

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

UNITED STATES OF AMERICA,
STATE OF ILLINOIS,

Plaintiffs,

NATURAL RESOURCES DEFENSE
COUNCIL, INC., et al.,

Plaintiff-Intervenors,

v.

METROPOLITAN WATER
RECLAMATION DISTRICT OF
GREATER CHICAGO,

Defendant.

Civil Action No. 1:11-cv-08859

Hon. George M. Marovich

ATTACHMENT 1

RESPONSIVENESS SUMMARY

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INTRODUCTION

On December 14, 2011, the United States of America lodged a Consent Decree with the United States District Court for the Northern District of Illinois in Civil Action No. 1:11-cv-08859, to resolve claims by the United States and the State of Illinois (the State) against the Defendant, the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC or MWRD), for alleged violations of Section 301 of the Clean Water Act (CWA), 33 U.S.C. § 1311, analogous State laws and the terms and conditions of three of MWRD's National Pollutant Discharge Elimination System permits (the NPDES Permits). On December 22, 2011, the Department of Justice published a notice of lodging of the proposed Consent Decree in the *Federal Register*, and invited the public to submit comments on the settlement for a period of 30 days. (76 Fed. Reg. 79,710 (December 22, 2011)). On January 3, 2012, some citizen groups requested a 60 day extension of the public comment period. The Department of Justice granted the request and extended the comment period until March 21, 2012. (77 Fed. Reg. 2319 (January 17, 2012)).

The United States received ten sets of comments pursuant to the *Federal Register* notices. This Responsiveness Summary sets forth the United States' responses to the comments.

FORMAT OF THE RESPONSIVENESS SUMMARY

Full copies of the comments are set forth in Exhibits 7-1 through 7-10.¹ The United States organized the comments by topic (as depicted in the topic headings), consolidated the text of similar comments, and summarized them in italics, referencing the individual comments by the name of the commenter and page number as applicable. The United States' responses to the comments then follow and appear in regular font. Although the proposed Consent Decree is still proposed at this time, for brevity it is sometimes referred to simply as the Consent Decree in this Responsiveness Summary.

FACTUAL BACKGROUND

I. The Proposed Consent Decree in *U.S. and Illinois v. MWRD*

The proposed Consent Decree between the United States, the State of Illinois and MWRD would resolve claims relating to combined sewer overflows (CSOs) from MWRD's CSO outfalls, by putting MWRD on an enforceable schedule to complete construction of its CSO long term control plan (LTCP) known as the tunnel and reservoir plan (TARP).

¹ With one exception, the exhibits to the public comments are not included with the Exhibits to this Responsiveness Summary, but are available upon request.

The Consent Decree also would require the following: (1) a comprehensive plan to control floatables in area waterways; (2) post construction monitoring to determine compliance following completion of TARP; (3) a wide ranging green infrastructure program; and (4) payment of a civil penalty of \$675,000, of which \$350,000 will go to the United States and \$325,000 to the State of Illinois. The green infrastructure program will require MWRD to: (1) complete green infrastructure projects that provide a minimum of 10 million gallons of design retention capacity for precipitation in an individual storm; (2) implement additional green infrastructure measures in the event MWRD's invocation of the contingency provisions of the Consent Decree is accepted thereby extending the schedule for implementing TARP; (3) implement a comprehensive land use policy for MWRD-owned land that will, *inter alia*, provide for certain incentives for private lessees and requirements for public lessees to implement green infrastructure measures on such land; and (4) distribute 15,000 rain barrels. The United States Environmental Protection Agency (EPA) has estimated the cost of implementing the green infrastructure program to be between \$25 million and \$50 million.

While the factual background in this case is distinguishable from other CSO settlements, the CWA requirements remain the same. Part of the backdrop is that in terms of overall storage capacity for combined sewer flows, TARP is the largest LTCP in the country and therefore has a longer overall completion timeline than other smaller LTCPs compared by commenters. Further, construction of MWRD's LTCP, TARP, was well underway when EPA issued the CSO Control Policy in 1994, which provided guidance for communities with combined sewer systems to develop CSO LTCPs. In contrast, most other CSO settlements have resulted from negotiations that started before the communities began developing or constructing their LTCPs. Nonetheless, all CSO communities are required to come into compliance with the CSO-related requirements of the CWA.

II. MWRD's Wastewater Conveyance and Treatment System

MWRD is a municipal authority that operates a wastewater conveyance and treatment system, including water reclamation plants (WRPs) that serve an area of approximately 883 square miles, consisting of the City of Chicago and 128 surrounding municipalities. (Consent Decree 1, Dkt. No. 3-1). Within that service area, the three largest of those WRPs, the Calumet, North Side and Stickney WRPs, receive flows from combined sewer collection systems in the MWRD 350 square mile combined sewer service area that consists of Chicago and 51 suburbs in Cook County, Illinois. (Consent Decree 1; Consent Decree App. A, Description of TARP, at 2, Dkt. No. 3-2).

Combined sewer systems are designed to collect stormwater runoff, domestic sewage and industrial wastewater in the same pipe and transport it to a sewage treatment plant, where it is treated and then discharged to a water body. Nationally, combined sewer systems serve roughly 772 communities containing about 40 million people.² During dry weather, local municipalities (satellites) within MWRD's service area convey wastewater including sanitary sewage through local sewer systems to MWRD interceptors, which transport the wastewater to the WRPs for treatment. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. For this reason, combined sewer systems are designed to overflow occasionally, through combined sewer overflows or CSOs, and discharge excess flows directly to nearby water bodies.³

In the past, excess combined sewer flows discharged through CSO outfalls, owned by a satellite community or MWRD, into Chicago area water bodies before the combined sewer flows reached a WRP. As described below, the partially completed TARP currently captures and temporarily stores, prior to treatment, large volumes of the combined sewer flows that otherwise would have discharged as CSOs.

Under the CWA, the mechanism to regulate wastewater treatment is through National Pollutant Discharge Elimination System (NPDES) permits that regulate discharges from the WRPs and the sewer systems. (33 U.S.C. § 1342). MWRD holds NPDES Permits for the Calumet, North Side and Stickney WRPs issued by the Illinois Environmental Protection Agency (IEPA) pursuant to Section 402 of the CWA, 33 U.S.C. § 1342, and 35 Ill. Adm. Code §§ 309.101 *et seq.*⁴ MWRD's NPDES Permits authorize discharges from MWRD's CSO outfalls, subject to certain conditions. (See Ex. 8, MWRD Calumet WRP, North Side WRP and Stickney WRP 2002 NPDES Permits (NPDES Permits), at Special Condition ("S.C.") 10, for each permit.) MWRD has 37 CSO outfalls authorized to discharge to water bodies in the Chicago area by MWRD's currently effective Calumet, North Side and Stickney NPDES Permits.⁵ (*Id.*). Most of the 52 satellite communities have individual NPDES permits authorizing discharges from over 300 CSO outfalls to water bodies (canals, channels, creeks or rivers) in the Chicago area.⁶ None of the CSO outfalls are located on or discharge directly to Lake Michigan.⁷

² See, <http://cfpub.epa.gov/npdes/cso/demo.cfm>

³ See, http://cfpub.epa.gov/npdes/home.cfm?program_id=5

⁴ IEPA issued MWRD's current NPDES Permits for the Calumet, North Side and Stickney WRPs in 2002.

Although those permits expired by their own terms in 2007, they remain in full force and effect in accordance with Illinois law, codified at 5 ILCS 100/10-65(b), until IEPA issues new permits. Unless otherwise noted, "NPDES Permits" refers to MWRD's 2002 Calumet, North Side and Stickney WRP NPDES Permits.

⁵ The new proposed permits issued for public notice in 2009 for MWRD's Calumet (at S.C. 13), North Side (at S.C. 8) and Stickney (at S.C. 13) WRPs identify 33 CSO outfalls authorized to discharge subject to specified conditions and are available at <http://www.epa.state.il.us/public-notices/2009/npdes-notices.html>

⁶ See, IEPA website map and list of NPDES permits in Illinois, available at <http://www.epa.state.il.us/water/permits/waste-water/npdes-statewide.pdf>

⁷ As discussed below in more detail, water bodies that some CSOs discharge to have backflowed to Lake Michigan on average one time per year. See http://www.mwrdr.org/irj/go/km/docs/documents/MWRD/internet/protecting_the_environment/combined_sewer_overflows/pdf/Reversals.pdf

The Complaint filed by the United States and the State (the Governments) alleges that MWRD failed to meet three permit conditions pertaining to combined sewer discharges. (Complaint, Dkt. No. 1, ¶¶ 48-69). As discussed below, the Consent Decree addresses the violations alleged in the Complaint. (Consent Decree 4).

III. MWRD's CSO Long Term Control Plan

A. TARP Current Status

MWRD's Tunnel and Reservoir Plan or TARP, the centerpiece of the Consent Decree, is MWRD's long term control plan to address CSO discharges, and is also, in part, a United States Army Corps of Engineers (Corps) flood control project authorized by Congress. TARP is designed to capture and store combined sewer flows that otherwise would become CSOs, in tunnels and reservoirs until they can be pumped to existing treatment plants for full secondary treatment prior to discharge to Chicago area waterways. (Consent Decree App. A, at 2). Currently, when the TARP tunnels reach capacity, excess flows then discharge through the CSO outfalls to a channel, canal, river or creek in the Chicago area waterways. TARP currently includes 109 miles of tunnels in four separate systems, each with tunnels leading to, when completed, one of three terminal reservoirs. The four TARP tunnel systems are referred to as the Upper Des Plaines, the Mainstream, the Lower Des Plaines and the Calumet TARP Systems.

When completed, TARP will have a total storage capacity of approximately 17.5 billion gallons, with 8.3 billion gallons of that storage capacity scheduled to be in operation by 2017. The tunnel systems of TARP are currently in operation. The total design storage capacity for the four tunnel systems that are completed and operating is 2.3 billion gallons. (Consent Decree 2). The Upper Des Plaines TARP System, with a reservoir that has a 350 million gallon storage capacity, was completed in 1998. (*Id.* at 3).

The Consent Decree includes enforceable schedules to complete the remaining TARP reservoirs, the Thornton Composite Reservoir and the McCook Reservoir. Both reservoir sites are currently being mined for limestone⁸ to create the rough hole, essentially a quarry, within which to construct the reservoir. The Thornton Composite Reservoir is scheduled to be placed in operation by December 31, 2015, with a design storage capacity of 4.8 billion gallons for combined sewer flows. (*Id.* at ¶¶ 16, 16(d)). The rough hole for Thornton Composite Reservoir is more than 94 percent mined.

⁸ Also referred to as dolomitic limestone or dolomite.

The figure below is a map showing the locations of the TARP tunnels and reservoirs. (Consent Decree App. A, Figure 3).

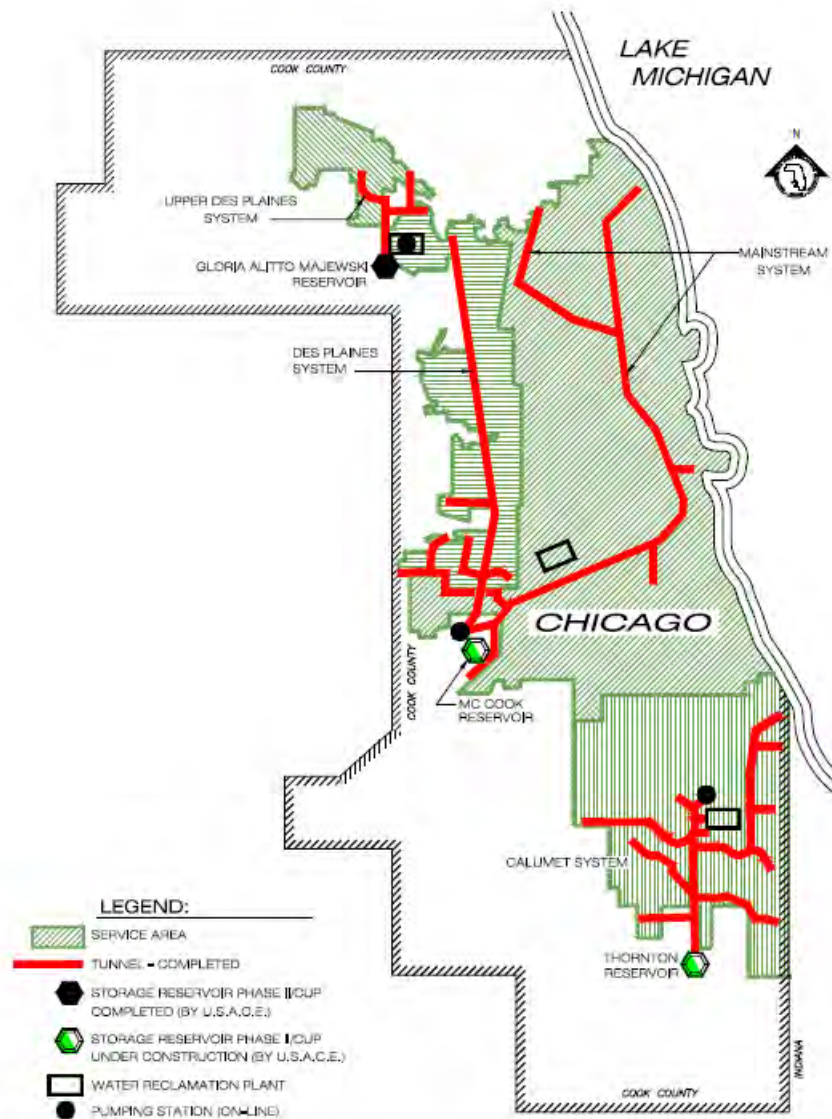


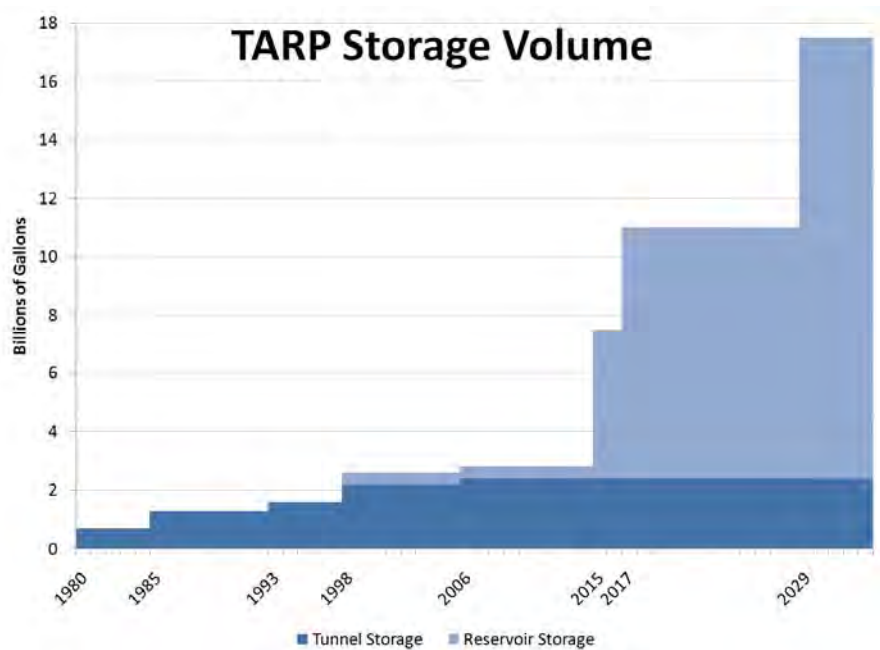
Figure 3: Tunnel and Reservoir Plan Project Status

The McCook Reservoir will consist of two stages. The Consent Decree provides for Stage 1 to be completed by December 31, 2017,⁹ with a design storage capacity of 3.5 billion gallons for combined sewer flows. The rough hole for Stage 1 of the McCook Reservoir was 50 percent mined as of the end of 2012 and upon completion will be fully operational while work continues

⁹ As explained below, the Consent Decree allows for the possibility of schedule extensions under limited and specific conditions.

on Stage 2. (Ex. 3, Padilla Decl. ¶¶ 11, 34). Under the Consent Decree, Stage 2 of the McCook Reservoir is scheduled to be completed by December 31, 2029, with a design storage capacity of 6.5 billion gallons.

