewire screen to act as a behavioral barrier to further reduce impingement.
- d. The proposal shall include a proposed protocol for system operation and maintenance.

7. Within thirty (30) days of entry of this Consent Order, Defendant shall initiate impingement and entrainment sampling to obtain supplemental baseline data to assist with characterizing existing impingement and entrainment rates at the Facility (“Impingement and Entrainment Study”). Sampling shall be conducted utilizing the same methods and quality assurance procedures as Defendant implemented in its Revised Impingement and Entrainment Study Plan for 401 North Wabash pursuant to 40 C.F.R. § 125.86(c)(2)(iii)(D). The Revised Impingement and Entrainment Study Plan for 401 North Wabash is incorporated herein by reference and attached hereto as **Appendix A**. The approved impingement and entrainment sampling work shall continue for 12 months from its commencement.

8. Within sixty (60) days of the Illinois EPA’s approval of the Wedgewire Screen System proposal, Defendant shall apply for the appropriate river construction permits from the U.S. Army Corps of Engineers, the Illinois Department of Natural Resources (“IDNR”) Office of

Water Resources, the Illinois EPA, and any other applicable federal, state, or local government permits and approvals.

9. To the extent that Defendant is unable to secure any of these necessary permits in Section III.D.8, then:

- a. Within sixty (60) days of being notified of the final denial of any of these necessary permits, in lieu of complying with Section III.D.10-15 with respect to the Wedgewire Screen System, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, an engineering study on water usage alternatives including, but not limited to, partial or total conversion to a closed-cycle cooling system via connection to purchased cooling water and/or construction of cooling towers. The study shall include a compliance plan with a detailed schedule for implementation (“Compliance Plan”).
- b. In addition to the Compliance Plan, if applicable, Defendant may also submit a request for “alternative requirements” pursuant to 40 C.F.R. §125.85 and in accordance with Section III.D.24 of this Consent Order to the Illinois EPA for review and approval, pursuant to Section III.D.30 of this Consent Order, and commence implementation of that plan within sixty (60) days of the Illinois EPA approval.
- c. Within sixty (60) days of the Illinois EPA approval of a Compliance Plan pursuant to Section III.D.9.a of this Consent Order, Defendant shall commence implementation of that plan in accordance with the schedule set forth therein. The Compliance Plan shall be incorporated into the terms of

this Consent Order and any violations of the terms of the Compliance Plan shall be enforceable as violations of this Consent Order.

10. Within sixty (60) days of the Illinois EPA's approval of the Wedgewire Screen System proposal, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, a two (2) year Verification Monitoring Plan addressing requirements in 40 C.F.R § 125.86(c)(2)(iv)(D) and develop a plan to evaluate impingement and entrainment efficacy of the Wedgewire Screen System.

11. Within one hundred and eighty (180) days of securing the necessary permits pursuant to Section III.D.8 of this Consent Order, Defendant shall commence construction, and installation of the Wedgewire Screen System pursuant to the Illinois EPA-approved Wedgewire Screen System proposal including any Illinois EPA-added conditions to its approval. If Defendant is unable to commence construction within one hundred and eighty (180) days of securing the necessary permits due to delays in procurement of construction materials including the wedgewire screen and associated subcomponents caused by third parties or other circumstances beyond Defendant's control, Defendant may seek to modify the deadline via Section III.G or seek to secure the additional time necessary to comply via the Force Majeure provisions of Section III.F of this Consent Order.

12. Within one hundred and eighty (180) days of commencing construction of the Wedgewire Screen System, Defendant shall complete construction. Defendant shall commence the operation of the Wedgewire Screen System within thirty (30) days of completion of construction of the Wedgewire Screen System. If Defendant is unable to complete construction within one hundred and eighty (180) days of commencing construction due to delays caused by weather or river conditions, Defendant may seek to modify the deadline via Section III.G or seek

to secure the additional time necessary to comply via the Force Majeure provisions of Section III.F of this Consent Order.

13. Within fourteen (14) days of commencement of the operation of the Wedgewire Screen System in Section III.D.12 of this Consent Order, Defendant shall submit to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order, written verification that the Wedgewire Screen System operates at a through-screen velocity of less than 0.5 feet per second.

14. If Defendant is unable to achieve a through-screen velocity of less than 0.5 feet per second with the Wedgewire Screen System and Defendant has reason to believe that compliance with the 0.5 feet per second through-screen velocity requirement can be achieved with adjustments to the Wedgewire Screen System, then within fourteen (14) days of commencement of the operation of the Wedgewire Screen System, Defendant shall submit written notification of its current measured through-screen velocity and a compliance plan with a proposed schedule of modifications to the Wedgewire Screen System with calculations demonstrating compliance with the 0.5 feet per second through-screen velocity requirement to the Illinois EPA for review and approval, pursuant to Section III.D.30 of this Consent Order.

15. If Defendant is unable to achieve a through-screen velocity of less than 0.5 feet per second with the Wedgewire Screen System, then:

- a. Within sixty (60) days after becoming aware that it cannot achieve a through-screen velocity of less than 0.5 feet per second with the Wedgewire Screen System, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, an engineering study on water usage alternatives including, but not limited to, partial or total conversion to a closed-cycle cooling system via connection

to purchased cooling water and/or construction of cooling towers. The study shall include a Compliance Plan with a detailed schedule for implementation.

- b. In addition to the Compliance Plan, if applicable, Defendant may also submit a request for “alternative requirements” pursuant to 40 C.F.R. § 125.85 and in accordance with Section III.D.24 of this Consent Order to the Illinois EPA for review and approval, pursuant to Section III.D.30 of this Consent Order, and commence implementation of that plan within sixty (60) days of the Illinois EPA approval.
- c. Within sixty (60) days of the Illinois EPA approval of a Compliance Plan pursuant to Section III.D.15.a of this Consent Order, Defendant shall commence implementation of that plan in accordance with the schedule set forth therein. The Compliance Plan shall be incorporated into the terms of this Consent Order and any violations of the terms of the Compliance Plan shall be enforceable as violations of this Consent Order.

16. Within thirty (30) days of the latter of the date between (1) the installation, testing, and operation of the Wedgewire Screen System required by Sections III.D.11 and 12 of this Consent Order, and (2) the date of the Illinois EPA’s approval of the proposed Verification Monitoring Plan required by Section III.D.10 of this Consent Order, Defendant shall commence verification monitoring pursuant to the approved two (2) year Verification Monitoring Plan.

17. Within one hundred twenty (120) days of acquiring 1) twelve (12) months of discharge flow volume data in GPM from the flow meters referenced in Sections I.D.9 and III.D.1 of this Consent Order, and 2) completion of the Impingement and Entrainment Study required by

Section III.D.7 of this Consent Order, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, a Comprehensive Demonstration Study meeting the requirements of 40 C.F.R. § 125.86(c)(2) (“Comprehensive Demonstration Study”).

18. Within sixty (60) days of completing the Impingement and Entrainment Study, Defendant will open EcoCAT consultation with IDNR and submit the data collected in the impingement and entrainment studies. Consistent with the requirements of 40 C.F.R §§ 125.86(c)(2)(iii)(C) and 122.21(r)(4), upon receipt of the IDNR consultation termination letter, Defendant will submit a copy to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order.

19. Within one hundred twenty (120) days of the last sampling date of the two (2) year Verification Monitoring, Defendant shall submit a report to the Illinois EPA for review and approval, pursuant to Section III.D.30 of this Consent Order, summarizing the results of the 2-year Verification Monitoring.

#### **Proportional Flow Requirement**

20. Pursuant to 40 C.F.R § 125.84(d)(2)(i), Defendant’s CWIS located in the Main Branch of the Chicago River, a freshwater river or stream, must have a total design intake flow that is no greater than five (5) percent of the Main Branch of the Chicago River’s annual mean flow. Between 1997 and 2005, the mean annual flow of the Main Branch of the Chicago River was 197 cubic feet per second (“cfs”) based on the data from the Columbus Drive United States Geological Service gaging station. Therefore, five (5) percent of the source water annual mean flow is 6.37 MGD or 9.85 cfs.

21. On or before September 30, 2025, Defendant shall submit an interim report to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order, describing generally the status of its investigation into engineering solutions to reduce the unaveraged maximum volume of the Facility's cooling water withdrawals to 6.37 MGD or 9.85 cfs or below.

22. On or before December 31, 2025, following Defendant installing flow meters per Sections I.D.9 and III.D.1 of this Consent Order, and collecting accurate flow data in a period from June 1, 2025 to October 31, 2025, Defendant must submit a report to the Illinois EPA, pursuant to Section III.D.30 of this Consent Order, showing whether its maximum unaveraged discharge flow is no greater than 6.37 MGD or 9.85 cfs.

23. If Defendant is unable to show that its maximum unaveraged discharge flow did not exceed 6.37 MGD or 9.85 cfs during the June 1, 2025 to October 31, 2025, data collection period, then:

- a. By February 15, 2026, Defendant shall submit to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order, an engineering study on water usage alternatives for achieving compliance with 40 C.F.R § 125.84(d)(2)(i) including, but not limited to, partial or total conversion to a closed-cycle cooling system via connection to purchased cooling water and/or construction of cooling towers. The study shall include a Compliance Plan with a detailed schedule for implementation. If Defendant completes total conversion to a closed-cycle cooling system via connection to purchased cooling water and/or construction of cooling towers, then Defendant would no longer be required to comply with Section III.D.10-15 with respect to the Wedgewire Screen System.

- b. In addition to the Compliance Plan, if applicable, Defendant may submit a request for “alternative requirements” pursuant to 40 C.F.R § 125.85 and in accordance with Section III.D.24 of this Consent Order to the Illinois EPA for its review and approval, pursuant to Section III.D.30 of this Consent Order.
- c. Within thirty (30) days of the Illinois EPA approval of a Compliance Plan pursuant to Section III.D.23.a of this Consent Order, Defendant shall commence implementation of that plan in accordance with the schedule set forth therein. The Compliance Plan shall be incorporated into the terms of this Consent Order and any violations of the terms of the Compliance Plan shall be enforceable as violations of this Consent Order.

**NPDES Permit and continuing obligations**

24. In accordance with 40 C.F.R § 125.85, Defendant may request that alternative requirements less stringent than those specified in § 125.84(a) through (e) be imposed in its NPDES permit. Any “alternative requirements” request that Defendant submits to the Illinois EPA for consideration pursuant to 40 C.F.R § 125.85, shall not include a cost-benefit analysis but instead include an analysis demonstrating the alternative requirement requested is no less stringent than justified by the costs being wholly out of proportion to the costs United States EPA considered in establishing the New Facilities requirements codified under Subpart I of the Part 125 Clean Water Act Regulations; or demonstrate that significant adverse impacts on local air quality, significant adverse impacts on local water resources other than impingement or entrainment, or significant adverse impacts on local energy markets warrants an alternative requirement. The

submission must utilize the costs of control technologies had Defendant implemented them during construction and not costs of retrofitting the current structure.