As shown in the graph below, by 2017, MWRD will have added 8.3 billion gallons storage capacity to TARP, for a total storage capacity of approximately 11 billion gallons, more than quadrupling the current storage capacity of approximately 2.65 billion gallons.¹⁰



Over \$3 billion has been spent on TARP thus far since the mid-1970s (\$1.4 billion by MWRD and the remainder obtained through the EPA Construction Grants Program and the Corps). In 2012 dollars, MWRD estimates the total amount spent as \$9.8 billion, with \$4.3 billion of that from MWRD. Completion of construction of the Thornton Composite and McCook Reservoirs is expected to cost an additional \$350 million.¹¹

¹⁰ The current capacity includes the Calumet, Mainstream/Lower Des Plaines tunnels and the Upper Des Plaines TARP system. (See Consent Decree App. A, at 3, 4, 5, 11).

¹¹ This is MWRD's best estimate of costs to complete TARP as of May 2013. An estimate of \$355 million based on MWRD's 2010 TARP Status Report did not include unpaid costs for construction currently under contract.

B. TARP Development and Implementation History

The following history of TARP provides the backdrop for events and determinations leading up to the Consent Decree and is included here in response to the commenters' references to the development and history of TARP in their comments. However, the Consent Decree is a prospective agreement intended to ensure that MWRD completes the injunctive relief in the Consent Decree and achieves compliance with the CWA.

1. Study of Alternatives and Selection of TARP

TARP, one of the largest public works projects in the country, was initiated in the early 1970s. In 1972, after studying many alternatives, the Flood Control Coordinating Committee (comprised of representatives of the State of Illinois, Cook County, Chicago and MWRD), adopted the *Development of a Flood and Pollution Control Plan for the Chicagoland Area – the Chicago Underflow Plan* (CUP), to create a regional solution to the flooding and water quality problems caused by CSOs in the Chicago area. (Consent Decree App. A, at 1). Although sometimes referred to as the Chicagoland Underflow Plan, the project is generally known as TARP. The various 23 alternatives were evaluated by computer models based on a 21-year sequence of hourly precipitation. (Ex. 9, Flood Control Coordinating Committee, *Development of a Flood and Pollution Control Plan for the Chicagoland Area, The Chicago Underflow Plan*, Dec. 1972, at 5, 8).¹²

2. Initial EPA, Corps and Congressional Review of TARP

In 1973 and 1974, U.S. Senate and House of Representatives Public Works Committees' resolutions directed the Corps to complete a study to investigate and determine the appropriate federal interest in supporting project functions such as water pollution control, flood control and other purposes in connection with the TARP plan to control CSOs and other urban flood problems in Cook County. (See, e.g., Ex. 10, S. Comm. on Public Works, 93rd Cong., Legislative Calendar, Final Calendar 147 (1974) (resolution adopted March 12, 1973)). In July 1975, EPA confirmed that it would partially fund tunnels and pump stations for TARP but would not participate in funding for the reservoirs of TARP. (Ex. 11, EPA Memorandum at 1, July 1975). MWRD began construction on the tunnel portions of TARP in 1975 and completed all tunnels by 2006.¹³ The reservoir portion is not yet completed, with the completion schedule for the last two reservoirs set forth in the Consent Decree.

¹² Due to the voluminous size of the reports pertaining to TARP, only relevant pages excerpted from the reports are included as exhibits. Full copies of the reports are available upon request.

¹³ This does not include the short tunnel sections connecting the applicable tunnel system to the coinciding reservoir, which are being constructed in conjunction with the reservoirs' construction.

The normal Corps procedure leading to implementation of a Corps water development project authorized by Congress when the Corps was evaluating the flood control aspects of TARP was the following:

- Corps staff produced an initial feasibility report that was reviewed by the Corps Division Engineer. Upon completion of review, the Division Engineer issued a public notice to interested parties, with opportunity to comment, that the report would be considered by the Board of Engineers in Washington, D.C.
- Following action by the Board of Engineers, the Board's report was forwarded to the Chief of Engineers who forwarded his or her report, the Board's report, the feasibility report and final environmental impact statement to the Governor of the affected state and to interested federal agencies for a 90-day review and comment period.
- Following the state and agency review, and after review and approval by the Office of Management and Budget, the final report of the Chief of Engineers was forwarded by the Secretary of the Army to Congress.
- Authorization of the project was then considered by Congress. This procedure included hearings by the appropriate Congressional committees. If Congress appropriated the necessary funds, advance engineering and design studies were initiated.

(Ex. 12, Corps, *The Chicago Underflow Plan, Final Phase I General Design Memorandum, Feasibility Report and Environmental Assessment* (Feasibility Report), at 141-42, Dec. 1986). This general procedure remains in place today. (Ex. 3, Padilla Decl. ¶ 15).¹⁴

In 1976, the Corps completed a feasibility study (*The Chicagoland Underflow Plan – Urban Water Damage Study*) of the federal interest in TARP. As a result, the Corps Chief of Engineers recommended that the reservoirs be constructed under the Corps' flood control program. (Ex. 13, Corps, *Chicagoland Underflow Plan, McCook Reservoir, Special Re-Evaluation Report* (SRR), Oct. 1996, at SRR-8). In the 1976 Water Resources Development Act (WRDA), Congress authorized preparation of a general design memorandum of the Chicagoland Underflow Plan (the Corps components of TARP) for flood control and other purposes. (Ex. 14, Corps, *Chicagoland Underflow Plan, McCook Reservoir, Special Re-Evaluation Report and Final Environmental Impact Statement* (SRR and FEIS), Feb. 1999, at Exec-5).

At the request of Senator Charles Percy, the General Accounting Office¹⁵ (GAO) conducted a study in 1979 to consider whether TARP was cost effective in view of its high construction

¹⁴ The Governments have consulted with Michael Padilla, an engineer and Senior Project Manager at the Army Corps of Engineers, whose declaration is included as Exhibit 3 to the Responsiveness Summary. Mr. Padilla has been associated with the Corps in various capacities since 1989. (Ex. 3, Padilla Decl. ¶ 3). From 1996 to 1999, Mr. Padilla worked on projects relating to the Chicagoland Underflow Plan, also known as TARP, and since 2010 has been the Project Manager of the McCook Reservoir Project for the Corps. (*Id.* at ¶¶ 6, 7).

¹⁵ The name was later changed to the Government Accountability Office.

costs. (Ex. 12, Corps, Feasibility Report, Dec. 1986, at 8). Among other things, the GAO report recommended that the Corps undertake a study of the flood control portion of TARP, including evaluation of less costly alternatives, which the Corps subsequently conducted. (*Id.*).

3. Completion of Some TARP Tunnels; Changes to Reservoir Plans

In 1980, MWRD completed and placed in operation the Upper Des Plaines TARP tunnel system. (Consent Decree 2; Consent Decree App. A, at 3). Portions of both the Mainstream and Calumet tunnel systems were completed and placed in operation in 1985 and 1986, respectively. (Consent Decree 2; Consent Decree App. A, at 4, 10).

After preliminary design documents had been prepared, reviewed and revised, in 1986, Corps studies recommended implementation of three terminal reservoirs and associated tunnels, control and pump facilities and determined that additional elements in the plan were economically infeasible under applicable federal standards.¹⁶ (Ex. 13, Corps SRR, Oct. 1996, at SRR-8). In December 1986, the Corps completed a feasibility report and environmental assessment, which documented engineering, economic and environmental analyses of alternative measures to reduce flood damages in the TARP systems. (Ex. 12, Corps Feasibility Report, Dec. 1986). The Corps Feasibility Report recommended federal participation in the construction of two reservoirs in the TARP system in addition to the O'Hare Reservoir - one reservoir in the existing McCook quarry, owned and operated by Vulcan Materials Company (Vulcan), and the other in the Thornton quarry. (*Id.* at 3).

In 1988, EPA conducted a special evaluation project to analyze the constructed portions of TARP. (Ex. 4, Aistars Decl. ¶ 6.) The stated purpose of the special evaluation project was to evaluate the construction and operational data of the completed parts of TARP, including effects on ground water quality. (*Id.*).

4. Congress Authorizes Federal Funding for Portions of TARP, But Issues Raised Regarding Use of Vulcan's McCook Quarry for Reservoir

In 1988, Congress authorized federal funding for the McCook Reservoir project in WRDA. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-6). After Congress authorized the project, Vulcan expressed concern that using its quarry as a reservoir would adversely impact its future operations and ability to continue mining limestone at its McCook quarry, which contained an estimated over 600 million tons of marketable stone at that time. (*Id.* at Exec-6, SRR-112; Ex. 15, Vulcan, TARP Project, Presentation to MWRD by White, October 13, 1994). Public demand for crushed stone in the Chicago region comes from construction projects for roads, driveways,

¹⁶ During this time, planning also continued on the O'Hare Reservoir with issuance of the Corps *Final Feasibility Report and Environmental Assessment O'Hare System Interim Report*, April 1984. (Ex. 3, Padilla Decl. ¶ 18 n.3).

parking lots, concrete foundations, concrete masonry walls, concrete flooring, ditch erosion protection, shoreline erosion protection and spillway construction. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at B-46).

In 1990, Congress directed the Corps to reevaluate the project with regard to potential impacts on Vulcan's operation of its McCook quarry and the loss of a valuable resource. (*Id.* at Exec-6). The conference report stated the following:

The conference agreement includes \$750,000 for the initiation of planning, engineering and design of the McCook and Thornton Reservoirs, which are features of the Chicagoland Underflow Plan [TARP]. The conferees are aware that the site of the McCook Reservoir is an active quarry that has many years of remaining life. The conferees are concerned about the loss of that valuable resource and, therefore, agree that no funds will be appropriated for construction of McCook Reservoir until the Corps of Engineers submits to the Congress a complete economic reevaluation of the project that includes an analysis of the remaining life and value of the quarry and a thorough examination of alternative sites for the reservoir. While the reevaluation is underway, the conferees direct the Corps to continue planning, engineering and design of McCook and Thornton Reservoirs.

(Ex. 13, Corps, SRR, Oct. 1996, at SRR-2). As directed by Congress, the Corps continued planning, engineering and design of the McCook and Thornton Reservoirs and in addition, published its reevaluation in the October 1996 Special Re-Evaluation Report. (*Id.*).

Between 1990 and 1994, several proposals regarding where to build the planned reservoir were considered but not ultimately adopted. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-6). Given the needs for a large size reservoir with at least 10 billion gallons storage capacity in the general vicinity of McCook, Illinois, to serve as a terminal reservoir for the Mainstream/Lower Des Plaines tunnels, sites available to accommodate the reservoir were limited. While the re-evaluation was underway, the design work for the McCook Reservoir was still ongoing and in 1994, the Corps issued a design report regarding a negotiated plan between MWRD and Vulcan that called for constructing the McCook Reservoir in two stages on land owned at the time by Vulcan and on another parcel owned by General Motors. (Ex. 16, Corps, *Chicagoland Underflow Plan, McCook Reservoir, Illinois Design Memorandum*, Aug. 1994, at 3).

5. Opposition to Use of Vulcan's McCook Quarry for McCook Reservoir

In 1994, local residents, a citizens group and local politicians, including the U.S. Congressional Representative ("Representative") for that district, opposed the size and location of the reservoir in the "negotiated plan" for the McCook Reservoir. (Ex. 17, Steve Neal, *Water Plan Smells Bad to Lipinski*, Chicago Sun-Times, July 27, 1994, at 31; Ex. 18, *Don't Rush the Deep Hole Project*,

Chicago Tribune, August 31, 1994).¹⁷ Local newspapers reported that opposition from the local Representative, a member of the U.S. House of Representatives Public Works Committee, presented a potential threat to the federal spending upon which MWRD and the Corps relied to build the reservoir. (Ex. 17, *Water Plan Smells Bad to Lipinski*, Chicago Sun-Times, July 27, 1994). Subsequently, the MWRD Board of Commissioners voted against that plan and began negotiating with Vulcan on siting the reservoir at another location. (Ex. 19, MWRD Letter to Corps, Oct. 21, 1994; Ex. 20, Stevenson Swanson, *McCook Reservoir Vote Stalled*, Chicago Tribune, September 2, 1994; Ex. 21, *Reservoir Plan on the Ropes*, Chicago Sun-Times, October 14, 1994; Ex. 22, Stevenson Swanson, *Water District Selects Smaller Reservoir Plan*, Chicago Tribune, October 21, 1994; Ex. 23, Sharon Cotliar, *McCook Reservoir Plan Defeated*, Chicago Sun-Times, October 21, 1994, at 10; Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-6). After voting against the negotiated plan, MWRD formed an advisory committee comprised of federal, state and local stakeholders, including the local Representative, to obtain their input and participation regarding development of the planned McCook Reservoir. (Ex. 19, MWRD Letter to Corps, Oct. 21, 1994). In early 1995, the local newspaper reported that MWRD was seeking to acquire ownership of part of Vulcan's McCook quarry through condemnation proceedings, with vigorous opposition from Vulcan. (Ex. 24, Stevenson Swanson, *Push to Buy McCook Pit Could End up in Court*, Chicago Tribune, January 16, 1995).

6. McCook Reservoir Site Shifts to MWRD Sludge Lagoons Property

Following continued discussions, in 1995 MWRD and Vulcan proposed four alternative reservoir sites. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-6). Those proposals, along with the previously authorized alternative, were the focus of the Corps October 1996 Special Re-evaluation Report. (Ex. 13, Corps, SRR, Oct. 1996, at SRR-49). The Corps' October 1996 Special Re-Evaluation Report noted that acquisition of the main lobe of the Vulcan quarry would require condemnation. (*Id.* at SRR-65). Two proposals called for construction on MWRD-owned property used for sludge lagoons across the Des Plaines River from the Vulcan McCook quarry. One of those proposals, referred to as the Lagoon Open Pit Alternative, was the plan ultimately chosen by the Corps and currently under construction pursuant to the Corps' Congressional authorization.

In the Special Re-Evaluation, the Corps District Engineer concluded that there were no significant differences in environmental impacts between McCook reservoir alternatives, as construction features were included to minimize potential negative impacts and maximize beneficial effects. (*Id.* at SRR-107). Of the alternatives, the Corps District Engineer preliminarily recommended federal participation in the McCook Reservoir alternative to be located in the MWRD sludge lagoons location known as the Lagoon Open Pit Alternative

¹⁷ Newspaper articles cited in this Responsiveness Summary are provided as background regarding the history of TARP.

because it was the option with “the greatest net benefits” and had “the least economic costs, least average annual costs, increases the long term regional supply of stone, minimizes impacts to Vulcan Materials Company, is furthest from residential areas and has strong local support.” (*Id.*). It also had the earliest estimated completion schedule of the alternative proposals. (*Id.* at SRR-81). The Corps later selected this plan following review by the public and Corps’ Headquarters. (*Id.* at SRR-107; Ex. 25, Corps, *Chicagoland Underflow Plan, McCook Reservoir, Special Re-Evaluation Report and Final Environmental Impact Statement*, Oct. 1998, at Exec-14).

Subsequently in 1996, Congress enacted Section 319 of WRDA, which stated that:

The project for flood control, Chicagoland Underflow Plan, Illinois, authorized by section 3(a)(5) of the [WRDA] of 1988 (102 Stat. 4013), is modified to limit the capacity of the reservoir project to not to exceed [11 billion gallons], to provide that the reservoir project may not be located north of 55th Street or west of East Avenue in the vicinity of McCook, Illinois, and to provide that the reservoir project may be constructed only on the basis of a specific plan that has been evaluated by the Secretary [of the Army] under the National Environmental Policy Act of 1969 (42 U.S.C. § 4321 *et seq.*).

(See Section 319 of WRDA of 1996, P.L. No.104-303, 110 Stat. 3658, 3715-16 (1996)).

In 1998, the Corps issued a *Special Re-Evaluation Report and Final Environmental Impact Statement*, incorporating comments received in response to the draft EIS open for public review in 1996 and in 1997 and recommending construction of the McCook Reservoir in two stages to be located at the MWRD sludge lagoons location. (Ex. 25, Corps, SRR and FEIS, Oct. 1998, at Exec-15, EIS-117). In the Congressional joint conference committee statement in the 1998 Energy & Water Development Appropriations Act, the conferees directed “the Secretary of the Army to consider the recommendation of the Special Reevaluation Report for the McCook Reservoir, Illinois, project as developed by the Corps of Engineers Chicago District.” (Ex. 14, Corps SRR and FEIS, Feb. 1999, at SRR-5). As explained below, the Secretary of the Army ultimately adopted the Lagoon Open Pit Alternative, thereby selecting the MWRD sludge lagoons location as the site to quarry for construction of the McCook Reservoir.

7. Upper Des Plaines TARP System, Mainstream and Lower Des Plaines Tunnels Completed; Thornton Composite Reservoir Started; McCook Reservoir Site Final Approval

Meanwhile, mining excavation for the Thornton Composite Reservoir commenced in 1997. (Consent Decree 3). MWRD completed and placed in operation the Mainstream tunnel system in 1998. (Consent Decree 2; Consent Decree App. A, at 4). The O’Hare (now called Majewski) Reservoir was completed in 1998, providing the Upper Des Plaines TARP System with

additional storage capacity of 350 million gallons and placing the entire Upper Des Plaines TARP System in operation. (Consent Decree 3).

The Assistant Secretary of the Army approved the Special Re-Evaluation and Environmental Impact Statement for the McCook Reservoir and the Corps submitted it to Congress in early May 1999. Pursuant to Section 221 of the Flood Control Act of 1970, the Corps must enter into a written agreement or "Project Cooperation Agreement" with each non-federal sponsor (in this case MWRD) to provide the cooperation for a water resources project before beginning construction. (Ex. 3, Padilla Decl. ¶ 30). MWRD and the Corps executed a Project Cooperation Agreement setting forth the obligations for construction and future operation and maintenance of the McCook Reservoir on May 10, 1999. (Ex. 26, McCook Reservoir Project Cooperative Agreement, May 10, 1999, at 1, 5). The Corps report providing the preliminary design of the McCook Reservoir in the MWRD sludge lagoons location was issued in November 1999. (Ex. 27, Corps, *Chicago Underflow Plan, McCook Reservoir, Illinois, Design Documentation Report, Vol. I, Main Report*, Nov. 1999).

MWRD completed and placed in operation the Lower Des Plaines tunnel system in 2001, with a design capacity of 405 million gallons. (Consent Decree 2; Consent Decree App. A, at 4-5).

8. Ground Broken for McCook Reservoir; Calumet Tunnels Completed; McCook Reservoir Mining Commenced

MWRD commenced site preparation work in 1999 as the start of construction for the McCook Reservoir. In 2000, the Corps broke ground for an overburden cut-off wall, the Corps' official start of construction for the McCook Reservoir. Significant preparatory work was performed prior to commencing mining for the McCook Reservoir, such as:

- A 2,000 foot long tunnel was constructed under the expressway and the Des Plaines River through the rock to connect the reservoir site to the Vulcan quarry, to facilitate mining by providing a direct and efficient means of transporting excavated rock to the Vulcan processing facility.
- A rock crusher and conveyance system were constructed to crush and transport the rock from the reservoir site to the Vulcan quarry, through the 2,000 foot long tunnel, creating a system to move the rock out of the rough hole for the reservoir.
- Approximately seven million cubic yards of overburden material, the soil, clay and other material lying over the limestone, were removed from the site.

(Consent Decree App. A, at 6; Ex. 28, MWRD, TARP Status Report for 2009, at 3). Following contract negotiations, MWRD entered into a contract with Vulcan in October 2003, to mine the rough hole required for the reservoir. (Ex. 29, Vulcan Contract, Oct. 2003). By the terms of the

contract, Vulcan moved its principal operating quarry to the MWRD sludge lagoons site. (*Id.* at 15). Additional work completed or ongoing at the Thornton Composite and McCook Reservoirs by MWRD and the Corps is described in Appendix A of the Consent Decree.

MWRD completed the Calumet tunnel system in 2006, the last tunnel system to be completed, aside from the short connecting tunnels for the Thornton Composite and McCook Reservoirs. (Consent Decree 2).

Mining excavation commenced for Stage 1 at the McCook Reservoir site in the spring of 2008 and is approximately 50 percent complete. (Ex. 3, Padilla Decl. ¶ 34). Once the rough hole for each stage is completed by mining the limestone, the Corps is responsible for converting the rough hole into a functional reservoir. (Consent Decree App. A, at 7). The figure below is a Corps rendering of the McCook Reservoir. (Ex. 3, Padilla Decl. Figure A).

CUP – McCook Reservoir



Michael Padilla Declaration, Figure A

The Corps work includes, among other things, hydraulic structures for connections to the reservoir, such as a distribution tunnel, distribution tunnel outlet structure and connection of the main tunnel, as well as miscellaneous reservoir floor features such as floor drainage improvements, and aeration. (Consent Decree App. A, at 8). The Corps McCook Reservoir schedule includes over 150 line items to be completed by either the Corps or MWRD as applicable. (Ex. 3, Padilla Decl. ¶ 37).

A timeline summarizing the development, construction and implementation of TARP is included as Exhibit 6 to the Responsiveness Summary.

9. TARP Facilities that Remain to be Completed

As noted in Section III.A above, the following planned TARP facilities remain to be completed in accordance with the Consent Decree: the Thornton Composite Reservoir, Stage 1 of the McCook Reservoir and Stage 2 of the McCook Reservoir. Aerial photographs of the McCook Reservoir site and the Thornton Composite Reservoir sites are included in the exhibits to this Responsiveness Summary. (Ex. 40, Aerial Photographs of McCook Reservoir and Thornton Composite Reservoir sites from Consent Decree App. A, Figures 6, 7). Completion of the Thornton Composite Reservoir will result in completion of the Calumet TARP System, whereas completion of both stages of the McCook Reservoir will result in completion of the Mainstream/Lower Des Plaines TARP System.

APPLICABLE LEGAL PROVISIONS

IV. Applicable Provisions of the Clean Water Act and Issuance of the CSO Policy

The CWA establishes national goals and requirements for maintaining and restoring the nation's waters. As point sources, CSOs are subject to the technology and water quality-based requirements of the CWA. In 1989, EPA initiated action to clarify requirements for CSOs through the publication of the National CSO Control Strategy. (54 Fed. Reg. 37,370 (September 8, 1989)). Following extensive dialogue with interested parties, EPA issued the final Combined Sewer Overflow (CSO) Control Policy (CSO Policy) on April 19, 1994. (59 Fed. Reg. 18,688 (April 19, 1994)).

The CSO Policy "represents a comprehensive national strategy to ensure that municipalities, permitting authorities, water quality standards authorities and the public engage in a comprehensive and coordinated planning effort to achieve cost effective CSO controls that ultimately meet appropriate health and environmental objectives. The Policy recognizes the site-specific nature of CSOs and their impacts and provides the necessary flexibility to tailor controls to local situations." (*Id.*). The stated objectives of the CSO Policy are:

1. To ensure that if CSOs occur, they are only as a result of wet weather;
2. To bring all wet weather CSO discharge points into compliance with the technology-based and water quality-based requirements of the CWA; and
3. To minimize water quality, aquatic biota, and human health impacts from CSOs.

(*Id.* at 18,689). In 2000, Congress amended the CWA by adding a new paragraph (q)(1) to Section 402 as follows:

Requirements for permits, orders, and decrees – Each permit, order, or decree issued pursuant to this chapter after December 21, 2000 for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994 (in this subsection referred to as the “CSO control policy”).

(33 U.S.C. § 1342(q)(1)). As discussed in the response to comments below, the proposed Consent Decree conforms to the CSO Policy pursuant to CWA Section 402(q)(1).

RESPONSE TO COMMENTS

V. Public Comments on the Consent Decree

The Department of Justice received ten sets of public comments on the proposed Consent Decree, three of which were from groups of citizen organizations with extensive comments, including voluminous attachments. The three groups consist of: the Alliance for the Great Lakes (Alliance), Environmental Law & Policy Center, Prairie Rivers Network and Southeast Environmental Task Force (Alliance commenters); Natural Resources Defense Council (NRDC), Environmental Law & Policy Center, Friends of the Chicago River, Prairie Rivers Network, Sierra Club and Southeast Environmental Task Force (NRDC commenters); and the Center for Neighborhood Technology (CNT), Environmental Law & Policy Center, Friends of the Chicago River, NRDC, Openlands, Prairie Rivers Network, Sierra Club and Southeast Environmental Task Force (CNT commenters). There is some overlap among the commenters’ groups, as some citizen organizations joined more than one set of comments. Citations to their comments refer to the commenter on the letterhead – i.e. Alliance, NRDC or CNT.

The main concerns expressed in the comments were compliance with the CSO Policy, the length of the schedule for completing the reservoirs and the amount of green infrastructure projects required. Many issues raised in two sets of comments pertained to other potential CWA claims that were not alleged in the Complaint and therefore are beyond the scope of the settlement. As noted in the responses below, the Consent Decree only resolves the civil claims of the United States and the State of Illinois for the violations alleged in the Complaint through the date of lodging (the date the Consent Decree was initially filed with the Court prior to the public comment process). (Consent Decree ¶ 79).

A. Analysis of MWRD CSO LTCP's Conformance with EPA's CSO Policy

The Consent Decree, in accordance with the requirements of the CWA, requires MWRD to complete its LTCP pursuant to an enforceable schedule and, upon completion, requires compliance with the CSO-related provisions of its then current NPDES Permits. The Alliance commenters suggest that the Consent Decree is not in compliance with what they term "CSO Law." (*See, e.g.*, Ex. 7-7, Alliance at 17). According to the Alliance commenters, "CSO Law" is composed of the CWA, the CSO Policy, MWRD's 2002 NPDES Permits and a 2003 guidance memorandum issued by EPA and the Department of Justice (EPA/DOJ 2003 Memorandum) regarding negotiation of CSO consent decrees. (*Id.*). The CWA, including Section 402(q)(1), and MWRD's NPDES Permits have legal requirements that the Governments have applied in this enforcement action. Conversely, the EPA/DOJ 2003 Memorandum does not include legal requirements.

The EPA/DOJ 2003 Memorandum on negotiation of CSO consent decrees makes clear that it creates no legal obligations, stating in part:

This document provides guidance on how EPA and the Department of Justice intend to exercise their discretion in implementing provisions of the CSO Policy concerning judicial consent decrees to resolve CSO enforcement actions. Any statutory provisions and EPA regulations described in this document contain legally binding requirements. This document does not substitute for those provisions or regulations, nor is it a regulation itself. Thus, it does not impose legally binding requirements on EPA, States, or the regulated community, and may not apply to a particular situation based upon the circumstances. EPA and State decision makers retain the discretion to adopt approaches on a case-by-case basis that differ from this guidance where appropriate. *Any decision regarding a particular facility will be made based on the statute and regulations, not in reliance on this guidance.* Upon application of the recommendations and interpretations in this guidance, EPA will, and States should, consider whether or not the recommendations or interpretations are appropriate in that situation.

(Ex. 30, EPA/DOJ 2003 Memorandum, Sept. 16, 2003, at 6 (emphasis added)). As shown in the responses to the comments below, the Consent Decree conforms and is consistent with the CSO Policy, as is required by Section 402(q)(1) of the CWA, 33 U.S.C. § 1342(q)(1), and with the applicable provisions of the CWA and EPA regulations. As the EPA/DOJ 2003 Memorandum expressly states, that document imposes no other legally binding requirements.

Although the Alliance commenters' "CSO Law" is not actually a law, the Alliance commenters believe that the Consent Decree is in violation of it in numerous respects. However, alleging noncompliance with a created "CSO Law," without citing specific legal requirements in the CWA, CSO Policy or NPDES Permits is a vague assertion. The Alliance commenters' reference

to “CSO Law” occurs numerous times in their comments, and is noted when applicable in the responses below.

1. CSO Control Efforts Initiated Prior to the CSO Policy

Although the CSO Policy accounts for the circumstance in which a municipality or sewage authority is already in the process of implementing a long-term CSO remedy, and allows that in certain circumstances the pre-existence of an LTCP obviates the need to comply with some aspects of the policy, TARP does not fit the terms of this exception. (Ex. 7-1, NRDC at 26-27).

Response

The CSO Policy specifically addresses CSO control work initiated prior to issuance of the policy. Section I.C of the CSO Policy, *Effect on Current CSO Control Efforts*, states that:

EPA recognizes that extensive work has been done by many Regions, States, and municipalities to abate CSOs. As such, portions of this Policy may already have been addressed by permittees’ previous efforts to control CSOs. Therefore, portions of this Policy may not apply, as determined by the permitting authority on a case-by-case basis...

(59 Fed. Reg. 18,690). The CSO Policy describes three such scenarios in Sections I.C.1, I.C.2 and I.C.3 under which portions of the CSO Policy may not apply.