25. Defendant shall comply with all terms and provisions of the expired NPDES Permit No. IL0079812 unless and until such time that the Illinois EPA issues to Defendant a renewed NPDES permit for the Facility; except that the provisions of Special Condition 8 of expired NPDES Permit No. IL0079812 have been deemed inapplicable to Defendant by the Illinois EPA and Defendant shall not be required to comply with Special Condition 8 of expired NPDES Permit No. IL0079812. Upon issuance of a renewed NPDES permit for the Facility, Defendant shall comply with all terms and provisions of that permit.

26. As long as Defendant continues to operate its once-through cooling water intake system which discharges heated effluent into the Chicago River, Defendant shall cooperate fully with the Illinois EPA and take all actions required by the Illinois EPA to provide a full and complete NPDES permit application for purposes of renewing expired NPDES Permit No. IL 0079812. If Defendant obtains the Illinois EPA's approval of a Compliance Plan to convert its Facility to a closed-cycle cooling system via connection to purchased cooling water and/or construction of cooling towers, Defendant may withdraw its pending NPDES permit application and submittal of a Comprehensive Demonstration Study pursuant to Section III.D.17, EcoCAT Consultation pursuant to Section III.D.18, and Verification Monitoring pursuant to Section III.D.10 and 16 of this Consent Order, as each will no longer be required at such time as Defendant ceases all usage of the CWIS. If Defendant obtains the Illinois EPA's approval of a Compliance Plan to convert its Facility to a partially closed-cycle cooling system via connection to purchased cooling water, Defendant may not withdraw its pending NPDES permit application and submittal of a Comprehensive Demonstration Study pursuant to Section III.D.17, EcoCAT Consultation

pursuant to Section III.D.18, and Verification Monitoring pursuant to Section III.D.10 and 16 of this Consent Order, as these will still be required because Defendant will still also be using the CWIS, all of which would be set forth in the Compliance Plan.

27. After receipt of the Comprehensive Demonstration Study pursuant to Section III.D.17 of this Consent Order, the Illinois EPA shall review and either approve or conditionally approve Defendant's CWIS's compliance with the New Facilities requirements codified at 40 C.F.R. § 125.80 *et seq.* or provide written notice of the deficiencies therein.

28. Within forty-five (45) days of receipt of written notice from the Illinois EPA, Defendant shall address any deficiencies in the Comprehensive Demonstration Study the Illinois EPA specifies. But if the deficiencies set forth by Illinois EPA reasonably require more than 45 days to complete the requested task, Defendant may request Modification of the Consent Order pursuant to Section III.G of this Consent Order to request a fair and mutually agreeable deadline by which 401 shall address any such deficiencies in the Comprehensive Demonstration Study the Illinois EPA specifies.

29. Within ninety (90) days after receipt of final approval of the Comprehensive Demonstration Study, Defendant shall submit a revised NPDES permit application to the Illinois EPA and include all documents necessary for a complete permit record.

#### **Illinois EPA Review and Approval Process of Plans, Reports, and Proposals**

30. Defendant shall submit each plan, report, proposal, or other such document required by this Consent Order to the Illinois EPA, copying all individuals identified in Section III.I, whenever such plan, report, proposal, or other such document is required to be submitted for review or approval pursuant to this Consent Order.

a. After review of any plan, report, proposal, or other document that is required

to be submitted pursuant to this Consent Order, the Illinois EPA shall in writing: (i) approve the submission; (ii) approve the submission upon specified conditions; (iii) approve part of the submission and disapprove the remainder; or (iv) disapprove the submission.

- b. Before issuing a response to any submission required under Section III.D of this Consent Order, the Illinois EPA will allow Plaintiff-Intervenors a reasonable time period to review and provide comments on the submission.
- c. If the submission is approved pursuant to Paragraph III.D.30.a.(i), the Defendant shall take all actions required by the proposal, plan, report, or other document, in accordance with the schedules and requirements of the proposal, plan, report, or other document, as approved. If the submission is conditionally approved or approved only in part pursuant to Paragraph III.D.30.a.(ii) or (iii), Defendant shall, upon written direction from the Illinois EPA, take all actions required by the approved proposal, plan, report, or other item that the Illinois EPA determines are technically severable from any disapproved portions.
- d. If the submission is disapproved in whole or in part pursuant to Paragraph III.D.30.a.(iii) or (iv), Defendant shall, within thirty (30) days or such other time as the Illinois EPA agrees in writing, correct all deficiencies and resubmit the proposal, plan, report, or other document, or disapproved portion thereof, for approval, in accordance with the preceding Paragraphs. If the resubmission is approved in whole or in part, Defendant shall proceed in accordance with the preceding Paragraph.

- e. If a resubmitted proposal, plan, report, or other item, or portion thereof, is disapproved in whole or in part, the Illinois EPA may again require Defendant to correct any deficiencies, in accordance with the preceding Paragraphs, or may itself correct any deficiencies.

31. The Illinois EPA, its employees and representatives, and the Attorney General, his employees and representatives, shall have the right of entry into and upon Defendant's Facility which is the subject of this Consent Order, at all reasonable times for the purpose of conducting inspections and evaluating compliance status. In conducting such inspections, the Illinois EPA, its employees and representatives, and the Attorney General, his employees and representatives, may take photographs, samples, and collect information, as they deem necessary.

32. This Consent Order in no way affects the responsibilities of Defendant to comply with any other federal, state, or local laws or regulations, including but not limited to the Act and the Board Regulations.

33. Defendant shall cease and desist from future violations of the Act and Board Regulations that were the subject matter of the Complaint.

**E. Supplemental Environmental Project**

- 1. The Parties to the Consent Order agree that the SEP shall consist of the following:
  - a. A suite of floating and submerged aquatic habitat enhancement structures concentrated on the Main Branch of the Chicago River connecting existing habitat restoration projects on the North Branch at the south end of Goose Island and the South Branch at Ping Tom Memorial Park ("Downtown Habitat Restoration Project"). The Downtown Habitat Restoration Project will be designed to meet an array of habitat requirements for aquatic species.

These measures will increase, improve, and diversify aquatic habitat for fish, macroinvertebrates, mussels, and other wildlife on the Chicago River and shall consist of some combination of the following:

- i. Fish Lunkers, artificial undercut bank structures designed to provide fish with hiding and escape cover.
- ii. Limnetic Curtains composed of steel frames hung vertically with rope which, over time becomes colonized with algae to attract aquatic macroinvertebrates that feed on algae, foraging fish, and even larger predatory fish species.
- iii. Channel Bottom Aggregate consisting of boulder, cobble, gravel, or other coarse aggregate of variable sizes to provide River bottom substrate diversity, which is important to fish and aquatic macroinvertebrates for feeding, cover, and resting for adults and juveniles.
- iv. Bundled log habitat consisting of natural log structures cabled and/or fastened together and weighted to remain an integrated mass. Log habitat can be colonized by a variety of fish, macroinvertebrates, and aquatic algae species.
- v. Log cribs consisting of natural log materials secured in a variety of geometric configurations.
- vi. Turtle logs consisting of the placement of one or more logs floating partially submerged at the water surface.

vii. Submerged shoreline bars consisting of aggregate materials, placed in a sloped formation extending out from existing vertical walls providing habitat for fish foraging, feeding and resting at a variety of elevations. Submerged shoreline bars also provide aquatic mussel bed habitat, and colonization surfaces and niches for aquatic macroinvertebrates, as algae and plant species will likely grow on the stone surfaces.

**2. Project Plan and Implementation**

- a. Within one hundred and twenty (120) days of the date of the entry of this Consent Order, Friends shall submit a written proposal to the Illinois EPA for review and approval, copying all individuals identified in Section III.I of this Consent Order, of one or more aquatic habitat restoration projects on the Main Branch of the Chicago River and adjacent reaches downtown consistent with the Downtown Habitat Restoration Project described in Section III.E.1 of this Consent Order. Friends' proposal shall include, without limitation,
- i. A description of Defendant's contribution of \$3,000,000.00 towards the Downtown Habitat Restoration Project, the payment delivery information, and a certification from Friends that the funding shall not displace any other source of funding for the Downtown Habitat Restoration Project.
  - ii. A schedule for completion of the Downtown Habitat Restoration Project.

iii. An itemized list of projected costs required for completion of the Downtown Habitat Restoration Project.

3. Upon the Illinois EPA's approval of the proposed Downtown Habitat Restoration Project, Friends shall implement the Downtown Habitat Restoration Project in accordance with the approved schedule. The Stipulated Penalty provisions of Section III.B. of this Consent Order shall not apply to actions required of Friends under Section III.E of this Consent Order.

4. Friends shall secure the necessary permits for the projects described in Section III.E.1. of this Consent Order. Friends shall also coordinate with the City of Chicago to finalize location and design parameters and install habitat structures and other habitat enhancements. In the event that Friends is unable to secure any permit necessary for the completion of the approved Downtown Habitat Restoration Project, Friends shall consult with the People and the Illinois EPA and propose one or more alternative projects designed to benefit aquatic life on the Main Branch of the Chicago River and adjacent reaches downtown, following the procedures set forth in Section III.E.2 of this Consent Order.

5. Friends shall complete the Downtown Habitat Restoration Project no later than two years from the date of entry of this Consent Order, unless an extended schedule is otherwise agreed to in writing by the People. Extensions shall be governed by the modification provisions of Section III.G. of this Consent Order, and may be granted for good cause, such as delays caused by third parties beyond Friends' control.

6. Within twenty-one (21) days of the completion of the Downtown Habitat Restoration Project, Friends shall submit a final report to the Illinois EPA, copying all individuals identified in Section III.I of this Consent Order, describing the completed Downtown Habitat Restoration Project ("Final Report"). The Final Report shall include a summary of expenditures

related to the completion of the Downtown Habitat Restoration Project and supporting documentation of those expenditures. Within thirty (30) days of the determination that any approved portion of the Downtown Habitat Restoration Project cannot be completed, Friends shall consult with the People and the Illinois EPA and propose one or more additional projects designed to benefit aquatic life on the Main Branch of the Chicago River, following the procedures set forth in Section III.E.2 of this Consent Order.

7. Friends shall be responsible for coordinating with the City of Chicago, which owns and/or controls the locations at which the Downtown Habitat Restoration Project described above will be implemented, to ensure that the completed Downtown Restoration Project described above is maintained.

8. Beginning ninety (90) days after receiving payment pursuant to Section III.A.2-3 of this Consent Order, Friends shall provide quarterly progress reports describing actions taken to advance the Downtown Habitat Restoration project to the party representatives as listed in Section III.I of this Consent Order and continue such reports every ninety (90) days until the project is completed. The reports shall include an itemized accounting of all expenditures made from the funds allowed for the project pursuant to Section III.A.2-3, including, but not limited to, materials, labor, permit fees, and outside contracts (including subcontracts). Upon completion of the Downtown Habitat Restoration Project any money remaining from the project funding provided in Section III.A.2-3, shall be returned to the People for deposit in the EPTF.

9. By signature on this Consent Order, Defendant certifies that, as of the date of entry of this Order, it is not required to perform or develop the foregoing SEP by any federal, state or local law or regulation, nor is it required to perform or develop the SEP by agreement or injunctive

relief in any other case. Defendant further certifies that it has not received, and is not presently negotiating to receive, credit for the SEP in any other enforcement action.

10. Any public statement, oral or written, in print, film or other media, made by Defendant making reference to any SEP shall include the following language:

“This project was undertaken in connection with the settlement of an enforcement action taken by the Illinois Attorney General, the Illinois EPA, Friends of the Chicago River, and the Sierra Club for alleged violations of the Illinois Environmental Protection Act and regulations promulgated thereunder.”

**F. *Force Majeure***

1. *Force majeure* is defined as an event arising solely beyond the control of Defendant, which prevents the timely performance of any of the requirements of this Consent Order and shall include, but is not limited to, events such as floods, fires, tornadoes, other natural disasters, and labor disputes beyond the reasonable control of Defendant. An increase in costs associated with implementing any requirement of this Consent Order shall not, by itself, excuse Defendant for a failure to comply with such a requirement.

2. When a *force majeure* event occurs which causes or may cause a delay in the performance of any of the requirements of this Consent Order, Defendant shall orally notify the Illinois EPA representative designated in Section III.I of this Consent Order within forty-eight (48) hours of the occurrence. Written notice shall be given to the People’s and Plaintiff-Intervenors’ representatives as listed in Section III.I of this Consent Order as soon as practicable, but no later than ten (10) calendar days after the claimed occurrence. This section shall be of no effect as to the particular event involved if Defendant fails to comply with these notice requirements.

3. Within ten (10) calendar days of receipt of any written *force majeure* notice, the People shall respond in writing regarding Defendant’s claim of a delay or impediment to

performance. If the People agree that the delay or impediment to performance has been or will be caused by circumstances beyond the control of Defendant and that Defendant could not have prevented the delay by the exercise of due diligence, the parties shall stipulate to an extension of the required deadline(s) for all requirement(s) affected by the delay, by a period equivalent to the delay actually caused by such circumstances. Such stipulation may be filed as a modification to this Consent Order. Defendant shall not be liable for stipulated penalties for the period of any such stipulated extension.

4. If the People do not accept the Defendant's claim of a *force majeure* event, Defendant must file a petition with the Court within twenty (20) calendar days of receipt of the People's determination in order to contest the imposition of stipulated penalties. The People shall have twenty (20) calendar days to file its response to said petition. The burden of proof of establishing that a *force majeure* event prevented the timely performance shall be upon the Defendant. If this Court determines that the delay or impediment to performance has been or will be caused by circumstances solely beyond the control of Defendant and that Defendant could not have prevented the delay by the exercise of due diligence, Defendant shall be excused as to that event (including any imposition of stipulated penalties), for all requirements affected by the delay, for a period of time equivalent to the delay or such other period as may be determined by this Court.

#### **G. Enforcement and Modification of Consent Order**

1. This Consent Order is a binding and enforceable order of this Court. This Court shall retain jurisdiction over this matter and shall consider any motion by any party for the purposes of interpreting and enforcing the terms and conditions of this Consent Order. Defendant agrees

that notice of any subsequent proceeding to enforce this Consent Order may be made by mail and waives any requirement of service of process.

2. The Parties to the Consent Order may, by mutual written consent, extend any compliance dates or modify the terms of this Consent Order without leave of this Court. A request for any modification shall be made in writing and submitted to the representatives designated in Section III.I of this Consent Order. Any such request shall be made by separate document, and shall not be submitted within any other report or submittal required by this Consent Order. Any such agreed modification shall be in writing and signed by authorized representatives of each party, for filing and incorporation by reference into this Consent Order.

#### **H. Dispute Resolution**

1. Except as provided herein, the Parties to the Consent Order may seek to informally resolve disputes arising under this Consent Order, including but not limited to the Illinois EPA's decision regarding appropriate or necessary response activity, approval or denial of any report, plan or remediation objective, or the People's rejection of a request for modification or termination of the Consent Order. The People and Plaintiff-Intervenors reserve the right to seek enforcement by the Court where Defendant has failed to satisfy any compliance deadline within this Consent Order. The following are also not subject to the dispute resolution procedures provided by this section: a claim of *force majeure*, a failure to make any required payment and any circumstances posing a substantial danger to the environment or to the public health or welfare of persons.

2. The dispute resolution procedure must be invoked by a party through a written notice describing the nature of the dispute and the party's position with regard to such dispute. The other party shall acknowledge receipt of the notice and schedule a meeting to discuss the dispute informally not later than fourteen (14) calendar days from the receipt of such notice. These

informal negotiations shall be concluded within thirty (30) calendar days from the date of the first meeting between the parties, unless the parties agree, in writing, to shorten or extend this period. The invocation of dispute resolution, in and of itself, shall not excuse compliance with any requirement, obligation or deadline contained herein, and stipulated penalties may be assessed for failure or noncompliance during the period of dispute resolution. As part of the resolution of any dispute, the Parties to the Consent Order, by agreement or by order of this Court, may extend or modify the schedule for completion of work under this Consent Order to account for the delay in the work that occurred as a result of dispute resolution.

3. In the event that the parties are unable to reach agreement during the informal negotiation period, the People shall provide Defendant and Plaintiff-Intervenors with a written summary of its position regarding the dispute. The position advanced by the People shall be considered binding unless, within twenty (20) calendar days of Defendant's and Plaintiff-Intervenors' receipt of the written summary of the People's position, Defendant or Plaintiff-Intervenors files a petition with this Court seeking judicial resolution of the dispute. The People shall respond to the petition by filing the administrative record of the dispute and any argument responsive to the petition within twenty (20) calendar days of service of Defendant's petition. The administrative record of the dispute shall include the written notice of the dispute, any responsive submittals, the People's written summary of its position, Defendant's and/or Plaintiff-Intervenors' petition before the Court and the People's response to the petition. The People's position shall be affirmed unless, based upon the administrative record, it is against the manifest weight of the evidence.

**I. Notice and Submittals**

Except for payments, the submittal of any notice, reports or other documents required under this Consent Order, including all submissions made to the Illinois EPA required under Section III.D, shall be delivered to the following designated representatives:

As to the People

Elizabeth Dubats  
Assistant Attorney General  
Environmental Bureau  
Illinois Attorney General's Office  
69 W. Washington Street, Suite 1800  
Chicago, Illinois 60602

Amanda Kimmel  
Assistant Counsel, Division of Legal Counsel  
Illinois Environmental Protection Agency  
2520 W. Iles Ave.  
P.O. Box 19276  
Springfield, IL 62794-9276

Mark Liska  
Bureau of Water, Permits Section  
Illinois Environmental Protection Agency  
2520 W. Iles Ave.  
P.O. Box 19276  
Springfield, IL 62794-9276  
Phone: (217) 782-0610  
Fax: (217) 782-9891

As to the Plaintiff-Intervenors

Robert A. Weinstock  
375 East Chicago Ave.  
Chicago, IL 60611

Mark N. Templeton  
6020 S. University Ave.  
Chicago, IL 60637

Albert F. Ettinger  
7100 N. Greenview  
Chicago, IL 60626

As to the Defendant

John P. Arranz  
Jessica McMullen  
Swanson, Martin & Bell, LLP  
Direct Line (312) 222-8519  
Fax (312) 321-0990

Alan Garten  
Executive Vice President & Chief Legal Officer  
THE TRUMP ORGANIZATION  
725 5th Avenue, New York, NY 10022  
P (212) 836-3203

Gabriel Constantine  
General Manager  
TRUMP INTERNATIONAL HOTEL & TOWER® CHICAGO-  
401 North Wabash Ave  
Chicago, IL 60611

**J. Release from Liability as to the People’s Second Amended Complaint**

In consideration of Defendant’s payment of a \$1,500,000.00 penalty, its commitment to cease and desist as contained in Section III.D.33 above, its having provided the agreed upon funds to finance performance of the SEP as contained in Section III.E above, and completion of all activities required hereunder, the People release, waive, and discharge Defendant from any further liability or penalties for the violations of the Act and Board Regulations that were the subject matter of the Second Amended Complaint herein. The release set forth above does not extend to any matters other than those expressly specified in the People’s Second Amended Complaint filed on September 18, 2023. The People reserve, and this Consent Order is without prejudice to, all rights of the State of Illinois against Defendant with respect to all other matters, including but not limited to the following:

- a. criminal liability;
- b. liability for future violations;

- c. liability for natural resources damage arising out of the alleged violations; and
- d. Defendant's failure to satisfy the requirements of this Consent Order.

Nothing in this Consent Order is intended as a waiver, discharge, release, or covenant not to sue for any claim or cause of action, administrative or judicial, civil or criminal, past or future, in law or in equity, which the State of Illinois may have against any person, as defined by Section 3.315 of the Act, 415 ILCS 5/3.315, other than Defendant.

**K. Release from Liability as to Plaintiff-Intervenors' Amended Complaint in Intervention**

1. In consideration of Defendant's payment of attorneys' fees and costs in the amount of \$300,000.00, its commitment to cease and desist as contained in Section III.D.33 above, its provision of funds to finance performance of the SEP as contained in Section III.E above, and completion of all activities required hereunder, Plaintiff-Intervenors release, waive, and discharge Defendant from any further liability or injunctive relief in relation to the public nuisance claim that was the subject matter of Count II of the Amended Complaint in Intervention herein. Plaintiff-Intervenors further waive their right to appeal the dismissal of the claims alleged in Counts I and III of their Amended Complaint in Intervention, dismissed on March 20, 2024, in the above-captioned lawsuit, and Plaintiff-Intervenors waive any right to bring those claims in federal court as to the facts alleged in the Amended Complaint in Intervention.