Section I.C.1 of the CSO Policy states the following:

Any permittee that, on the date of publication of this final Policy [April 19, 1994], has completed or substantially completed construction of CSO control facilities that are designed to meet WQS [water quality standards] and protect designated uses, and where it has been determined that WQS are being or will be attained, is not covered by the initial planning and construction provisions in this Policy; however, the operational plan and post-construction monitoring provisions continue to apply. If, after monitoring, it is determined that WQS are not being attained, the permittee should be required to submit a revised CSO control plan that, once implemented, will attain WQS.

Section I.C.2 states:

Any permittee that, on the date of publication of this final Policy [April 19, 1994], has substantially developed or is implementing a CSO control program pursuant to an existing permit or enforcement order, and such program is considered by the NPDES permitting authority to be adequate to meet WQS and protect designated uses and is reasonably equivalent to the treatment objectives of this Policy, should complete those facilities without further planning activities otherwise expected by this Policy. Such

programs, however, should be reviewed and modified to be consistent with the sensitive area, financial capability, and post-construction monitoring provisions of this Policy.

Finally, Section I.C.3 states:

Any permittee that has previously constructed CSO control facilities in an effort to comply with WQS but has failed to meet such applicable standards or to protect designated uses due to remaining CSOs may receive consideration for such efforts in future permits or enforceable orders for long-term CSO control planning, design and implementation.

(*Id.*).

We agree with the commenters that TARP probably does not qualify for Section I.C.1 because in April 1994, when the CSO Policy was issued, TARP was not completed, nor even substantially completed, though it was under construction with some tunnels already completed and operating. However, the commenters assert that TARP falls within Section I.C.3 partially on the theory that TARP could not qualify for Section I.C.1 or I.C.2, so therefore, it must fall under I.C.3. (Ex. 7-1, NRDC at 26-27). Section I.C.3, however, applies to permittees that have previously constructed CSO control facilities but failed to meet applicable water quality standards. As MWRD has not completed TARP, and had not as of April 1994, Section I.C.3 does not apply to TARP.

TARP fits into the Section I.C.2 provisions because at the time of the publication of the policy, MWRD had developed a CSO control program and was implementing that CSO control program pursuant to an existing permit. The commenters state that TARP does not qualify under Section I.C.2 because TARP was not incorporated as a requirement in MWRD's NPDES Permits, nor was it required pursuant to an enforcement order. Section I.C.2 of the CSO Policy applies to any permittee that has "substantially developed or is implementing a CSO control program pursuant to an existing permit or enforcement order..." (59 Fed. Reg. at 18,690). While MWRD was not at that time implementing TARP pursuant to an enforcement order, it was implementing TARP pursuant to existing permits. MWRD's Calumet WRP 1988 NPDES Permit, North Side WRP 1988 NPDES Permit and Stickney WRP 1987 NPDES Permit required that MWRD develop and submit for IEPA approval, an operational plan including procedures to maximize treatment, "with special emphasis on the control of TARP." (See, e.g., Ex. 31, Calumet WRP 1988 NPDES Permit at 8 and North Side WRP 1988 NPDES Permit at 7).¹⁸

Pursuant to the North Side WRP NPDES Permit, MWRD submitted a TARP operational plan to IEPA in September 1989. (Ex. 32, MWRD TARP Operational Plan, Sept. 26, 1989). Although

¹⁸ MWRD Stickney, North Side and Calumet permits were issued under MWRD's previous name "Metropolitan Sanitary District of Greater Chicago." Also, the Stickney WRP at that time was called the "West-Southwest Sewage Treatment Works."

MWRD's 1987-1988 NPDES Permits expired by their own terms in 1992 and 1993 respectively, they remained in full force and effect in accordance with Illinois law, codified at 5 ILCS 100/10-65(b), until IEPA issued new permits in 2002.¹⁹ Those permits were therefore in effect at the time EPA issued the CSO Policy.

MWRD's NPDES Permits subsequently issued in 2002 contain provisions pertaining to TARP, including the statement that "[t]his Permit contains provisions implementing the federal Combined Sewer Overflow (CSO) Control Policy and recognizes [TARP], now under construction, as the long-term control plan for the Chicago metropolitan area." (Ex. 8, Calumet WRP NPDES Permit S.C. 19, North Side WRP NPDES Permit S.C. 20, Stickney WRP NPDES Permit S.C. 19). MWRD's NPDES Permits also state the following:

Following extensive studies by the State of Illinois, Cook County, the City of Chicago, and the Permittee [MWRD], TARP was found to be the most cost-effective means of achieving the control of CSOs in compliance with the Clean Water Act. The Permittee adopted TARP in October 1972, and later the same year the other three agencies mentioned above also approved TARP. Approval of TARP by the USEPA for funding purposes was obtained in 1975. In 1995, IEPA confirmed that TARP met the "presumption" approach requirements of the 1994 CSO Policy. IEPA and USEPA have determined, *consistent with Section 1.C.2. of the CSO Policy*, that the completion of TARP without further planning would fulfill the obligations of the CSO Policy, since it is believed that upon completion of the reservoirs, CSOs will no longer cause or contribute to violations of water quality standards or use impairment. The permit does require identification of sensitive areas that may trigger the need for additional planning for CSO control and further requires water quality monitoring during and after construction of TARP, to assure that CSOs controlled by TARP meet applicable water quality standards.

(Ex. 8, North Side WRP NPDES Permit, S.C. 20 (emphasis added)).

The pertinent part of Section I.C.2 states that "... such program is considered by the NPDES permitting authority to be adequate to meet WQS and protect designated uses." (59 Fed. Reg. at 18,690). The practical application of that part of Section I.C.2 is further described in EPA guidance documents issued subsequent to publication of the CSO Policy. In September 1995, EPA issued a guidance document titled *CSOs, Guidance for LTCP* that provides further explanation of Section I.C., *Effect on Current CSO Control Efforts*, of the CSO Policy.²⁰ The guidance states the following:

Some municipalities have already begun, and perhaps completed, CSO abatement activities. In these cases, "...portions of [the] Policy may not apply, as determined on a case by case basis...." (I.C.). The CSO Control Policy outlines three such scenarios: (1) municipalities that have completed or substantially completed construction of CSO

¹⁹ Although MWRD's 2002 NPDES Permits expired by their own terms in 2007, they remain in full force and effect in accordance with Illinois law, codified at 5 ILCS 100/10-65(b), until IEPA issues new permits.

²⁰ See EPA, *CSOs, Guidance for LTCP*, Section 1.6.4, *Integration of Current CSO Control Efforts*, available at <http://www.epa.gov/npdes/pubs/owm0272.pdf>

facilities, (2) municipalities that have developed or are implementing a CSO control program pursuant to an existing permit or enforcement order, and (3) municipalities that have constructed CSO facilities but have failed to meet applicable WQS. Municipalities that fall under these scenarios should coordinate with their NPDES permitting authorities to determine the scope of the required long-term planning activities.

In cases where significant work has been conducted, municipalities would present an overview of their programs to illustrate the impact of CSO improvements on a system-wide basis.

(EPA, *CSOs, Guidance for LTCP*, Sept. 1995, at 1-15).

IEPA is the permitting authority for the NPDES program in Illinois and by 1995 had carefully reviewed MWRD's proposed CSO control program, TARP. By that time IEPA had issued numerous construction permits related to TARP, substantial construction had been completed pursuant to the permits and, as noted below, many public hearings regarding TARP had been held.

IEPA determined in a June 28, 1995, letter that "the completion of TARP will be adequate to meet water quality standards and protect the designated uses of the receiving waters pursuant to Section I.C. (titled 'Effect on Current CSO Control Efforts') of the federal CSO Control Policy." (Ex. 33, IEPA Letter to MWRD, June 28, 1995). IEPA further stated in that letter that "[Section I.C.] specifically exempts [MWRD] from the planning requirements otherwise expected under the federal policy," adding that "[v]erification of compliance with water quality standards will still be required when TARP is completed." (*Id.*). Thus, with regard to Section I.C.2 of the CSO Policy, IEPA, the NPDES permitting authority in Illinois, considered TARP to be adequate to meet water quality standards and protect designated uses.

The NRDC commenters allege that the Consent Decree is facially in non-compliance with the CSO Policy, and hence the CWA, and must be rejected on that ground alone. (Ex. 7-1, NRDC at 25). In support of that assertion, NRDC commenters state that Section I.C.2 "requires that LTCP's be 'reviewed and modified' to comply with financial capability and post-construction monitoring requirements of the Policy." (*Id.* at 27). As stated in Section I.C.2 of the CSO Policy, such programs "should be reviewed and modified to be consistent" with the financial capability and post-construction monitoring provisions of the policy. (59 Fed. Reg. at 18,690). The Governments have reviewed MWRD's LTCP, TARP, for consistency with the financial capability and post-construction monitoring provisions of the CSO Policy. As discussed in more detail below, the Consent Decree conforms to those provisions of the policy.

In short, MWRD's CSO control program, TARP, falls within Section I.C.2 of the CSO Policy and not Section I.C.3 as urged by the NRDC commenters. This distinction has significant implications in applying the CSO Policy and affects many of the commenters' other comments

regarding application of the CSO Policy because it exempts TARP from some of the CSO Policy planning provisions cited by the commenters.

2. LTCP Provisions in the CSO Policy

a. CSO Policy Presumption Approach

The Consent Decree fails to require that MWRD comply with the criteria in the Presumption Approach as required by the CSO Control Policy. (Ex. 7-1, NRDC at 27-30).

Response

In accordance with the CSO Policy, “[p]ermittees with CSOs are responsible for developing and implementing long-term CSO control plans that will ultimately result in compliance with the requirements of the CWA.” (59 Fed. Reg. at 18,691). The CSO Policy allows permittees to use one of two approaches in developing an LTCP:

- 1) demonstrate that its plan is adequate to meet the water quality-based requirements of the CWA (“demonstration approach”), or 2) implement a minimum level of treatment (e.g., primary clarification of at least 85 percent of the collected combined sewage flows) that is presumed to meet the water quality-based requirements of the CWA, unless data indicate otherwise (“presumption approach”).

(EPA, CSOs, *Guidance for LTCP*, at 1-4).²¹

IEPA approved TARP as MWRD’s LTCP under the CSO Policy’s presumption approach in 1995. The NRDC commenters, citing Section IV.B.2.c of the CSO Policy, state that the policy “requires that LTCPs be expressly required to meet whatever criterion is selected as the basis for the presumption approach” and that the Consent Decree’s failure to require that criterion is a legal deficiency. (Ex. 7-1, NRDC at 28, 30). The CSO Policy includes permitting provisions for “developing appropriate, site-specific NPDES permit requirements” and also includes enforcement initiatives to require the immediate elimination of dry weather overflows and “to ensure that the remaining CWA requirements are complied with as soon as practicable.” (59 Fed. Reg. at 18,688). The NRDC commenters cite Section IV.B.2.c which is in the “Phase II Permits” subsection for “NPDES Permit Requirements” of the CSO Policy and describes requirements that should be contained in a permittee’s Phase II permit, after a permittee has completed development of the CSO LTCP. (59 Fed. Reg. at 18,696). Consistent with the CSO Policy, these are permit considerations to be determined by the NPDES permitting authority, IEPA, in addition to the Consent Decree requirements that will be implemented after TARP has been completed. The CSO Policy provisions pertaining to enforcement of wet weather CSO

²¹ Available at <http://www.epa.gov/npdes/pubs/owm0272.pdf>

requirements include implementation of nine minimum controls (NMCs), development of an LTCP and implementation of the LTCP, as applicable. (59 Fed. Reg. at 18,697). The Consent Decree fully comports with these enforcement provisions set forth in the CSO Policy. (*Id.*).

b. Public Notice and Participation in Development of TARP

The Consent Decree fails to mandate compliance with the public participation requirement in developing the long term control plan in the CSO Policy. (Ex. 7-1, NRDC at 4, 27, 39-40).

Response

Section II.C.2 of the CSO Policy, *Public Participation*, is among the provisions applying to permittees developing an LTCP under the CSO Policy. That particular provision states that “[i]n developing its long-term CSO control plan, the permittee will employ a public participation process that actively involves the affected public in the decision-making to select the long-term CSO controls.” (59 Fed. Reg. at 18,692). As discussed previously in this summary, MWRD developed TARP and completed some of the tunnels prior to issuance of the CSO Policy and is therefore not required under the CSO Policy to restart the LTCP development process as part of the Consent Decree.

Nonetheless, numerous public meetings regarding TARP have been conducted throughout the development and construction of the project. The Corps 1986 *Chicagoland Underflow Plan, Final Phase I General Design Memorandum, Feasibility Report and Environmental Assessment* summarized various steps taken to seek public input regarding TARP:

The draft [*Feasibility Report*] and environmental assessment were distributed to concerned Federal, state, and regional agencies; organizations; and individuals for review and comment in early October 1986. The report was also furnished to the mayors or presidents of 55 communities within and adjacent to the study area, as well as to 50 community libraries. In addition, a public meeting notice and executive summary of the draft report were sent to over 3,000 other interested parties. Public meetings were held in Chicago, Brookfield, Skokie, and Calumet City, Illinois on November 7, 12, 13, and 19, 1986, respectively. The meetings were divided into three parts including: (1) a slide presentation by the District Engineer summarizing the problem studied, alternatives analyzed, and the resulting conclusions and recommendations; (2) the presentation of statements and comments by persons attending the meeting; and (3) a question and answer period.

(Ex. 12, Corps, Feasibility Report, Dec. 1986, at 145).

Similarly, the Corps February 1999 *Special Re-Evaluation Report and Final Environmental Impact Statement* included the following information about public participation:

The Environmental Impact Statement was prepared under authority of the National Environmental Policy Act. A Draft EIS was prepared and circulated for a 60-day public and agency review on October 2, 1996. The review period reopened on March 1, 1997 for an additional 60-day review following concerns raised by communities located to the south of the recommended plan.

Twelve public meetings were held in Countryside Village Hall during 1995 and 1996. These meetings were sponsored by Congressman Lipinski and State Representative Lyons. Two public meetings were held during the initial public review period (October 19, 1996 and November 16, 1996). The Village of Willow Springs sponsored a public meeting prior to the second review period. Comments received during the review have been reviewed and incorporated into the Final EIS.....

The Final EIS was circulated for a 30-day public and agency review. Comments were solicited from all interested parties.

(Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-2 – Exec-3). The Corps October 1998 *Special Re-Evaluation Report and Final Environmental Impact Statement* lists the agencies, groups, libraries, newspapers and individuals to whom the report was furnished for review and comments, including the following citizen's groups: the Lake Michigan Federation (now the Alliance for the Great Lakes), the Sierra Club, the Friends of the Chicago River, the Center for Neighborhood Technology and Citizens for a Better Environment, among others. (Ex. 25, Corps, SRR and FEIS, Oct. 1998, at EIS-117 – EIS-166).

There have been at least 15 *Federal Register* notices regarding TARP, not including the two *Federal Register* notices pertaining to the Consent Decree. All but two of those notices included opportunity for written public comments or hearings. (Ex. 34, List of Federal Register Notices pertaining to TARP).

As these examples make clear, there have been many opportunities for public notice and participation regarding TARP. In addition, although not expressly required by the CSO Policy, the Consent Decree nonetheless may require that MWRD make a plan to ensure compliance with the CWA following completion of TARP, and this plan would be made available to the public by posting it on its website, if such a plan proves necessary. (Consent Decree, ¶ 36(c)).

3. LTCP Alternatives Analysis

EPA should have required analysis of alternatives to the currently-planned scale of TARP, analysis of alternative measures to supplement and/or replace part of TARP, and EPA should have required that MWRD assess the effectiveness of TARP and green infrastructure

supplements or substitutes in light of current realities, rather than simply accepting decades-old conclusions. (Ex. 7-1, NRDC at 3, 30-32).

Response

Alternatives to the current design for TARP were evaluated numerous times in varying degrees since TARP's inception. The Flood Control Coordinating Committee evaluated over 20 alternatives to TARP prior to its adoption in the 1970s. (Ex. 9, *Development of a Flood and Pollution Control Plan for the Chicagoland Area*, Flood Control Coordinating Committee, Dec. 1972). As described above, many studies reevaluating various aspects of TARP were conducted in the 1980s and 1990s.

The NRDC commenters cite Section II.C.4 of the CSO Policy in describing the requirement for an alternatives analysis. (Ex. 7-1, NRDC at 30). However, as discussed above, because MWRD developed TARP prior to issuance of the CSO Policy, pursuant to Section I.C.2 of the policy, MWRD was not required to conduct further planning activities, including LTCP-related planning requirements such as characterization, monitoring and modeling of the combined sewer system, evaluation of alternatives and development of the LTCP. MWRD conducted LTCP planning activities prior to issuance of the CSO Policy and the CSO Policy did not require that MWRD go back and restart the planning process. In addition, as discussed above, not only were alternatives vigorously analyzed initially, but alternatives were also analyzed at various other times leading up to the approval of TARP as the LTCP.

Two sets of commenters maintain that the Governments should have required analysis of alternative measures to TARP as part of the process of negotiating the Consent Decree, particularly analysis of supplementation or partial substitution of gray infrastructure in the LTCP with green infrastructure.²² The effectiveness of some green infrastructure measures, such as porous pavement, was evaluated in the Corps' 1986 Feasibility Report as measures to reduce the inflow rate to the sewers. (Ex. 12, Corps, Feasibility Report, Dec. 1986, at 1-54). The report found several areas of concern with the use of porous pavement in the Chicago area, for example the impact of freeze-thaw cycles and that the ground freezing in the winter causes it to become impervious. After completing the evaluation of numerous alternative measures, the report concluded that a systematic regional approach was needed to reduce the combined sewer back up flooding problem and that reservoir storage, in combination with the tunnel systems, was the most cost effective measure. (*Id.* at 2, 3). Some of the other measures were considered to be better implemented locally than as a regional solution. (*Id.* at 3, 1-36, 1-40).

²² The term "gray" infrastructure in this context refers to engineered control structures or equipment to control CSO discharges such as tunnel systems, storage tanks, sewer systems, wastewater treatment plants and pump stations. Green infrastructure refers to practices to increase infiltration to groundwater, evapotranspiration, storage and reuse of rain water. Green infrastructure, generally speaking, uses vegetation and soil or on-site detention such as rain barrels or cisterns, to manage rainwater where it falls.

Nonetheless, as discussed in greater detail below, substantial green infrastructure is required in Appendix E of the Consent Decree. Green infrastructure has gained increasing acceptance as a way to reduce storm water flows to combined sewer systems. However, up until recently, CSO LTCPs have been based on gray infrastructure, as opposed to green infrastructure. For instance, an EPA 1993 guidance document titled, *Manual, Combined Sewer Overflow Control* (September 1993), did not include green infrastructure as a CSO control and noted that “[i]n low-lying areas with little topographical relief, using tunnels to control CSO may serve the additional purpose of reducing flooding problems.”²³

Given that TARP was approved as the LTCP following an extensive evaluation of alternatives and MWRD has already completed significant portions of TARP, delaying completion of TARP to conduct further alternatives analysis that is not legally required would not be in the public interest.

4. Consideration of Sensitive Areas

Pre-TARP completion requirements in the Consent Decree do not conform with “CSO Law” in several respects including failing to address eliminating CSOs to sensitive areas. The CSO Control Policy requires that, when developing an implementation schedule, the impact of CSOs on sensitive areas must be given the highest priority. (Ex. 7-7, Alliance at 26-27).

Response

As noted above, the commenters’ references to a “CSO Law” are vague and include guidance that on its face is not legally binding. As discussed above, Section I.C.2 of the CSO Policy provides that already developed LTCPs should be reviewed and modified to be consistent with the sensitive area provisions of the policy. Under the CSO Policy, municipalities should give highest priority to controlling CSOs to receiving waters considered “sensitive.” (59 Fed. Reg. at 18,692). EPA’s CSO Policy guidance provides that as part of developing an LTCP, municipalities should be required to identify all sensitive water bodies and the CSO outfalls that discharge to them. (EPA, *CSOs, Guidance for LTCP*, 1995, at 1-21).²⁴ “Sensitive areas are identified by the NPDES authority, in coordination with other State and Federal agencies as appropriate, and include: Outstanding National Resource Waters, National Marine Sanctuaries, Waters with threatened or endangered species or their designated critical habitat, Primary contact recreation waters such as bathing beaches, public drinking water intakes or their designated protection areas, [and] Shellfish beds.” (*Id.*). For sensitive areas, the CSO Policy provides that the LTCP should prohibit new or significantly increased CSOs, and eliminate or relocate CSOs

²³ EPA, *Manual, Combined Sewer Overflow Control*, Sept. 1993, at 32, available at <http://www.nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=30004MAO.txt>

²⁴ Available at <http://www.epa.gov/npdes/pubs/owm0272.pdf>

that discharge to sensitive areas wherever physically possible and economically achievable. (*Id.* at 1-21 to 1-22).

Consistent with the CSO Policy, MWRD's NPDES Permits contain CSO requirements, including requirements pertaining to sensitive areas. (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.7 "Sensitive Area Considerations"). The permits state that IEPA had tentatively determined that certain specified outfalls did not discharge to sensitive areas. The permits also required MWRD to submit documentation as to whether other specified CSO outfalls discharge to sensitive areas and state that IEPA will make a determination based on that documentation and other available information. (*Id.*). MWRD submitted the required documentation in 2003 and is in compliance with those provisions.

Permittees must consider the impact of CSO discharges on sensitive areas when determining how to proceed with construction under an LTCP. The CSO Policy provides that "[s]chedules for implementation of the CSO controls may be phased based on the relative importance of adverse impacts upon WQS and designated uses, priority projects identified in the long-term plan, and on a permittee's financial capability." (59 Fed. Reg. at 18,694). The CSO Policy further provides that construction phasing should consider, among other things, eliminating overflows that discharge to sensitive areas as the highest priority.

Even if some of MWRD's CSOs were to discharge to sensitive areas, there are no construction phasing options available for considering impacts on sensitive areas in completing TARP construction activities. The tunnels were completed in 2006 and the only construction left is for two reservoirs – the Thornton Composite Reservoir and the McCook Reservoir. Construction at both sites is well underway and proceeding simultaneously.

B. TARP Completion Schedule

1. Timeline to Complete the Thornton Composite and McCook Reservoirs

I back the Friends of the Chicago River's request that you speed up the TARP timeline. (Ex. 7-8, J. Roche).

I'd like to see a shorter timeline put in effect for the cleaning up of the Chicago River (TARP). (Ex. 7-9, C. Hodak).

I hope you will work toward speeding up TARP. The MWRD has obfuscated and delayed too long. (Ex. 7-3, H. Saunders).

If MWRD could reverse the flow of the Chicago River away from Lake Michigan, it certainly could dig a reservoir faster than over 18 years. (Ex. 7-7, Alliance at 26).

Response

A few comments requested a faster schedule for completing TARP in general. Some comments expressed particular concern about the length of the McCook Reservoir schedule. Since the mining for the rough hole for the Thornton Composite Reservoir is more than 94 percent completed and the reservoir completion date is less than three years away, less concern was expressed in the comments about the completion schedule for that reservoir. Therefore, the Governments' response will primarily focus on the completion schedule for the McCook Reservoir.

The McCook Reservoir will be the largest reservoir for combined sewer flows in the country and part of the largest CSO LTCP, in terms of storage capacity, in the country. (Ex. 3, Padilla Decl. ¶ 12; Ex. 4, Aistars Decl. ¶ 22). EPA has determined that the construction completion schedule is reasonable for the amount of rock excavation and construction required. The schedule calls for excavating the rough hole for the reservoir by commercial mining at the market rate as provided in the plan approved by the Corps and that was subject to Congressional authorization. The alternative suggested by the commenters, stockpiling excavated rock, has numerous feasibility and environmental impact issues. Additionally, the commercial mining is being conducted by Vulcan Materials Company (Vulcan), a mining operator in a unique position to excavate the site expeditiously based on the company's expertise as the largest producer of crushed stone in the country and the location of Vulcan's stone processing facility practically next door to the McCook Reservoir site.

The reservoir completion schedules in the Consent Decree include completing the mining of the rough holes and subsequent construction of the reservoirs in the rough holes, with appurtenances. MWRD must complete mining of the rough holes for the Thornton Composite Reservoir by December 31, 2013, Stage 1 of the McCook Reservoir by December 31, 2016 and Stage 2 of the McCook Reservoir by December 31, 2028. MWRD must then complete and place in operation, the Thornton Composite Reservoir by December 31, 2015, Stage 1 of the McCook Reservoir by December 31, 2017 and Stage 2 of the McCook Reservoir by December 31, 2029. (Consent Decree ¶¶ 16(a), 16(d), 17(a), 17(b), 17(e), 17(f)). Completion of the Thornton Composite Reservoir in 2015 will add 4.8 billion gallons of storage capacity and complete the Calumet TARP System. Completion of Stage 1 of the McCook Reservoir in 2017 will add 3.5 billion gallons of storage capacity to the Mainstream/Lower Des Plaines TARP system. Thus, by the end of 2017, MWRD will add 8.3 billion gallons in CSO storage capacity to TARP for a total

capacity at that time of approximately 11 billion gallons, more than four times the current design capacity of approximately 2.65 billion gallons.²⁵ (Ex. 3, Padilla Decl. ¶ 10).

Pursuant to the Project Cooperative Agreement (PCA) with the Corps, MWRD must provide the real estate and the rough holes within which the Corps will construct the McCook Reservoir. (Ex. 26, McCook PCA, at 6). Excavation of the rock to create the rough holes for the reservoir accounts for the longest part of the reservoir completion schedule. As discussed above, commercial mining operators are mining the rough holes. There are a number of reasons why MWRD is excavating the rock in this manner. First, due to the size of the reservoirs required, the TARP reservoirs were planned to be constructed in quarries to provide the required storage volume. Second, most of the material to be excavated is dolomite limestone, a valuable natural resource, which must be excavated by blasting and mining by experienced mining operators to remain usable as well as for efficiency and safety. Third, the total amount of limestone expected to be mined for the McCook Reservoir is approximately 116 million tons, as discussed in more detail in the responses below, an amount that could not reasonably be stored or disposed of and therefore is most appropriately distributed in the construction market.

The Corps' 1986 Feasibility Report noted that excavation of the rock for the rough hole would be completed by the quarry companies as part of their normal mining operations for the Thornton Composite and McCook Reservoirs. (Ex. 12, Corps, Feasibility Report, Dec. 1986, at 43, 115, 116). Almost all of the rock to be excavated for the rough holes was considered marketable. (*Id.* at 115, 116).

The Corps' 1996 Special Re-Evaluation for the McCook Reservoir also specifically stated that the rate of mining would be determined by the market for stone:

MWRDGC currently owns the land which would be used for the reservoir. MWRDGC and Vulcan or some other mining company would enter into a legal agreement which details the requirements of both parties. This would include a requirement that the lagoons area be mined in accordance with a mining plan which allows for the reservoir. The rate of mining would be determined by the market for stone.

(Ex. 13, Corps, SRR and DEIS, Oct. 1996, at SRR-78; *see also* Ex. 14, Corps, SRR and FEIS, Feb. 1999, at SRR-81). The Corps' Special Re-Evaluation indicated that the average rock production rate for excavation of the rough hole for the McCook Reservoir was expected to be the same as the rate produced by Vulcan at the Vulcan McCook quarry at that time. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at SRR-105). Because the commercial mining company would bear the costs for excavation, those costs were not included as part of the project costs. (*See generally, id.* at SRR-81, SRR-107, SRR-109).

²⁵ The current storage capacity includes the Calumet tunnel system, the Mainstream/Lower Des Plaines tunnel system and the Upper Des Plaines TARP system. (Consent Decree App. A, at 3, 4, 5, 9, 11, 13).

The Corps sent the EIS to various agencies, groups and individuals for notice and comment. The list of recipients in the Corps October 1996 EIS indicates that the EIS, with the SRR, was sent to some of the local environmental groups who are also commenters on the Consent Decree – the Alliance (formerly the Lake Michigan Federation), the Sierra Club, Friends of the Chicago River, and the Center for Neighborhood Technology, along with other local citizen groups. (Ex. 13, Corps, SRR, Oct. 1996, pg. EIS-110, EIS-111).

If MWRD had simply paid a mining contractor at the outset to blast and mine the rock without selling the stone at the market rate, it would have been extremely difficult, if not infeasible, to store all of the excavated rock with an estimated volume of 68 million cubic yards, amounting to a 35 foot high stockpile on 1,217 acres (almost two square miles). (Ex. 1, Langer Decl. ¶ 59). In addition, it would have led to the loss of a substantial natural resource in the Chicago area.

By using a private mining operator, MWRD is obtaining an empty quarry after the operator has finished mining there. Vulcan, the largest producer of crushed stone in the country, is an experienced and highly efficient operator. (*Id.* at ¶ 21, 22). By the arrangement under the Vulcan contract, MWRD pays Vulcan only the incidental cost of conducting its mining operation on MWRD's site rather than Vulcan's own quarry, without MWRD having to dispose of the excavated rock. (Ex. 29, Vulcan Contract, Oct. 2003, at 9, 16). The Governments believe that this cost savings allows the project to proceed faster, but the arrangement also provides a substantial environmental benefit by avoiding the impacts of double-handling the rock from stockpiling or disposal of over 100 million tons of limestone.

a. Alternatives to Excavating the Rough Holes by Commercial Mining

The Alliance and NRDC commenters raised questions about alternatives to commercial mining of the rough holes for excavating the reservoir sites. The Governments explored some of those alternatives during the course of Consent Decree negotiations and explored some others after receiving public comments on the Consent Decree. The Governments determined that commercial mining of the rough holes at the market rate is by far the most efficient means of excavating the rock for the rough holes, as discussed in more detail in response to the specific suggestions below.