2. Plaintiff-Intervenors further agree to not object, appeal, or otherwise challenge in court or before an administrative body, Defendant's currently pending NPDES Permit No. IL0079812, during or after the Public Comment period. This agreement is limited to the next renewal of the NPDES permit issued September 7, 2012, modified March 15, 2013, and expired on August 31, 2017, and does not extend beyond the expiration of the next-issued NPDES permit to future renewal cycles. This agreement is conditioned upon Defendant's compliance with all

terms of this Consent Order and upon the content of the next version of Permit No. IL0079812 being materially consistent with the technical specifications laid out above in Section III.D of this Consent Order. To the extent that Defendant proposes permit terms that differ materially from those provisions, which may be through Defendant's request for application of the "alternative requirements" provision described above at Section III.D.24, Plaintiff-Intervenors reserve their rights to object to, appeal, or otherwise challenge such a permit.

3. Plaintiff-Intervenors' waivers and releases in this section apply to Sierra Club and Friends as entities; neither organization can bind nor is purporting to bind, the actions of individual people who are, or who claim to be, members of either or both organizations.

4. Also, the Parties acknowledge and agree that specific performance and injunction are the only appropriate remedies as to Plaintiff-Intervenors for any alleged breach of this Consent Order by either Plaintiff-Intervenor, and under no circumstances shall monetary damages be allowed for any breach of this Consent Order by either Plaintiff-Intervenor. In addition, no legal action for specific performance or injunction shall be brought or maintained against either Plaintiff-Intervenor until: (a) the non-breaching Party provides written notice to the alleged breaching Plaintiff-Intervenor which explains with particularity the nature of the claimed breach; and (b) within thirty (30) days after receipt of said notice, the alleged breaching Plaintiff-Intervenor fails to cure the claimed breach or, in the case of a claimed breach which cannot be reasonably remedied within a thirty (30) day period, the alleged breaching Plaintiff-Intervenor fails to commence to cure the claimed breach within such thirty (30) day period, and thereafter diligently completes the activities necessary to remedy the claimed breach.

#### **L. Notice and Public Comment**

After this Consent Order is signed by all the Parties to the Consent Order but prior to entry

by the Court, it shall be posted on the Illinois EPA's website for a period of not less than thirty (30) days for public notice and comment. The People reserve the right to withdraw or withhold its consent prior to entry by the Court if the comments regarding the Consent Order disclose facts or considerations which indicate that the Consent Order is inappropriate, improper, or inadequate. Defendant and Plaintiff-Intervenors consent to the entry of this Consent Order and agree not to withdraw from or oppose the entry of this Consent Order or to challenge any provision of the Consent Order unless the People have notified Defendant and Plaintiff-Intervenors in writing that it withdraws or withholds its consent for the Consent Order. In the event the People notify Defendant and Plaintiff-Intervenors that it withdraws or withholds its consent for the Consent Order, then the terms of the agreement may not be used as evidence in any litigation between those entities.

**M. Termination**

1. Defendant may request that this Consent Order terminate no sooner than the latter of twenty-four (24) months after the Defendant has completed all actions required of the Defendant in the Consent Order, or twenty-four (24) months after the Illinois EPA issues a new final NPDES permit, provided that Defendant has been in continuous compliance with the terms of the Consent Order for the twenty-four (24) months preceding the request. Any such request must be made by notice to the People and Plaintiff-Intervenors at the contacts listed in Section III.I of this Consent order and include a statement that Defendant has completed all actions required by this Consent Order and has been in continuous compliance with the terms of the Consent Order for the twenty-four (24) months preceding the request and the following certification by a responsible corporate official of Defendant:

I certify under penalty of law that this statement was prepared under my direction or supervision, and that the information submitted in or

accompanying this statement of final compliance is to the best of my knowledge true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and or imprisonment for knowing violations.

2. The People shall notify Defendant and Plaintiff-Intervenors of its decision on the request within forty-five (45) calendar days of the People's receipt of the request. If the People agree to terminate this Consent Order, the People, Plaintiff-Intervenors, and Defendant shall jointly file a notice with the Court that the Consent Order is terminated. If the People do not agree to terminate this Consent Order, the People shall provide Defendant and Plaintiff-Intervenors written notification stating the reasons why this Consent Order should not be terminated and Defendant may then invoke the Dispute Resolution provisions. The Consent Order shall remain in effect pending resolution of any dispute by the parties or the Court concerning whether Defendant has completed its obligations under this Consent Order and is in compliance with the terms of the Consent Order. The provisions of Sections III.D.33 (Cease and Desist) and III.J and K (Release from Liability) of this Consent Order shall survive and shall not be subject to and are not affected by the termination of any other provision of this Consent Order.

**N. Execution and Entry of Consent Order**

This Order shall become effective only when executed by all Parties to the Consent Order and the Court. This Order may be executed by the parties in one or more counterparts, all of which taken together shall constitute one and the same instrument. The undersigned representatives for each party certify that they are fully authorized by the party whom they represent to enter into the terms and conditions of this Consent Order and to legally bind them to it.

[The remainder of this page has been intentionally left blank.]

WHEREFORE, the parties, by their representatives, enter into this Consent Order and submit it to this Court that it may be approved and entered.

AGREED:

FOR THE PEOPLE:

PEOPLE OF THE STATE OF ILLINOIS  
*ex rel.* KWAME RAOUL, Attorney General  
of the State of Illinois

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

JAMES JENNINGS, Acting Director  
Illinois Environmental Protection Agency

BY: Matthew J. Dunn  
MATTHEW J. DUNN, Chief  
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DATE: 5/14/2025

PLAINTIFF-INTERVENORS

DATE: 05/20/2025

SIERRA CLUB

BY: Albert Stumpo

DEFENDANT 401 NORTH WABASH  
VENTURE, LLC D/B/A TRUMP  
INTERNATIONAL HOTEL & TOWER

FRIENDS OF THE CHICAGO RIVER,  
BY: Albert Stumpo

BY: \_\_\_\_\_  
ALAN GARTEN  
Executive Vice President and Chief Legal  
Officer

DATE: May 13, 2025

DATE: \_\_\_\_\_

ENTERED:

\_\_\_\_\_  
JUDGE

DATE: \_\_\_\_\_

WHEREFORE, the parties, by their representatives, enter into this Consent Order and submit it to this Court that it may be approved and entered.

AGREED:

FOR THE PEOPLE:

PEOPLE OF THE STATE OF ILLINOIS  
*ex rel.* KWAME RAOUL, Attorney General  
of the State of Illinois

ILLINOIS ENVIRONMENTAL  
PROTECTION AGENCY

JAMES JENNINGS, Acting Director  
Illinois Environmental Protection Agency

BY: \_\_\_\_\_  
MATTHEW J. DUNN, Chief  
Environmental Enforcement/  
Asbestos Litigation Division

BY: \_\_\_\_\_  
ANDREW ARMSTRONG  
Chief Legal Counsel

DATE: \_\_\_\_\_

PLAINTIFF-INTERVENORS

DATE: \_\_\_\_\_

SIERRA CLUB

BY: \_\_\_\_\_

DEFENDANT 401 NORTH WABASH  
VENTURE, LLC D/B/A TRUMP  
INTERNATIONAL HOTEL & TOWER

FRIENDS OF THE CHICAGO RIVER,

BY: \_\_\_\_\_

BY:  \_\_\_\_\_  
ALAN GARTEN  
Executive Vice President and Chief Legal  
Officer

DATE: \_\_\_\_\_

DATE: 5/15/25

ENTERED:

\_\_\_\_\_  
JUDGE

DATE: \_\_\_\_\_

**IN THE CIRCUIT COURT OF COOK COUNTY, ILLINOIS  
COUNTY DEPARTMENT, CHANCERY DIVISION**

PEOPLE OF THE STATE OF ILLINOIS, )  
*ex rel.* KWAME RAOUL, Attorney )  
General of the State Illinois, )  
 )  
Plaintiff, )  
 )  
and )  
 )  
SIERRA CLUB and FRIENDS OF THE )  
CHICAGO RIVER, )  
 )  
Plaintiff-Intervenors, )  
 )  
v. )  
 )  
401 NORTH WABASH VENTURE, LLC, )  
d/b/a TRUMP INTERNATIONAL )  
HOTEL & TOWER, a Delaware )  
Limited Liability Company, )  
 )  
Defendant. )

Case No. 18 CH 10229

**CONSENT ORDER**

Appendix A  
Revised Impingement and Entrainment Study Plan



# Revised Impingement and Entrainment Study Plan for 401 North Wabash

**Katten**

KattenMuchinRosenman LLP

**Katten Muchin Rosenman LLP**

**401 North Wabash  
Project No. 101935**

**11/28/2018**

# **Revised Impingement and Entrainment Study Plan for 401 North Wabash**

prepared for

**Katten Muchin Rosenman LLP  
401 North Wabash  
Chicago, Illinois**

**Project No. 101935**

**11/28/2018**

prepared by

**Burns & McDonnell Engineering Company, Inc.  
Chicago, Illinois**

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## TABLE OF CONTENTS

### EXECUTIVE SUMMARY

	<u>Page No.</u>
<b>1.0 INTRODUCTION .....</b>	<b>1-1</b>
1.1 Objectives and Scope .....	1-2
1.2 Study Plan Organization .....	1-3
 <b>2.0 FACILITY DESCRIPTION .....</b>	 <b>2-1</b>
 <b>3.0 PROPOSED AND/OR IMPLEMENTED TECHNOLOGIES .....</b>	 <b>3-1</b>
 <b>4.0 HISTORICAL STUDIES .....</b>	 <b>4-1</b>
4.1 Source Water Physical Data and Flow Information .....	4-1
4.2 Source Waterbody Baseline Biological Characterization Data .....	4-2
 <b>5.0 PUBLIC PARTICIPATION OR CONSULTATION WITH FEDERAL OR STATE AGENCIES .....</b>	 <b>5-1</b>
 <b>6.0 SAMPLING PLAN .....</b>	 <b>6-1</b>
6.1 Impingement Sampling .....	6-1
6.2 Entrainment Sampling .....	6-3
6.2.1 Laboratory Methods .....	6-4
6.3 Operational and Water Quality Data .....	6-4
6.4 Data Management .....	6-4
6.5 Data Analysis and Reporting .....	6-5
6.6 Health and Safety .....	6-6
6.7 Quality Assurance and Quality Control .....	6-7
6.7.1 Field Procedures .....	6-7
6.7.2 Laboratory Procedures .....	6-8
6.7.3 Data Analysis Procedures .....	6-8
6.7.4 Reporting Procedures .....	6-8
 <b>7.0 REFERENCES .....</b>	 <b>7-1</b>

**LIST OF TABLES**

	<b><u>Page No.</u></b>
Table 1-1: Document Organization .....	1-3
Table 3-1: Preliminary List of Available Intake Technologies and Operational Measures.....	3-1
Table 4-1: Fish Species Collected in the Chicago River (IDNR 2009).....	4-2