The Consent Decree reflects no analysis of alternatives to the protracted implementation scheme devised by U.S. EPA, whereby completion of TARP is tied to the vagaries of the market for the stone being removed by a private entity to create rough holes at the reservoir site. (Ex. 7-1, NRDC at 33.) EPA failed to even require consideration of whether there were more practical alternative means of completing TARP more quickly. (Ex. 7-1, NRDC at 34).

By failing to require MWRD to prove that faster completion dates are not possible and that there were no alternatives to the Vulcan contract's market-based pace of performance, the Consent Decree fails to conform to the CSO Policy and, hence, the CWA. (Ex. 7-7, Alliance at 26).

Response

As noted previously, excavating the reservoirs by commercial mining was a component of the reservoir construction part of TARP, long before the Governments began negotiating the Consent Decree with MWRD. Alternatives were analyzed in the December 1972 *Chicagoland Underflow Plan* and again in subsequent Corps Special Re-Evaluations before the final plan was authorized.

In addition, the Governments considered various alternatives to commercial mining during the course of Consent Decree negotiations and consulted with mining experts at the United States Geological Survey (USGS) and the Illinois Geological Survey (ISGS), Mr. William Langer and Dr. Subhash Bhagwat.²⁶ (See Ex. 1, Langer Decl.; Ex. 2, Bhagwat Decl.). Such alternatives were previously considered in the context of an approved LTCP and authorized Corps project that is already largely constructed, rather than an LTCP being developed. Therefore, while the Governments considered some alternatives, a full-scale reanalysis of alternatives as if it were the early stages of LTCP development was not required nor in the public interest. Given that extensive alternative analyses were conducted during the 1970s through the 1990s and experts' validation of those analyses as outlined below, the Governments believe that the schedule for the McCook Reservoir represents the most practical alternative for quickly completing TARP.

The Alliance and NRDC commenters suggested the following alternatives to the current TARP construction plan underway: renegotiation of mining contracts; contracting with a different

²⁶ Mr. William Langer, who has a Master's degree in Geology, was employed by the USGS for approximately forty years, and served as the Research Geologist for Aggregate Resources at the USGS from 1976 to 2011. His job responsibilities included: (1) conducting research on geologic issues related to the location, identification, characterization, extraction and processing of aggregate (crushed stone, sand and gravel) resources, and the reclamation of mined out areas; (2) responding to inquiries related to planning, prospecting, characterization, extraction, processing, use and reclamation of aggregate resources; and (3) conducting outreach activities related to aggregate resources to industry, members of the public, and other stakeholders. As such, he is an expert in the mining of aggregates. (Langer Decl. ¶¶ 3-4).

Dr. Subhash Bhagwat is a Principal Resource Economist (Retired) at the Illinois State Geological Survey (ISGS) and an Adjunct Principal Scientist at the University of Illinois at Urbana-Champaign, with approximately forty years of experience as an economist specializing in mining resources. As a Resource Economist, he has extensive expertise in the economic market for aggregates (crushed stone and sand and gravel resources) in Illinois and throughout the United States. (Bhagwat Decl. ¶¶ 3-4, 6).

mining operator; stockpiling or disposing of rock; and selling the rock at a substantially reduced price. The comment regarding each alternative and the Governments' response to each is discussed below.

EPA should have required consideration of the following alternatives, among others, that could achieve more prompt completion of TARP:

i. Renegotiation of Contracts

Not only do the excavation contracts contain no requirements or incentives to mine the quarry rock faster than the commercially optimal rate, but they also provide for a 4 percent royalty to be paid to MWRD – potentially an impediment to profitable sales. The possibility of re-negotiating the contracts to remove marketing disincentives and provide marketing incentives should have been evaluated. Instead of charging a royalty, MWRD could potentially agree to pay a compensating premium to mine the stone during times when market conditions inhibited its sale. (Ex. 7-1, NRDC at 34).

MWRD could be required to forego its 4 percent royalty to give Vulcan additional incentive to remove rock. (Ex. 7-7, Alliance at 26).

Response

Royalty payments are typical in the mining business where a mining operator is extracting resources from land owned by another entity. (Ex. 1, Langer Decl. ¶ 67; Ex. 2, Bhagwat Decl. ¶ 16). In this case, the royalty payments are offset by payments that MWRD owes to Vulcan for various additional costs incurred by Vulcan related to the project, such as costs associated with the rock crushing system and rock conveyance system. (Ex. 29, Vulcan Contract, Oct. 2003, at 8-14). Foregoing royalties would not increase the crushed stone production rate or shorten the schedule for completion of TARP and would possibly only make it more profitable for Vulcan and more expensive for MWRD.

There is no indication that the royalty payments are an impediment to profitable sales. Indeed, Vulcan's crushed stone production from the McCook Reservoir site is among the top 0.5 percent in the country since it has been mining that property. (Ex. 1, Langer Decl. ¶ 21).

The NRDC commenters' suggestion that MWRD not receive a royalty and that MWRD also pay Vulcan a premium to increase mining when sales are down would result in a cost increase to MWRD both for the loss of royalties and the additional funds expended. More important, however, is the issue of storing the continually excavated stone that is not sold. That stone would have to be stockpiled and stored somewhere until it could be sold. As discussed in more

detail below, stockpiling the amount of rock to be excavated for the McCook Reservoir carries substantial environmental and feasibility concerns, among other issues. Additionally, the commenters' suggestion that MWRD forego the royalty payment would necessitate renegotiating MWRD's mining contract, either with Vulcan or with another mining contractor, thereby delaying the project for an unknown period under either scenario. Ramifications of the NRDC commenters' suggestion to break the contract with Vulcan and look for another mining operator to mine the McCook site are discussed below.

Having MWRD forego the royalty payment would not necessarily give Vulcan additional incentive to remove the rock. Vulcan's incentive to excavate limestone is sales. If Vulcan's production costs were 4 percent less by not paying a royalty, Vulcan would still need the sales orders to provide the reason for removing the rock. If MWRD were to forego the royalty payment, there is no guarantee that Vulcan would drop the sales price by 4 percent in response. Moreover, if Vulcan were to decrease the sales price by 4 percent, as discussed below, sales would not thereby increase. (Ex. 2, Bhagwat Decl. ¶ 16). Indeed, demand for commodities such as crushed stone is driven by the need for crushed stone in construction projects rather than the sales price of the stone. (*Id.* at ¶ 9).

ii. Contracting with Another Mining Operator to Excavate the Rough Hole

Nothing in the Consent Decree reflects scrutiny of MWRD's choice of the particular contractors it selected. The Vulcan contract recites in its whereas clauses a determination that no other contractor could practicably perform the work at the McCook Reservoir, but the Consent Decree reflects no effort on the part of U.S. EPA to independently verify that conclusion. A different contractor than Vulcan may well have been willing to agree to a more expeditious schedule (albeit perhaps at a greater cost to MWRD). (Ex. 7-1, NRDC at 34).

Response

EPA, as well as the Corps, evaluated Vulcan's ability to mine the rough hole for the reservoirs. The Corps extensively reviewed this issue, as described below, and concluded that Vulcan, as the top producer of crushed stone in the nation with its convenient quarry location next door to the McCook Reservoir, was uniquely well situated to perform the work. More recently and in connection with negotiations regarding the Consent Decree, EPA determined that Vulcan was well situated to complete the rough role for the McCook Reservoir, given its market position, location and history of mining at the reservoir location. EPA therefore separately determined that Vulcan continued to be the logical choice for completing the mining necessary for construction of the reservoir.

In response to specific directives contained in the Congressional Conference Report that accompanied the Fiscal Year 1990 Energy and Water Development Appropriations Act (House Report 101-235), the Corps included an economic analysis as part of the reevaluation study of the McCook Reservoir. (Ex. 14, Corps, SRR and FEIS, Feb.1999, at B-1). The Corps, with the assistance of a mining consultant, compared/contrasted mining of the McCook Reservoir site by Vulcan versus another “stand-alone” contractor. (*Id.* at B-78). The Re-Evaluation Report identified the following advantages to having Vulcan mine the property, compared to a hypothetical stand-alone contractor:

- The McCook (Vulcan) quarry would not be condemned and would remain in business;
- Vulcan could mine the MWRD property for the McCook reservoir site at a higher rate, so that reservoir benefits would start earlier;
- New highway access to the MWRD property for trucks would not be needed; and
- Crushed stone market impacts would be minimized.

(*Id.*). The Corps identified four market structure factors that could diminish the probability of a competitor mining operator successfully bidding against Vulcan:

- Non-distinguishable products: a new neighboring quarry could not easily differentiate the quality of its crushed stone product to successfully enter the local market and gain market share away from Vulcan.
- Economies of scale: Vulcan’s McCook quarry’s relatively large, in-place production capacity “places the quarry at a distinct competitive advantage due to economies-of-scale, thereby restricting potential competitors from gaining market share” over the Vulcan McCook quarry through price competition. A new quarry at a small scale output will be at a disadvantage because it may produce inefficiently relative to the larger Vulcan McCook quarry (in 1992, Vulcan McCook quarry production was ranked as the fifth largest quarry in North America).
- Corporate position: Vulcan’s corporate experience and position in the crushed stone market is considerable. In 1993, Vulcan was the largest corporate producer of crushed stone in the United States. Vulcan’s corporate position may “hypothetically enable [Vulcan] to under-cut market prices at a particular quarry for an extended length of time, by spreading such short-term financial losses over multiple national quarry operations, thereby outcompeting neighboring quarries.” and;
- Preferential pricing: Vulcan may entice or reward its established customers to continue purchasing from the McCook quarry rather than from a new market entrant by giving preferential long-term contracts and/or prices, covering basic fixed costs while maintaining capacity.

(*Id.* at B-79 to B-80). The Corps’ report estimated the Vulcan rate of mining at 7.21 million tons per year, versus the stand-alone contractor mining rate at 3.0 million tons per year. (*Id.* at B-80).

Vulcan ranked first in producers of crushed stone (in terms of tonnage) in the United States from 1989 through 2011, the most recent year for which such data are available. (Ex. 1, Langer Decl. ¶ 19). As the largest producer of crushed stone in the United States, Vulcan clearly has the expertise, experience and resources to maintain high production at the McCook Reservoir site. According to Vulcan, its “323 active aggregates facilities provide opportunities to standardize and procure equipment (fixed and mobile), parts, supplies and services in an efficient and cost-effective manner, both regionally and nationally.”²⁷

In addition, for several reasons, Vulcan is in a “unique and extremely favorable” position to mine the rough hole for the McCook Reservoir expeditiously. (*Id.* at ¶ 22). Vulcan’s McCook quarry is nearly adjacent to the McCook Reservoir site, separated only by the Des Plaines River and Interstate 55. This close proximity allows Vulcan to continue to use its processing plant and other facilities at its quarry, while mining the rough hole for the reservoir. Vulcan transports excavated rock from the McCook Reservoir site by a conveyor belt through a tunnel constructed by MWRD for this purpose to the Vulcan quarry for processing and sale, allowing the rock to be processed quickly and efficiently. (*Id.*). Additionally, by transporting the rock by the conveyor belt, MWRD avoided constructing a truck access road adequate to allow heavy truck transport of the rock out of the McCook Reservoir site, thereby also avoiding the associated impacts of truck traffic over the course of the mining of the rough hole. (*Id.*).

At the McCook Reservoir site, Vulcan produces more aggregate than any other quarry in the Chicago area. (*Id.* at ¶ 21). Of several thousand quarries nationally, the McCook Reservoir site has been in the top ten producers of crushed stone since Vulcan began mining the site in 2008 through 2011, the most recent year for which such data are available. (*Id.*). During that time, Vulcan’s crushed stone production from the McCook Reservoir site has been in the top 0.5 percent of crushed stone producers in the country. (*Id.*).

If a mining operator other than Vulcan were to mine the rough hole for the McCook Reservoir, as suggested by commenters, that operator would face significant delays and added costs. (Ex. 2, Bhagwat Decl. ¶ 11; Ex. 1, Langer Decl. ¶ 23; Ex. 3, Padilla Decl. ¶ 42). The new mining operator would have to negotiate a contract with MWRD to excavate the rock, which could be a complicated and lengthy negotiation. (Ex. 3, Padilla Decl. ¶ 42; Ex. 1, Langer Decl. ¶ 23). Switching mining operators could actually lengthen rather than shorten the McCook Reservoir schedule, potentially by years, due to (1) uncertainties and delays associated with breaking the existing contract between MWRD and Vulcan; (2) selecting a new mining operator, including soliciting bids, reviewing bids and negotiating a contract with the new operator; (3) installing a

²⁷ Securities and Exchange Commission 2011 Form 10-K for Vulcan Materials Company, pg. 5, *available at* <http://www.sec.gov/Archives/edgar/data/1396009/000119312512089430/d257544d10k.htm>

processing area and facilities at a new processing site; (4) constructing road access for truck transportation; and (5) getting the operation up to speed excavating and selling or stockpiling the crushed stone. (Ex. 3, Padilla Decl. ¶ 42; *see also* Ex. 1, Langer Decl. ¶¶ 23, 24).

Crushed stone mining operators process the excavated stone before selling it to end users. (Ex. Langer Decl. ¶¶ 13, 14). A different mining operator would encounter more difficulty in determining where to process the excavated rock than Vulcan would with its quarry next door. (*Id.* at ¶¶ 23, 24). Aggregates, such as the limestone at the McCook Reservoir site, are mined by drilling and blasting large rocks out of a quarry. (*Id.* at ¶ 13). The rocks are then typically loaded into large haul trucks or conveyors and transported to a processing area. (*Id.*). Plant processing typically includes crushing, washing and segregating the rocks by size, with conveyor belts transporting the rocks to different areas of the plant. (*Id.* at ¶ 14). The crushed stone can then be temporarily stored in stockpiles of various sizes, shapes and quality to meet the requirements of different customers. (*Id.*).

All of that rock processing and temporary storage requires land space, which is unlikely to be adequately available within the McCook Reservoir Site. (*Id.* at ¶ 23). If instead a new mining operator chose to transport the excavated rock to its quarry site for processing, this would create inefficiencies and increased costs and would result in double-handling of the rock. (*Id.* at ¶ 24). Since most of the crushed stone from the McCook Reservoir site is transported by diesel trucks, double-handling of the stone would lead to greater diesel emissions from the trucks. (*Id.*). The transportation of 7 million tons of stone, the targeted average amount per year, from the McCook Reservoir site to the new mining operator's processing site and then to the end user's site, would require an estimated 280,000 additional truck trips per year. (*Id.*). Alternatively, if the new mining operator did not have an existing quarry for processing the stone, it would have to purchase or lease a newly acquired area, if such an area could be found with a willing seller. Additionally, the new mining operator would have to obtain permits to operate its business at that location, which can be a very lengthy process. (*Id.* at ¶ 23). Finally, a new mining operator would have to compete with Vulcan and other local crushed stone producers for customers. (*Id.* at ¶ 26).

For the reasons stated above, the Governments did not determine that MWRD should break its contract with Vulcan and seek a new contract with a different mining operator to excavate rock at the McCook Reservoir site.

iii. Stockpiling or Disposing of Crushed Stone

Rather than wait for Vulcan to find a market, Vulcan could be paid to remove rock. Since MWRD owns the quarry, a variety of other financial arrangements could be made. (Ex. 7-7, Alliance at 26).

Alternatives to the current schedule would include stockpiling of rock for subsequent use or sale or disposal of the rock in a suitable location. (Ex. 7-1, NRDC at 35).

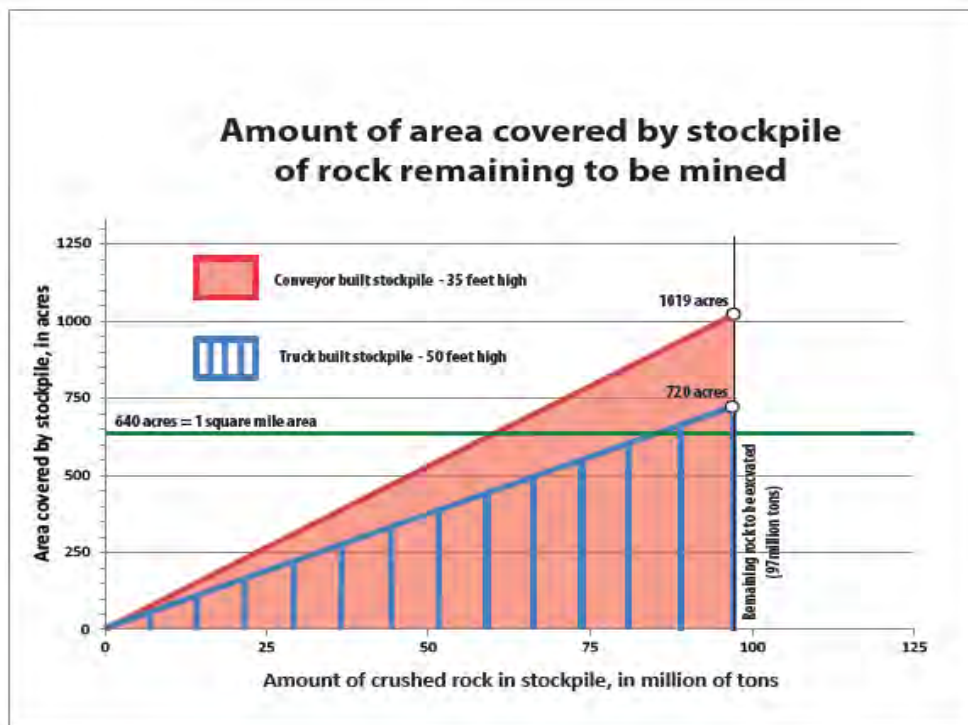
Response

The two comments above suggest mining at a prescribed rate rather than a market rate and either stockpiling or disposing of rock that is not sold at the time it is excavated. However, mining at a prescribed rate regardless of market demand is not the general industry practice and doing so would raise serious environmental and other concerns. (Ex. 1, Langer Decl. ¶ 27). Mining operators produce crushed stone in response to market demand, thus allowing them to optimize productivity and minimize waste. (*Id.*; Ex. 2, Bhagwat Decl. ¶ 10). EPA's expert, William Langer, stated that he was "not aware of any operators that mine and process aggregate as quickly as possible regardless of market conditions." (Ex. 1, Langer Decl. ¶ 27).

Importantly, if Vulcan or another mining operator excavated the rock at a prescribed rate rather than a market rate, the excess would have to be stockpiled, raising numerous concerns, including where to locate such voluminous stockpiles, how to transport such large amounts of rock to the stockpile site, as well as environmental concerns resulting from storage in stockpiles and wastage of a valuable natural resource. (*Id.*; *See also* Ex. 2, Bhagwat Decl. ¶¶ 13-15).

After blasting and excavation, the volume of mined rock expands by a factor of 33 percent, which is referred to as the swell factor. (Ex. 1, Langer Decl. ¶ 49 n.4). Thus, the volume of rock that would have to be stockpiled is much greater than the amount of stone in place prior to drilling and blasting. The amount of rock to be excavated, managed and disbursed is difficult to comprehend by the numbers alone. Therefore, to assist in understanding the issues related to stockpiling, EPA's expert calculated the potential stockpile amounts, with graphs for illustration.

As depicted in the graph below, the amount of rock remaining to be excavated from the McCook Reservoir site would cover more than 1,019 acres in a 35-foot high stockpile.²⁸ (*Id.* at ¶ 57). The graph also shows a horizontal green line indicating that 640 acres is equivalent to one square mile. (*Id.*). The graph below shows the amount of land required for stockpiles built either by trucks or by conveyors.

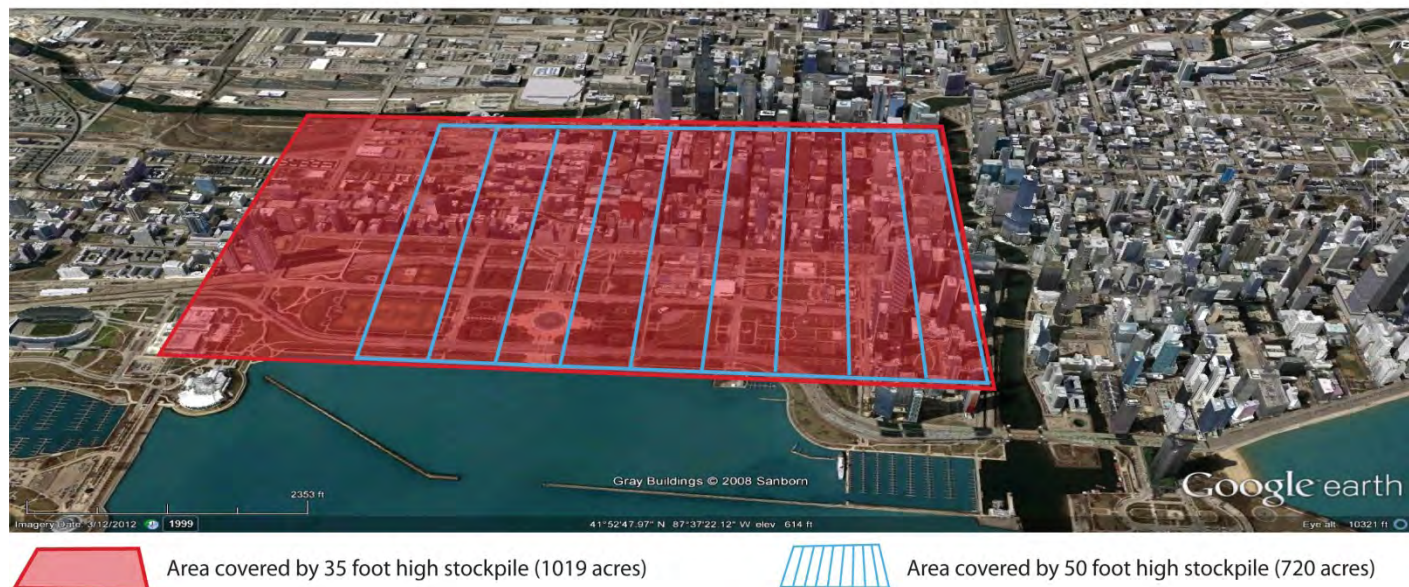


Attachment A to Declaration of William Langer

²⁸ The 35-foot high stockpile would be built by conveyor. Stockpiles can also be built by trucks, to create 50-foot high stockpiles. (Ex. 1, Langer Decl. ¶ 41). If the stockpile were 50-foot high, it would cover 720 acres. (*Id.* at ¶ 57).

As illustrated in the figure below, a 35-foot high stockpile would cover the 1,019 acre area in downtown Chicago generally known as the “Loop” as well as Grant Park, from the Chicago River on the north, to Roosevelt Road on the south, Lake Michigan on the east and the South Branch of the Chicago River on the west. (*Id.*).

Figure illustrating amount of area required to stockpile stone remaining to be mined



Attachment B to Declaration of William Langer

In addition to the placement issues with the tremendous volume of rock to be excavated, there are many environmental and safety concerns associated with stockpiling, concerns that increase significantly with the larger volumes of rock to be handled. Stockpiling compresses the underlying soil, kills the vegetation and can affect the pH of the soil by precipitation percolating through the stockpile. (*Id.* at ¶ 60). Off-site stockpiling would also necessitate double-handling of the rock by transporting the excavated rock twice, first to the stockpiles and then to the customer. (*Id.* at ¶¶ 28, 61). Double-handling would increase use of loading and processing equipment and over-the-road trucks, which leads to increased diesel emissions, increased wear and tear on the equipment and increased exposure to accidents. (*Id.* at ¶ 61; *See also* Ex. 3, Padilla Decl. ¶ 43). Double-handling of the rock also raises concerns of increased environmental impacts from particulates in dust, noise and truck diesel emissions. (Ex. 4, Aistars Decl. ¶ 21). Increased diesel emissions impact human health, the environment and global climate.²⁹

²⁹ See information regarding diesel emissions on EPA’s website at <http://www.epa.gov/cleandiesel/basicinfo.htm>. Diesel exhaust emissions can “lead to serious health conditions like asthma and allergies, and can worsen heart and

Since stockpiles are designed to be temporary places to easily store and access rock, they “often exhibit only marginal strength” and may be vulnerable to collapse from equipment weight, equipment vibration or change in the weather. (Ex. 1, Langer Decl. ¶ 62). Because maintaining stockpiles involves a lot of equipment, such as mobile mining equipment, trucks and other vehicles near the stockpiles, vehicle operators, customers, visitors, employees and trespassers would be subject to the above-mentioned hazards of stockpiling. (*Id.*).

For efficiency, mining operations generally haul away and sell crushed stone shortly after it is mined, rather than storing it in large stockpiles. (*Id.* at ¶ 29; Ex. 2, Bhagwat Decl. ¶¶ 10, 13, 15). Mining operators store crushed stone in stockpiles while the stone is awaiting sale, but limit the size and amount of time the material is stockpiled because stockpile management presents significant challenges in terms of maintaining the quality of the material. (Ex. 1, Langer Decl. ¶ 29). Maintaining the quality of the material is necessary because aggregate or crushed stone is produced to specification, meaning that it must match a specific blend of particle sizes. (*Id.* at ¶ 30). Crushed stone used for road construction, for example, must meet detailed and specified state regulatory criteria, which is also often used on private construction projects.³⁰ (*Id.*).

Mining operators must maintain the integrity and blend of the material as it was placed in the stockpile to meet the specifications for a particular customer or type of product. (*Id.* at ¶ 31). Stockpiling can adversely impact the quality of the material due to degradation, segregation and contamination, which can result in the material no longer meeting the identified specifications. (*Id.* at ¶ 32). Depending on how much the crushed stone degrades from stockpiling, it may no longer be usable for commercial purposes and may need reprocessing. (*Id.*). Thus, it is extremely important to properly construct and maintain a stockpile, and remove the material from the stockpile as soon as possible, to prevent the adverse impacts noted above. (*Id.*).

Another suggestion by the commenters, disposal of the rock in a suitable location, raises significant concerns about disposal locations for potentially tremendous amounts of rock and wasting a valuable natural resource. Disposal of the rock in a landfill would take up valuable landfill space and waste a natural resource. (*Id.* at ¶ 63). EPA’s expert estimated that disposing of seven million tons of crushed stone, the average annual amount targeted in excavating for the McCook Reservoir, would equal about two thirds of the compacted material annually disposed in Chicago area landfills. (*Id.*). Increasing the amount of stone disposed of in a landfill would increase the amount of crushed stone taking up valuable landfill space. (*Id.*).

lung disease.” (*Id.*). Diesel engines emit particulate matter (soot), nitrogen oxides, air toxics and black carbon, all of which can damage plants, animals, crops and water resources. (*Id.*).

³⁰ See, e.g., Illinois Department of Transportation regulations, *Standard Specifications for Road and Bridge Construction*, Jan. 2002, Section 1004, *Coarse Aggregate*, available at <http://www.dot.state.il.us/desenv/pdfssec2002/sec1000.pdf>

Disposing of the excavated stone in a landfill would also be wasting a very valuable natural resource that has many uses including construction of roads, bridges, residential buildings and commercial buildings, and no other material can take the place of aggregates for such uses. (*Id.* at ¶ 37; Ex. 2, Bhagwat Decl. ¶ 12). Although much of the Chicago area is underlain with dolomitic bedrock, the ability to obtain the rock for use as aggregate is severely limited by rock quality issues, conflicting land uses, urban encroachment, zoning and citizen opposition. (Ex. 1, Langer Decl. ¶ 39). As a result, existing permitted sources of crushed stone in the Chicago area are not abundant. (*Id.*).

iv. Selling Excavated Crushed Stone at a Substantially Reduced Price

MWRD should have explored the option of identifying large-scale end users of quarry rock and offering the rock at a substantially reduced price to encourage its prompt sale, potentially coupled with an obligation to purchase the rock at a specified rate. (Ex. 7-1, NRDC at 35).

Response

Pursuant to Vulcan's contract with MWRD, Vulcan owns and is responsible for the excavated rock. (Ex. 29, Vulcan Contract, Oct. 2003, at 8). Since Vulcan is mining the rough hole as part of its commercial mining operation, Vulcan has the business incentive to price its stone to encourage prompt sale. As noted above, Vulcan is the largest producer of crushed stone in the country (Ex. 1, Langer Decl. ¶ 19), demonstrating superior competence in moving stone to market. Moreover, Vulcan's McCook quarry produces the most crushed stone in the Chicago area and is one of the most productive in the country (*Id.* at ¶ 21), indicative of Vulcan's knowledge of the Chicago area market and ability to sell stone efficiently.

Additionally, there is no guarantee that offering the rock at reduced prices to large-scale end users, such as road construction contractors, would increase sales of crushed stone because sales of commodities such as crushed stone are not highly price dependent. (Ex. 2, Bhagwat Decl. ¶ 9). Crushed stone buyers, or end users, must have projects for which the crushed stone is needed. (*Id.*). For example, for road construction projects, it is the construction contractors that generally purchase the crushed stone for highway projects, rather than a governmental entity such as the Illinois Department of Transportation.³¹ Contractors do not buy rock, which would be in the hundreds of tons, and stockpile it in anticipation of a potential future project. (*Id.* at ¶¶ 11, 20). It would be too speculative to make such a purchase and purchasers generally do not have storage space to stockpile hundreds of tons of crushed stone. (*Id.* at ¶ 20). If a purchaser opted to buy the crushed stone in anticipation of future projects and did have the space to stockpile stone, it would result in at least double-handling of the stone and would require

³¹ See Securities and Exchange Commission 2011 Form 10-K for Vulcan Materials Company, at 13, *available at* <http://www.sec.gov/Archives/edgar/data/1396009/000119312512089430/d257544d10k.htm>

stockpile management as discussed above, with the associated stockpiling issues. (*Id.*; Ex. 1, Langer Decl. ¶ 27). Purchasing large quantities of crushed stone well in advance of the need for the stone is not a common business practice and making large purchases of crushed stone requiring long-term stockpiling is not economically advantageous for the purchaser. (*Id.* at ¶ 71). For these reasons, crushed stone buyers generally purchase the stone on an as needed basis and price reductions typically do not increase demand for the stone. (Ex. 2, Bhagwat Decl. ¶¶ 9, 20).