**LIST OF FIGURES**

**Page No.**

Figure 2-1: Study Area..... 2-2

**LIST OF ABBREVIATIONS**

<b><u>Abbreviation</u></b>	<b><u>Term/Phrase/Name</u></b>
§	Section
401 Building	401 North Wabash
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CRCW	Chicago River Controlling Works
CWIS	cooling water intake structures
EA	EA Engineering, Science, and Technology, Inc., PBC
EcoCAT	Ecological Compliance Assessment Tool
EPA	U.S. Environmental Protection Agency
IDNR	Illinois Department of Natural Resources
IPaC	Information for Planning and Consultation
m <sup>3</sup>	cubic meters
MWRD	Metropolitan Water Reclamation District
NPDES	National Pollutant Discharge Elimination System
QA	quality assurance
QC	quality control
SOP	standard operating procedures
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey

## 1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) issued the Phase I new facility rule (40 CFR part 125, Subpart I) to establish location, design, construction, and capacity standards for cooling water intake structures at new facilities under Section (§) 316(b) of the Clean Water Act. The Phase I § 316(b) rule establishes a two-track compliance approach in § 125.84 for regulating cooling water intake structures (CWIS) at new facilities. The permittee can choose which track it will follow. Based on intake volume, Track I establishes national intake flow and velocity requirements as well as location and capacity-based requirements. Track II allows permit applicants to conduct site-specific studies to demonstrate to the permitting authority (in this case, Illinois EPA) that alternatives to the Track I requirements will reduce the level of adverse environmental impact from the CWIS to a level of reduction comparable to the level the facility would achieve at the CWIS if it met the Track I flow (i.e., commensurate with closed-cycle cooling) and through-screen velocity (i.e., 0.5 feet per second) requirements (§ 125.84(b)(1) and § 125.84(b)(2), respectively).

Under Track II, facilities can perform and submit the results of a Comprehensive Demonstration Study characterizing the source water baseline operation of the CWIS, and to confirm the technologies proposed and/or implemented achieve the reduction of impacts to all fish and shellfish comparable to Track I. To meet the comparable level requirement, the results of the Comprehensive Demonstration Study are used to evaluate whether the impingement mortality and entrainment of all life stages of fish and shellfish are comparable to a level that would be achieved through Track I, or the demonstration may also include consideration of impacts other than impingement mortality and entrainment, such that measures taken will maintain the fish and shellfish in the waterbody at a substantially similar level to what would be achieved through Track I.

Pursuant to § 125.90(b) for existing facilities, Illinois EPA issued the National Pollutant Discharge Elimination System (NPDES) Permit Number IL0079812 on September 7, 2012 authorizing the discharge of non-contact cooling water, unused river water, strainer backwash, and storm water runoff from the heating, ventilation, and air conditioning system from 401 North Wabash (401 Building) to the Chicago River. A modification to that permit was issued on March 15, 2013 to allow for a revised average flow up to 19.7 MGD. Illinois EPA issued public notice on the proposed renewal NPDES permit on January 11, 2018, requiring an evaluation of the potential impacts of CWIS operations pursuant to 40 CFR § 125.90(b), again pursuant to § 125.90(b) for existing facilities.

On July 17, 2018, representatives from Illinois EPA, the 401 Building team, Katten Muchin Rosenman LLP, E. Cooney Associates, Inc., and Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) met to discuss the Agency's June 28, 2018 Violation Notice, which in part included an assessment of § 316 (b) of the Clean Water Act. Illinois EPA determined that the 401 Building must comply as a new facility despite continuous operation since 2008 and the previous NPDES permits issued to the 401 Building under § 125.90(b) for existing facilities since 2012.

The 401 Building was designed and built to use a once-through cooling system as a sustainable strategy which provides significant energy savings relative to the closed-cycle alternative. Based on the property uses as a hotel, residential living area, commercial establishments, and banquet and meeting facilities; its cooling system design and operation; its location on the Chicago River; and existing structural limitations, such as the bulkhead design and limited building footprint, the 401 Building will follow a Track II evaluation approach.

## 1.1 Objectives and Scope

This Proposal for How Information will be Collected, referred to herein as the Impingement and Entrainment Study Plan, provides the information required under § 125.86(c)(2)(iii) in support of the Track II Comprehensive Demonstration Study being conducted for 401 North Wabash. The following provides these requirements:

- A description of the proposed technologies to be evaluated;
- A list and description of any historical studies characterizing the physical and biological conditions in the vicinity of the proposed or actual intakes and their relevancy to the proposed study;
- A summary of any public participation or consultation with Federal or State agencies undertaken in development of the plan; and
- A sampling plan for data that will be collected in actual field studies in the source waterbody that documents all methods and quality assurance procedures for data collection, sampling, and analysis.

The information generated from these data and information collection efforts will address the Source Water Biology Study reporting requirements described in § 125.86(c)(2)(iv)(A) which include:

1. Taxonomic identification of all life stages of fish, shellfish, and protected species in the vicinity of the CWIS and susceptible to impingement and entrainment;

2. Characterization of these species and life stages in terms of their abundance and their spatial and temporal distribution, sufficient to characterize the annual, seasonal, and diel variations in impingement mortality and entrainment; and
3. Documentation of current impingement mortality and entrainment of these species and life stages.

Under Track II, the field sampling plan (§ 125.86(c)(2)(iii)(D)) would typically include fish and shellfish sampling within the source waterbody (i.e., Chicago River) in order to estimate the potential fish and shellfish species susceptible to impingement and entrainment because the rule was written for facilities that were not yet constructed. Regarding the existing 401 Building, rather than simply estimating species susceptible to impingement and entrainment, the 401 Building plans to conduct a 1-year impingement and entrainment study at the CWIS to determine species actually being impinged and/or entrained. The results of this study will form the baseline, existing condition and the existing source water baseline biological and physical data identified under Section 4.0 will be used to supplement the findings of this study. Results of this Source Water Biology Study will be used in the evaluation of potential cooling water intake structure effects at § 125.86(c)(2)(iv)(B).

## 1.2 Study Plan Organization

The elements contained in this Impingement and Entrainment Study Plan address and are organized relative to the required components of a Track II Comprehensive Demonstration Study. Table 1-1 shows the organization of this plan and the chapter which provides the requested information.

**Table 1-1: Document Organization**

<b>Section</b>	<b>Regulatory Requirement<sup>1</sup></b>	<b>Chapter Title</b>
Chapter 2	-	Facility Description
Chapter 3	§ 125.86(c)(2)(iii)(A)	Proposed and/or Implemented Technologies
Chapter 4	§ 125.86(c)(2)(iii)(B)	Historical Studies
Chapter 5	§ 125.86(c)(2)(iii)(C)	Public Participation or Consultation with Federal or State Agencies
Chapter 6	§ 125.86(c)(2)(iii)(D)	Sampling Plan
Chapter 7	-	References

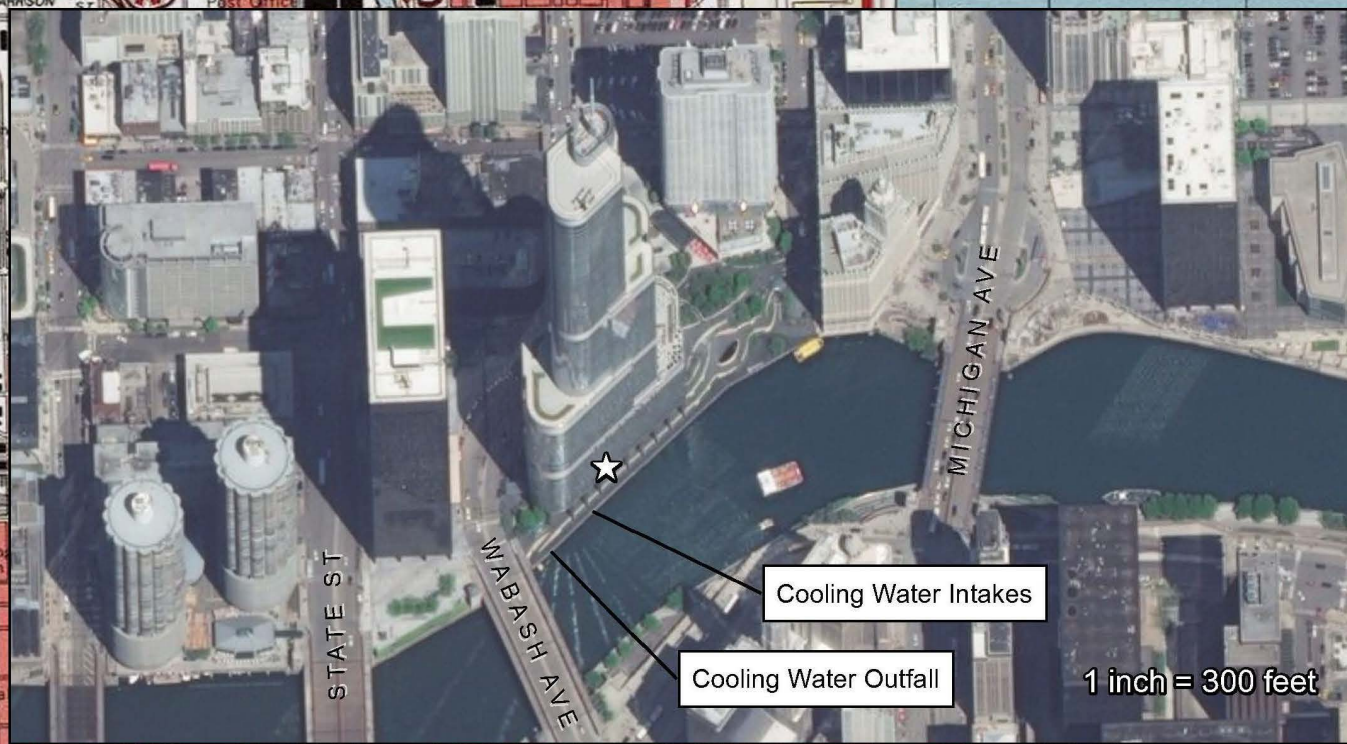
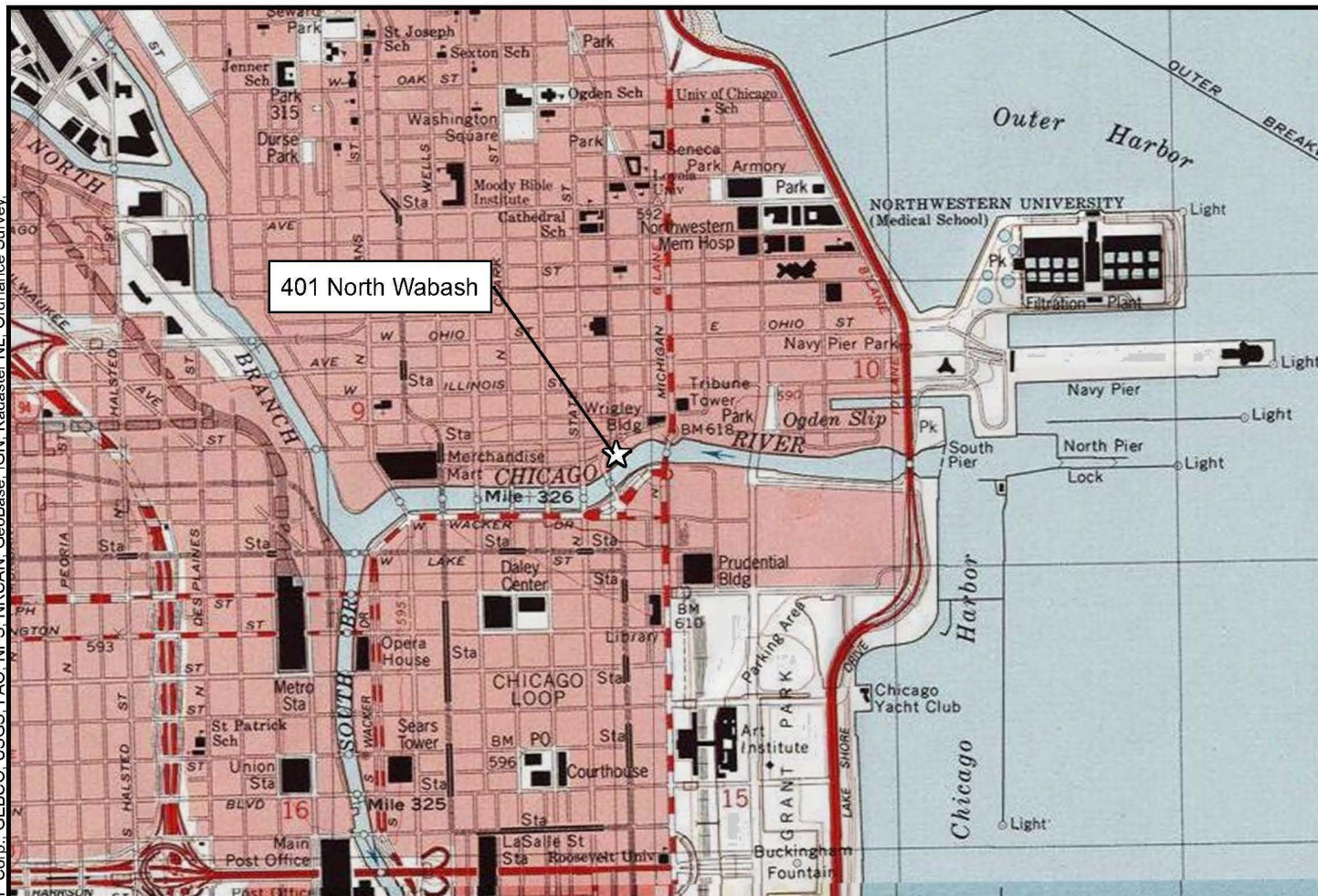
## 2.0 FACILITY DESCRIPTION

The 401 Building is a 92-story building with spaces for residents, offices, retail, and parking. The building is located on the north bank of the Chicago River on the site of the former Chicago Sun-Times Building (Figure 2-1). The 401 Building operates two CWIS and uses a once-through cooling water system using the Chicago River as the source and receiver of cooling water. The 401 Building was designed and built to use a once-through cooling system for sustainability purposes, primarily to reduce energy use and river water consumption.

The CWIS consists of two cooling water intake lines, two traveling water screens, and two vertical turbine pumps. One intake line was constructed with the 401 Building and the other was existing from the previous Chicago Sun-Times Building. The intake lines are flush with 4.5-foot square openings in the sheet pile bulkhead along the Chicago River, several feet below normal surface water elevation. The Chicago River is approximately 20 feet deep at this location. A removable steel intake grate, installed inside the bulkhead framing, minimizes fish and river debris from entering the chamber and cooling water system. Additional detail regarding the dimensions of the steel intake grates will be investigated as part of this Comprehensive Demonstration Study.

The CWIS supplies water through reinforced concrete intake chambers running perpendicular to the river, connecting to the cooling water system. Cooling water collects within two, 6.0-foot wide by 19.1-foot deep river intake wells within the facility. Each intake well contains a traveling screen consisting of 304 stainless steel rotating wire screen cloth (#12 W&M gauge) with 3/8-inch square openings. Traveling screens are washed with spray nozzles to remove debris from the traveling screens into collection baskets. The CWIS consists of two vertical turbine pumps with variable-frequency drives, each with a capacity of 7,500 gallons per minute. The cooling water system, designed to operate 24 hours per day, year-round, consists of four centrifugal chillers that are used in the heating, ventilation, and air conditioning system. River water is pumped through the chillers and then back to the river through a 24-inch discharge pipe, Outfall 001, at 41°53'18.0" North, 87°37'36.4" West. A second outfall, Outfall 002 at 41°53'19.6" North, 87°37'34.1" West, is limited to stormwater runoff.

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☆ 401 North Wabash

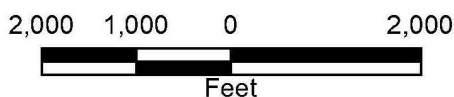


Figure 2-1  
Study Area  
401 North Wabash  
Chicago, Illinois

### 3.0 PROPOSED AND/OR IMPLEMENTED TECHNOLOGIES

This Chapter provides the following requirements at § 125.86(c)(2)(iii)(A) in support of the Track II Comprehensive Demonstration Study:

- A description of the proposed and/or implemented technologies to be evaluated

Because the 401 Building exists as a once-through cooling facility, any modifications to the cooling water system will be a retrofit. If a site-specific evaluation of technologies is necessary, based on the results of the Source Water Biological Study, it will be conducted using a 2-step process (screening and detailed analysis) to evaluate feasible technologies or operational measures to reduce impingement and entrainment at the 401 Building.

First, a list of potential technologies and operational measures that might be employed to reduce entrainment at the CWIS will be prepared. Table 3-1 provides a preliminary list of available intake technologies and operational measures that have demonstrated efficacy to reduce impingement, impingement mortality and entrainment. These are the proposed technologies to be evaluated as part of a screening level study.

**Table 3-1: Preliminary List of Available Intake Technologies and Operational Measures**

Classification	Alternative
Physical Barrier	Aquatic Filter Barrier (Gunderboom®)
	Barrier nets
	Louvers/angled bar racks
	Vertical and inclined screens
	Wedge-wire screens (cylindrical or slant)
Diversion, Collection, and Conveyance Technologies	Eicher modular inclined screens
	Fine mesh screens on modified traveling screens (through-flow or dual-flow)
	Geiger Multi-Disc screen
	Hydrolox® traveling screens
	Modified Ristroph traveling screens
	Upgraded fish return system
Behavioral Barrier	Air bubble curtain
	Strobe lights
	Sound (Infra and Ultrasound)
	Velocity cap

Classification	Alternative
Operational Change	Closed Cycle Cooling (Natural and Mechanical Draft Cooling Towers, Dry Cooling Towers, Hybrid)
	Variable Frequency Drives/Variable Speed Pumps
	Reduced Operation of Circulating Water Pumps
	Motor-Operated Valves
Other	Expanded/New Intake
	Alternate water sources (process water, wastewater, groundwater)

Each technology or operational measure will be screened against the following criteria:

1. Commercially proven technology
2. Conformance to site conditions and space availability
3. Impact on station reliability, operation, and efficiency
4. Efficacy (effectiveness in reducing IM and entrainment)
5. Relative cost
6. Environmental impacts (air, noise, water quality, water consumption, and permitting requirements)

A matrix of the impingement and entrainment alternatives evaluated against the criteria with recommendations for alternatives to be evaluated in more detail will be prepared.

The most promising impingement and entrainment reduction alternatives identified as part of the screening evaluation will be evaluated in further detail. Technical feasibility of each technology will be assessed based on many factors and site-specific concerns at the 401 Building including potential site constraints such as land and space availability, impacts on current and future residents, physical space in the CWIS and Chicago River, approach and through-screen velocities, biological effectiveness, hydrodynamics, debris loading, biofouling, sedimentation, icing and navigation impediments. Biological effectiveness (i.e., efficacy) will be based on the results of the impingement and entrainment study and case studies performed at other sites.

Compliance costs will be estimated for each technically feasible technology evaluated. Compliance costs will be estimated as after-tax and will include the capital, operation and maintenance costs, and administrative and permitting costs. Capital and operating costs will be presented both as the annualized value and net present value over a 20-year life cycle. Capital cost estimates will be Association for the Advancement of Cost Engineering Cost Estimate Level 4 with an expected accuracy range of -30/+50 percent. The cost estimate to convert the once-through cooling system to a closed cycle recirculating system will be developed based on a parametric model using previous projects and vendor quotes as reference. Major design parameters representing the application at the 401 Building will be utilized to

adjust cost factors based on established cost relationships and functions. The cost scale factors will be applied to all major equipment and major discipline-specific activities to adjust cost groups based on site-specific design parameters. For the other technologies such as fine mesh screen screens, site-specific screen and flow specifications will be used to solicit vendor quotes for the major equipment and using data from previous projects for the installation and balance of building modifications. Indirect and other costs will be determined based on recent similar projects. Conceptual sketches will be prepared to show the layout and approximate location of the potential impingement and entrainment reduction technology. Construction costs for the installation will be estimated using a proprietary Burns & McDonnell database. Compliance costs will include:

- Capital and operation
- Additional facility modifications necessary to support construction and operation of technologies including relocation of existing buildings or equipment, reinforcement or upgrading of existing equipment, and additional construction and operating permits
- The building's administrative costs including costs of permit application

## 4.0 HISTORICAL STUDIES

This Chapter provides the information required under § 125.86(c)(2)(iii)(B), descriptions of historical studies characterizing the physical and biological conditions within the vicinity of the 401 Building. The following provides a brief introduction to the physical and biological conditions within the vicinity of the 401 Building and identifies some of the historical studies and datasets that will be evaluated as part of the Comprehensive Demonstration Study and will also be used to support the other Track II information requirements for Source Water Physical Data (§ 122.21(r)(2)), Source Water Baseline Biological Characterization Data (§ 122.21(r)(4)), Source Waterbody Flow Information (§ 125.86(c)(1)).

### 4.1 Source Water Physical Data and Flow Information

The 401 Building is located on the 1.5-mile long Main Branch of the Chicago River, approximately 0.6 miles from the confluence of the North Branch and South Branch Chicago River. The Main Branch Chicago River receives discretionary flow from Lake Michigan in the summer (May through October) to maintain or improve water quality in the Main Branch Chicago River as well as South Branch Chicago River and the Chicago Sanitary and Ship Canal. Flow from Lake Michigan to the river is regulated by the U.S. Army Corps of Engineers (USACE) at the Chicago River Controlling Works (CRCW) and to a small degree from Metropolitan Water Reclamation District (MWRD) operation of the Chicago Harbor Lock. Water typically flows from the CRCW through the Main Branch to the South Branch, which also receives flow from the North Branch. However, density currents sometimes carry flow from the North Branch 'upstream' through the Main Branch (Jackson et al. 2008). Flow from the Main Branch Chicago River through the South Branch Chicago River is controlled by the Lockport Powerhouse and Controlling Works near Joliet, Illinois. Flow from Lake Michigan to the Chicago River during the winter months is typically small and stems primarily from lockage of boats from the harbor, and leakage through the sluice gates, lock gates, and sea walls at the CRCW. The water surface elevation in the Main Branch Chicago River is kept nearly constant during most of the year at approximately 2 feet below the water surface elevation of Lake Michigan, except during periods of excessive precipitation and/or runoff.

The 401 Building will leverage existing source water physical information describing the hydrologic and geomorphologic features of the source waterbody (i.e., Chicago River) including areal dimensions using aerial imagery, and river depths from as-built engineering drawings, bathymetric surveys, or other available sources. Pertinent water temperature and other water quality parameter data from recent history will be obtained from sources such as the MWRD, Chicago Wilderness, Friends of the Chicago River, and EPA. River flow data will be obtained from sources such as the U.S. Geological Survey (USGS) National Water Information System (Station # 05536123, Chicago River at Columbus Drive) and the

USACE and analyzed to characterize river hydrology. The 401 Building will obtain and analyze relevant data from the USGS, USACE, and other relevant sources to characterize river hydrology and will use the CWIS flow data to determine the proportion of the Chicago River withdrawn.

## 4.2 Source Waterbody Baseline Biological Characterization Data

The biological community in the Main Branch Chicago River has been routinely monitored by the MWRD for approximately 40 years and by others including the Illinois Department of Natural Resources (IDNR). While improvements in the quality of the aquatic communities present within the Chicago River have been documented since monitoring began, fish assemblages are characteristic of a highly modified waterbody within an urbanized watershed. Recent fisheries studies conducted by IDNR (IDNR 2009) as part of a statewide stream monitoring program identified a fish community represented primarily by 16 common species (Table 4-1) in the Chicago River mainstem, including the Main, North, and South Branches. The most abundant species present within the Chicago River during the IDNR survey included gizzard shad (*Dorosoma cepedianum*), common carp (*Cyprinus carpio*), pumpkinseed (*Lepomis gibbosus*), largemouth bass (*Micropterus salmoides*), and bluegill (*Lepomis macrochirus*).

**Table 4-1: Fish Species Collected in the Chicago River (IDNR 2009)**

Common Name	Scientific Name
Gizzard shad	<i>Dorosoma cepedianum</i>
Goldfish	<i>Carassius auratus</i>
Common Carp	<i>Cyprinus carpio</i>
Golden Shiner	<i>Notemigonus crysoleucas</i>
Spotfin shiner	<i>Cyprinella spiloptera</i>
Bluntnose minnow	<i>Pimephales notatus</i>
Emerald shiner	<i>Notropis atherinoides</i>
Spottail shiner	<i>Notropis hudsonius</i>
Yellow bullhead	<i>Ameiurus natalis</i>
White bass	<i>Morone chrysops</i>
White perch	<i>Morone americana</i>
Largemouth bass	<i>Micropterus salmoides</i>
Green sunfish	<i>Lepomis cyanellus</i>
Bluegill	<i>Lepomis macrochirus</i>
Pumpkinseed	<i>Lepomis gibbosus</i>
Round goby	<i>Negobius melanostomus</i>

Modified species list from Illinois Department of Natural Resources: *Fish Surveys in the Lake Michigan Basin 1996-2006: Chicago and Calumet River Sub-basins*

Fisheries data from the MWRD, IDNR, and others as available will be used to characterize the aquatic communities of fish and shellfish occurring in the Chicago River in the vicinity of the 401 Building CWIS. The information provided will be representative of existing conditions in the source waterbody, and thus, appropriate for characterizing the fish and shellfish populations potentially affected by operation of the 401 Building CWIS.

The following provides a description of some of the available aquatic studies conducted within the Main Branch Chicago River:

- *Ambient Water Quality Monitoring in the Chicago, Calumet, and Des Plaines River Systems: A Summary of Biological, Habitat, and Sediment Quality During 2010* (MWRD 2014)
- *Ambient Water Quality Monitoring in the Chicago, Calumet, and Des Plaines River Systems: A Summary of Biological, Habitat, and Sediment Quality During 2006* (MWRD 2009)
- *Fish Surveys in the Lake Michigan Basin 1996-2006: Chicago and Calumet River Sub-basins* (IDNR 2009)
- *A Study of the Fisheries Resources and Water Quality in the Chicago Waterway System 1974 Through 1996* (MWRD 1998)

A summary of each available study will include the sampling methods and relative abundance, as available. A detailed review of available studies will focus on recent studies whereas other studies will be considered to identify potential trends in the quality and/or composition of aquatic communities.

## **5.0 PUBLIC PARTICIPATION OR CONSULTATION WITH FEDERAL OR STATE AGENCIES**

This Chapter provides the information required under § 125.86(c)(2)(iii)(C), public participation or consultation with Federal or State agencies in development of the plan to conduct the Comprehensive Demonstration Study for the 401 Building. No formal public participation has been undertaken in preparation of this plan or planned for undertaking this study. Consultation with Federal and State agencies will include the required assessment of potential adverse impacts to threatened and endangered species under § 7 of the Endangered Species Act as well as under 17 Illinois Administrative Code Part 1075 and 1080 in compliance with the Illinois Endangered Species Protection Act.

A preliminary review of natural heritage databases revealed that no Federal threatened or endangered aquatic species are known to occur within the vicinity of the 401 Building. A documented evaluation of protected species potentially occurring in the vicinity of the CWIS will be provided with respect to their historic and present distributions, habitat use, availability of potentially suitable habitats near the CWIS, and potential susceptibility of these species to impingement and entrainment. Key sources of information on Federal and State threatened and endangered species and species of concern in the river will include: the USFWS's Threatened and Endangered Species System and Information for Planning and Consultation (IPaC), and IDNR Ecological Compliance Assessment Tool (EcoCAT); and peer-reviewed scientific literature. The 401 Building will provide available information for public participation or Agency consultation regarding our § 316(b) findings, as appropriate in the Comprehensive Demonstration Study Report.

## 6.0 SAMPLING PLAN

This Sampling Plan, as required under § 125.86(c)(2)(iii)(D), describes the methods and quality assurance procedures for collecting and analyzing the impingement and entrainment data proposed as part of the Comprehensive Demonstration Study for the 401 Building. The results of this study will provide data on the rates of impingement and entrainment and will form the baseline impingement and entrainment occurring at the 401 Building on which to measure reductions from implementing an impingement mortality or entrainment reduction technology.

The Sampling Plan approach was designed to capture the temporal/spatial characteristics, abundance, and species in the Chicago River most susceptible to impingement and entrainment. The results of the impingement and entrainment sampling will be characterized relative to the annual, seasonal, and diel variations in impingement and entrainment under periods of representative pumping rates and operational flows.

### 6.1 Impingement Sampling

The general procedure for impingement monitoring is to collect the debris (including all fish and shellfish) in the wash water from both traveling screens under representative pumping rates. Collections will be made twice per month for 12 months, from November 2018 through October 2019. Sampling events will typically occur during the second and fourth week of each month but may be adjusted if necessary. For each sampling event, two samples will be collected, one every 6 hours, during a 24-hour period. Samples will be collected corresponding to dawn, day, dusk, and night (e.g. approximately 0600, 1200, 1800, and 0100, respectively) to account for potential diel variations of fish species susceptible to impingement. Sampling events will be selected from Monday through Friday workdays and adjusted if necessary because of holidays, forced outages, flood conditions, short-term overwhelming debris loads, etc. If a regularly scheduled sampling event must be skipped, the event can be rescheduled for the following week or first available appropriate sampling opportunity.

Immediately prior to each sample collection, the traveling screens will be operated through one complete cycle to remove previously accumulated debris, fish, and shellfish. During the 24-hour collection period, the traveling screens will be operated normally. Screen wash debris will be collected in a debris collection basket placed in the screen wash water discharge trough downstream of the traveling screens. The collection basket will be made from material with  $\frac{3}{8}$ -inch mesh. This mesh size was selected to match the mesh size of the traveling screen, which is  $\frac{3}{8}$ -inch. Using a mesh smaller than  $\frac{3}{8}$  inch is not necessary

because organisms that would be retained by a mesh size less than  $\frac{3}{8}$  inch would pass through the traveling screens and would not be collected in the screen wash debris.

During periods of high debris or ice conditions, the collection basket will be checked as often as necessary to remove impinged fish, shellfish, and debris or ice to prevent clogging. At the end of the sampling event, the screens will be operated through one complete cycle and the collection device will be removed and the fish and shellfish will be sorted from the debris.

Each fish will be identified to species and counted. Up to 100 individuals of each species will be measured for length and mass. Fish not measured individually will be counted and then weighed as a group by species. All crews will be trained to readily identify endangered and threatened fish and shellfish in the field. If an endangered or threatened species is collected alive, data on that individual organism will be collected and the fish or shellfish will be returned to the water. The appropriate state agencies will be notified of the collection of dead or alive endangered or threatened species.

Fish collected during impingement sampling that are determined to have been dead before being impinged will be weighed and measured; however, these fish will not be included when calculating impingement rates. Fish will be considered dead prior to impingement if they exhibit cloudy eyes, pale gill filaments, emaciation, and/or extensive fungal growth. In the rare occurrence that partial or dismembered fish that do not exhibit these characteristics are recovered in the debris basket, heads will be matched with tails to prevent over counting, or only heads will be counted. Fish considered to be dead upon impingement will be counted and used to calculate numerical impingement (total and by species), however, they will not be used in biomass calculations. Because of the difficulty of characterizing impinged fish as moribund (dying) versus healthy before impingement but damaged by impingement, a designation of dead or alive (not moribund) upon impingement will be given to each fish. The condition of the fish that were presumably alive when impinged will be noted.

Shellfish (i.e., freshwater mussels) are benthic dwelling organisms and their impingement is considered incidental. However, all collected mussels will be identified and counted during each sampling event. Those specimens that cannot be readily identified in the field will be preserved and returned to the laboratory for identification. Condition of the mussels will be noted upon collection. Mussels will be considered dead before impingement if the internal organs are bloated, decomposed, or if the shell is empty.

Voucher specimens for each species of fish and shellfish collected over the course of the monitoring study will be recorded using digital photographs except for those individuals that may not be discernable from

photographs which will be retained and preserved in four percent formaldehyde. Photo vouchers will be taken of threatened and endangered species. Questionable voucher specimens will be verified by an expert taxonomist.

## 6.2 Entrainment Sampling

Entrainment sampling will be conducted at the 401 Building from February through October 2019, which is inclusive of the period identified as the primary period of reproduction, larval recruitment and peak abundance (March through June) in the NPDES permit for a nearby facility on the Chicago River.

Entrainment samples will be collected twice per month during this period and will typically occur during the second and fourth week of each month but may be adjusted as necessary. Each sample collection event will be conducted over a 24-hour period with samples collected every 6 hours for a total of 4 samples per event. Samples will be collected corresponding to dawn, day, dusk, and night (e.g. approximately 0600, 1200, 1800, and 0100, respectively) to account for potential diel variations of ichthyoplankton susceptible to entrainment across the sampling period. Entrainment samples will be collected within the 401 Building either from the river intake well at approximately mid-depth using a diaphragm pump or from a tap on an unfiltered river water supply line (if available). A sample volume of at least 100 cubic meters ( $m^3$ ) will be filtered and collected using an in-line flow meter, conical plankton net, and barrel sampler. Sample collection duration is anticipated between 1 and 3 hours, depending on the flow rate (a flow rate of approximately 1  $m^3$  per minute will be targeted). The plankton net will have a mesh size of approximately 300 micrometers unless performance issues (i.e., clogging due to debris) warrant a larger mesh (no larger than 500 micrometers).

After the appropriate time has elapsed to obtain the desired volume, the plankton net will be washed down from the outside-in, into the cod-end. The cod-end will then be removed, and the contents will be carefully washed into a labeled sample container. Samples will be preserved in 5 percent buffered formaldehyde. Entrainment sampling will be documented in the field on a standardized field data collection form. Entrainment sample information to be recorded on the field data collection form are:

- Sample collection location
- Sampling event start and end date
- Sampling event start and end time
- Flow meter start and end volume ( $m^3$ )
- Water quality observations and measurements
- Sample identification (ID) number

### **6.2.1 Laboratory Methods**

Preserved entrainment samples will be processed and analyzed by laboratory technicians and taxonomists at EA Engineering, Science, and Technology, Inc. PBC (EA). Samples will be processed and analyzed according to EA's standard operating procedures (SOP). Fish eggs and larvae will be manually sorted from the sample, enumerated, and identified to lowest taxon practical. Ichthyoplankton will be enumerated into the following life stages: eggs, yolk-sac larvae, post yolk-sac larvae, and juveniles. If large amounts of entrained organisms are present in the sample, sub-sampling will be performed using a plankton splitter to proportion the sample into equal aliquots for sorting. The total length will be measured to the nearest 0.1 millimeter for up to 30 individuals per sampling event of each ichthyoplankton life stage. Any juvenile fish entrained will be measured to the nearest 0.1 mm. Deepest body depth will also be measured on these individuals to the same precision. If greater than 30 individuals of each ichthyoplankton life stage are present in a sample, a random selection of 30 individuals will be measured. Laboratory quality control inspections will be performed for sorting, identification, life-stage determination, and enumeration, as identified in EA's QA/QC plan and SOP.

### **6.3 Operational and Water Quality Data**

Cooling water intake rate, water temperature, and dissolved oxygen for the sample period will be recorded for each impingement and entrainment sampling event. At the end of each sampling event, the total volume of water that passed through the traveling screens and the average inlet temperature during the 24-hour sampling event will be determined from 401 Building operating data. In addition, dissolved oxygen concentration in the Chicago River near the intake will be measured after each sample is collected. Prior to each sampling event, pre-operational water quality meter system checks will be made, and each parameter calibrated following manufacturer's instructions. To provide additional context to the impingement and entrainment results, daily average Chicago River flow and water surface elevation will be obtained from the USGS river gaging station #05536123, Chicago River at Columbus Drive.

### **6.4 Data Management**

All field generated data, finalized laboratory results, and sample QA/QC data will be stored in a secure Microsoft Excel workbook. Limited access to the data will be controlled at the server level. The dataset, after QA/QC review, will support the generation of report deliverables using analyses completed with verified Excel formulas, pivot tables, and/or statistical software.

## 6.5 Data Analysis and Reporting

Impingement and entrainment data analyses will be conducted using data on all fish and shellfish collected. The impingement data will be evaluated based on annual, seasonal, and diel variations and analyzed for the following parameters:

- species composition using the lowest taxon practical
- total numerical impingement mortality
- numerical impingement by most common species
- total biomass impingement mortality
- length distribution of impinged fish

For entrainment, individual counts of eggs and larvae will be converted to densities based on actual sample duration and operational flow rate. Densities will be normalized to number of individuals per 100 m<sup>3</sup>. Annual and monthly entrainment estimates will be calculated using entrainment densities and intake flows. Entrainment for periods between sampling events will be estimated by extrapolating the rates over the entire survey period based on the flow volumes measured on those days. The estimates of each survey period will then be combined to provide estimates for an entire year. Tables and figures showing entrainment abundances by taxon/life stage will be prepared so that annual, seasonal, and diel variations in entrainment can be characterized. The relative abundance and other relevant statistics (e.g. count, minimum/maximum length, average, and standard deviation) of each taxon/life stage will be calculated, reported, and displayed graphically, where appropriate.

## 6.6 Health and Safety

A field Pre-Task Analysis Health & Safety Checklist will be prepared before the first sampling event and will apply to all subsequent sampling events. The checklist will be modified as necessary should changes in personnel or contact information change over the course of the sampling. The checklist will include at a minimum:

1. Location and date(s) of fieldwork
2. Brief description of the job/task to be completed
3. List of Burns & McDonnell personnel to be onsite and emergency contact information
4. Hazard analysis
5. List of Personal Protective Equipment
6. Emergency facility directions and route maps

All of 401 Building's applicable onsite safety requirements will be followed. In the event that the 401 Building or Burns & McDonnell concludes that conditions at the site would make impingement or entrainment sampling unsafe, sampling will be stopped and the Illinois EPA will be notified of the schedule change if appropriate.

## 6.7 Quality Assurance and Quality Control

Burns & McDonnell uses a quality assurance program for all projects that is tailored to the type, quantity, and quality of data needed to achieve project goals. Quality assurance (QA) activities include integrated management and technical practices used throughout the project life cycle to verify project-specific data quality objectives are met. Quality assurance activities for this project include senior technical review of project deliverables, verifying quality control activities are being conducted, evaluating adherence to project schedule and field and reporting procedures, and implementing corrective actions if necessary.

Quality control (QC) activities are conducted to verify that the collected data meet the quality objectives for the project. Data quality objectives are defined by accuracy, representativeness, comparability, and completeness. Quality control activities for this project will be implemented so that data generated for this project are appropriate for addressing § 316(b) compliance objectives.

A quality assurance and quality control program will be implemented for the field and laboratory components of the Impingement and Entrainment Characterization Study and include adherence to standard practices, training, pre-printed data forms, and laboratory quality control procedures.

### 6.7.1 Field Procedures

The field procedures QA/QC program will consist of standard practices, training, and pre-printed data forms and sample labels. Burns & McDonnell uses a standard operating protocol for all impingement and entrainment sampling projects to enhance the consistency with which samples and data are collected in the field.

All personnel conducting the field sampling will receive onsite training by a senior Burns & McDonnell scientist with prior experience conducting impingement and entrainment sampling. To enhance the completeness, all field collected data will be recorded on project-specific, pre-printed data forms. Similarly, external and internal labels for sample jars will be used that require only the addition of sampling event-specific information.

The following quality assurance/quality control procedures will be implemented for impingement monitoring:

- Voucher specimens for each species collected will be recorded in digital photographs. If taxonomic identification of a species comes into question, the voucher specimen can be retained, preserved, and submitted to an outside expert for verification.
- Photo vouchers will be taken of threatened and endangered species. If the organism is alive it will be returned to the river.

- All field collected data will be recorded on site-specific data sheets designed to maximize the possibility that all required data is collected.
- Raw data in the electronic database will be 100 percent proofed against the original data sheets to assure accurate transcription.

### **6.7.2 Laboratory Procedures**

The entrainment samples will be processed by EA in accordance with their SOP and QA/QC procedures. EA implements quality control measures over the sorting, taxonomic, and data transfer portions of its laboratory operations. All sample sorters undergo a training and certification process in which they must achieve and maintain a high degree of sorting efficiency. For this project, each certified sorter will have approximately 10 percent of their samples reviewed by the laboratory manager or a qualified designee. The sample residuals will be examined, any missed target organisms removed and counted, and a calculation made based on the number of organisms missed divided by the total number of organisms in the sample (missed plus previously removed). To remain certified, each sorter must maintain a 90 percent sorting efficiency or higher.

EA will maintain a reference collection consisting of up to 5 specimens of each taxa and life stage present in the samples. The entire reference collection will be verified by a second, in-house taxonomist. Outside taxonomic experts will be consulted on problematic species.

Prior to entering data into an electronic database, all laboratory bench sheets will be checked for completeness and accuracy. All data entered into the electronic database will be verified against original bench sheets by a second person.

### **6.7.3 Data Analysis Procedures**

All data will be transcribed, stored, and analyzed using Microsoft Excel. Data transcribed from field forms will be reviewed 100 percent for accuracy by a person other than the original data entry person. Similarly, the analyses and formulas used in the worksheets will be reviewed for accuracy and correctness by a qualified second party.

### **6.7.4 Reporting Procedures**

The draft report will undergo an internal review by a technical discipline expert, a document preparation expert, and a Burns & McDonnell quality review manager. The review process will be documented with Burns & McDonnell's quality review tracking system. Once the internal reviews have been completed

and all comments have been addressed, the report will be transmitted to the client for their review and comment.

## 7.0 REFERENCES

- Illinois Department of Natural Resources (IDNR). 2009. Fish Surveys in the Lake Michigan Basin 1996-2006: Chicago and Calumet River Sub-basins. S. M. Pescitelli and R. C. Rung. Region Watershed Program. Plano, Illinois.
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