The NRDC and Alliance commenters incorrectly assume that EPA and Illinois EPA failed to consider options outside of commercial mining in their consideration of the proposed Consent Decree. However, other viable options are not readily available and the options proposed by the commenters, such as mining at a prescribed rate rather than a market rate or switching contractors, would either not speed up mining and/or would create significant adverse impacts.

b. Effect of a Construction Contract on LTCP Planning

The Consent Decree recognizes the Vulcan contract, but there is no legal requirement that the Governments do so. The 2003 Vulcan contract was signed after the 2002 Permits were issued and, obviously was not part of the 1995 approval of TARP. Before accepting the time frames in the Vulcan contract as the approved time frames for the completion of TARP, the Governments should have required, and now must require, MWRD to engage in all the analyses and demonstrations associated with LTCP elements including: evaluation of alternatives, cost/performance considerations and financial capability. (Ex. 7-7, Alliance at 26).

Response

The Consent Decree recognizes that TARP is MWRD's approved LTCP and also that the reservoirs are part of a congressionally authorized Corps project. As discussed previously, the Corps reports providing the basis for the Corps' selection of the Lagoon Open Pit Alternative in 1999, as well as earlier Corps reports, affirmed that the reservoirs would be excavated by commercial mining at the market rate. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at SRR-81; Ex. 12, Corps, Feasibility Report, Dec. 1986, at 43, 115, 116). Commercial mining of the rough holes at the market rate was also part of TARP before IEPA confirmed TARP as MWRD's LTCP pursuant to the CSO Policy in 1995. The contract between Vulcan and MWRD, in which Vulcan agrees to excavate limestone at the market rate and not stockpile rock, thus follows the plan to construct TARP approved by the Corps pursuant to Congressional directive.

The Alliance commenters, as previously discussed, argue that the Governments should have required and now must require MWRD to engage in all the analyses and demonstrations associated with initial LTCP development. However, such LTCP development and re-analyses

are not required by the CSO Policy or otherwise under the CWA. Moreover, it would not be in the public interest, because it would lead to substantial delays, require extensive resources and be redundant of previous analyses.

c. Effect of Financial Capability on the Construction Schedule

The Consent Decree completion time frame is not consistent with financial capability analysis. The CSO Policy expressly requires that the time frame for completion of an LTCP be established based on the community's ability to pay for expedited implementation. Pursuant to the CSO Policy, the time frame for implementation of the controls can then be determined based on (in substantial part) a permittee's financial capability. (Ex. 7-1, NRDC at 35 (citing Section II.C.8 of the CSO Policy)).

Before accepting the timeframes in the Vulcan contract as the approved time frames for the completion of TARP, the Governments should have required, and now must require, MWRD to engage in all the analyses and demonstrations associated with LTCP elements, including MWRD's financial capability. (Ex. 7-7, Alliance at 26 (citing Section II.C.8 of the CSO Policy)).

Response

MWRD's LTCP, TARP, was adopted, under construction and partially operating prior to issuance of the CSO Policy. Thus, at the time the CSO Policy was issued, TARP planning was past the initial financial planning stages. The Corps analyzed MWRD's financial capability and determined that MWRD could provide the necessary local funding. (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at SRR-109).

Section II.C.8 of the CSO Policy states that the "permittee should include all pertinent information in the long term control plan necessary to develop the construction and financing schedule for implementation of CSO controls." (59 Fed. Reg. at 18,694). The "financing" part of the "construction and financing schedule" refers to the tasks associated with financing the LTCP, an important consideration in how the permittee will complete the project. (EPA, CSOs, *Guidance for LTCP*, Sept. 1995, at 4-6 to 4-11).³² The same section of the CSO Policy states that "[s]chedules for implementation of the CSO controls may be phased based on the relative importance of adverse impacts upon WQS [water quality standards] and designated uses, priority projects identified in the long-term plan, and on a permittee's financial capability." (59 Fed. Reg. 18,694). The CSO Policy then provides that construction *phasing* should consider, among other things, the permittee's financial capability, and includes a number of financial factors for consideration. (*Id.*). Neither the CSO Policy nor EPA guidance developed in conjunction with

³² Available at <http://epa.gov/npdes/pubs/owm0272.pdf>

the CSO Policy expressly requires that the time frame for completion of a LTCP be established based on the community's ability to pay for expedited implementation.

EPA issued financial capability guidance in February 1997, titled *Combined Sewer Overflows – Guidance for Financial Capability Assessment and Schedule Development*. (The “financial capability guidance”).³³ The financial capability guidance has two stated goals: (1) provide a planning tool for evaluating the financial resources a permittee has available to implement CSO controls; and (2) assist the permittee, EPA and state NPDES authorities in cooperatively developing CSO control implementation schedules. (EPA, Financial Capability Guidance, Feb. 1997, at 7). The financial capability guidance states the following with regard to implementation schedules for CSO controls:

The permittee should first develop a tentative implementation schedule based on logical engineering sequencing and normal construction practices. The permittee should complete a critical path analysis to identify the shortest implementation schedule that will achieve the control objectives identified in the LTCP (See guidance: *Combined Sewer Overflows-Guidance for Long-term Control Plan (EPA 832-13-95-002)*). As a result of negotiations with state NPDES and EPA authorities, it may be appropriate to modify the tentative design and construction schedule based on the environmental and financial considerations [in the guidance].

In general, the final negotiated schedule for CSO controls would reflect two types of modifications to the engineering and construction schedule. First, where CSOs discharge to sensitive or significantly use-impaired water bodies, the final schedule would provide for expedited implementation of the controls for these discharges. Second, the schedules may be phased or extended to reflect the significance of various financial considerations, particularly financial capability. The number of years to implement the CSO controls would be negotiated between the permittee, EPA and state NPDES authorities.

(*Id.* at 43). The financial capability guidance also provides that while “the time period for the CSO control implementation schedule is defined by the time required for normal engineering and construction practices,” the schedule “can lengthen by phasing construction of the CSO controls when financial consideration create a financial burden.” (*Id.* at 48). Thus, the financial capability guidance allows for modification to the construction schedule by shortening the schedule for sensitive area considerations or extending it for financial capability considerations. In this case, the TARP completion schedule in the Consent Decree is based on logical engineering sequencing and normal construction practices. MWRD did not seek a longer schedule due to financial capability considerations. Because MWRD did not seek nor did the Governments grant a longer construction schedule based upon financial considerations, such a financial analysis would not serve any purpose.

³³ The financial capability guidance can be found at <http://www.epa.gov/npdes/pubs/csofc.pdf>

2. Contingency Event Provisions

The purportedly fixed completion dates are rendered largely illusory by the section entitled contingency event. (Ex. 7-1, NRDC at 33).

By failing to put any limits on the number of Contingency Events or their length, in violation of “CSO Law,” the Consent Decree does not impose a firm, fixed-date completion schedule. (Ex. 7-7, Alliance at 25).

Response

Recognizing that TARP is not only the approved LTCP but is also a Corps project authorized by Congress, the Consent Decree acknowledges that the schedule for completion of the reservoirs is based, in part, on the completion of excavation of the reservoirs by private quarry operators and, for the McCook Reservoir, on the timely completion of specific project elements by the Corps. Since reliance upon the quarry operators and the Corps, both non-parties to the Consent Decree, is an integral part of MWRD’s compliance with obligations set forth in the Consent Decree and because the rate of progress by the quarry operators and the Corps may be subject to factors beyond MWRD’s control, the Governments and MWRD negotiated the Contingency Event provisions to address potential delay.

The commenters fail to appreciate the fact that TARP, in addition to being MWRD’s approved LTCP, is also a Corps flood control project that has been approved by Congress. Following extensive evaluation by the Corps, the Secretary of the Army selected an alternative for completion of TARP that included commercial mining as the method by which to dig the rough hole, taking into consideration cost effectiveness, as well as the logistical, transportation and environmental challenges associated with the project. Indeed, using commercial mining will ensure that the rough hole is mined efficiently while at the same time minimizing environmental impacts and making productive use of a valuable natural resource.

The Contingency Event provisions allow for an extension if the mining operators fail to meet the mining completion date or if the Corps fails to meet project completion dates in the Consent Decree, subject to specified criteria:

- MWRD has satisfied all obligations that impact the projected mining schedule that are due and owing to the mining operators;
- MWRD has satisfied all obligations that impact reservoir completion that are due and owing to the Corps under the Corps/MWRD Project Cooperation Agreement;

- MWRD has made all practical efforts consistent with the applicable agreement to avoid the occurrence of a Contingency Event and mitigate the impact thereof; and
- Such delay is caused entirely by an event or events beyond the control of MWRD.

(Consent Decree ¶ 20). If MWRD claims a contingency event, MWRD must submit specified information to the Governments, including, *inter alia*, a revised proposed schedule that is as expeditious as possible. (*Id.* at ¶ 22). MWRD's claim that a contingency event has occurred and the proposed schedule are subject to EPA approval, after consultation with IEPA. (*Id.* at ¶ 24). A Contingency Event schedule delay only applies to delays caused by the mining operators or the Corps. MWRD cannot invoke a contingency event schedule extension for delays caused by MWRD. If MWRD claims a contingency event and the Governments agree that MWRD has met the criteria set forth in the Consent Decree as described above, MWRD must implement additional green infrastructure pursuant to the Green Infrastructure Program in Appendix E of the Consent Decree, as described in more detail below. (Consent Decree App. E, Sec. IV).

The Consent Decree also includes requirements if MWRD claims a Contingency Event due to bankruptcy or insolvency of a mining operator, appointment of a receiver to take possession of the business or property of a mining operator, a general assignment for the benefit of creditors with respect to a mining operator, or any other action or inaction by a mining operator that materially affects MWRD's ability to complete a reservoir within a reasonable time and there is no successor enterprise to undertake those obligations within six months of the above occurrences. (*Id.* at ¶ 27). Under those scenarios, MWRD must submit to the Governments for approval a revised work plan to complete the work remaining for the applicable reservoir as expeditiously as practicable. (*Id.* at ¶¶ 27(a), 27(b)). This provision provides insurance for an unlikely but nonetheless potential event that could otherwise cause an unreasonable delay.

The NRDC commenters request that DOJ withdraw the Consent Decree and negotiate a new settlement agreement that would, among other things, no longer include the Contingency Event provisions. (Ex. 7-1, NRDC at 2, 34). The NRDC commenters suggest that Contingency Event delays could be addressed by requiring that the work be completed in some other manner, perhaps by one of the four alternatives listed in their comments, in the event the mining operators are unwilling or unable to sell the rock at an adequate pace. (Ex. 7-1, NRDC at 34-35). However, that suggestion is not meritorious for reasons associated with each alternative as discussed above. Additionally, neither deletion of the Contingency Event provisions, nor adoption of the NRDC commenters' alternatives, alters the fundamental fact that commercial mining is part of the approved LTCP and authorized Corps project.

The Alliance commenters propose that instead of including the Contingency Event provision, MWRD should pay a private party to mine the quarry, rather than allowing a mining operator to commercially mine and sell the rock at the market rate. (Ex. 7-7, Alliance at 25). This would

entail withdrawing the Consent Decree, the Governments negotiating or litigating a resolution that requires MWRD to pay a private party to mine the quarry, MWRD finding and negotiating a new contract with that party and that party installing its mining operation at the site. On top of the extensive delays that would be caused by that process, the commenters' proposal is problematic due to the difficulties in stockpiling very significant amounts of limestone, as discussed above.

The Contingency Event provisions reflect a compromise reached after lengthy and contentious negotiations. The provisions preserve the rights of the Governments and MWRD, while providing a process for evaluating and handling potential schedule delays, after meeting specified requirements.

3. Force Majeure

In addition to the Contingency Event provision, MWRD may also seek delay of its obligations by claiming a force majeure event. The only express limit on a force majeure event is that MWRD cannot claim financial inability to perform as a force majeure. (Ex. 7-7, Alliance at 25).

Response

Section XIV is the Force Majeure section of the Consent Decree. (Consent Decree 45). Force majeure provisions are standard provisions of EPA consent decrees. A force majeure event is defined as "any event arising from causes beyond the control of MWRD, of any entity controlled by MWRD, or of MWRD's contractors, that delays or prevents the performance of any obligation under this Consent Decree despite MWRD's best efforts to fulfill the obligation." (*Id.* at ¶ 60). Such a provision is typically included in federal environmental consent decrees and reflects the reality that unforeseen events can occur that prevent or delay performance of consent decree obligations. The commenter has not provided a reason that would compel straying from the standard language.

C. CSO Policy Nine Minimum Controls

Despite its recognition and the availability of clear evidence that MWRD is not meeting Nine Minimum Control (NMC) requirements, EPA failed to include meaningful NMC compliance requirements in the Consent Decree in violation of the CWA. (Ex. 7-1, NRDC at 4, 41-43).

The NMC are an essential component of the CSO Policy. Despite MWRD's failure to effectively implement many of the NMC, including its failure to control floatables as alleged in the Complaint, the Consent Decree does not adequately address MWRD's violations of "CSO Law" or require the immediate compliance demanded by the CSO Policy. (Ex. 7-7, Alliance at 27).

Response

1. Allegations Outside the Complaint in this Matter

The Consent Decree includes injunctive relief for the violations alleged in the Complaint. The Governments' Complaint alleged, *inter alia*, that MWRD failed to comply with a condition of its NPDES Permits that requires MWRD to control floatable debris from its CSOs. (Complaint ¶¶ 54-59). Controlling floatable debris from CSOs is both a permit requirement in this case and a nine minimum control (NMC) as required by the CSO Policy. Accordingly, the Consent Decree includes a floatables control program as part of the injunctive relief. (Consent Decree App. B, Floatable Control Plan, Dkt. No. 3-3). The Complaint does not allege violations of the other NMCs, and the Consent Decree therefore does not include injunctive relief for those NMCs. The United States declines to speculate on allegations not alleged in the Complaint in this case.

In addition, the NRDC and Alliance commenters, while commenting that there is clear evidence of MWRD's violations of the other NMCs, did not allege violations of the other NMCs in their Plaintiff-Intervenor Complaints in this case. (Complaint-in-Intervention by Alliance, Dkt. No. 48; Complaint-in-Intervention by NRDC, Dkt. No. 49). The Complaint filed by NRDC, Sierra Club and Prairie Rivers Network against MWRD pertaining to CSO discharges in another matter did not allege NMC violations, other than failure to prevent accumulations of floating debris and solids. (Complaint, *NRDC v. MWRD*, No. 1:11-cv-02937 (N.D. IL May 3, 2011), Dkt. No. 1, ¶¶ 28-33). Similarly, the Alliance's Complaint alleged floatables violations, but did not allege violations of other NMCs. (Alliance Complaint, Dkt. No. 48). The Alliance commenters' statement that the Consent Decree does not adequately address MWRD's violations of "CSO Law," as noted above, does not cite a specific law, regulation or permit requirement that is being violated. In any event, the NMCs are addressed in MWRD's NPDES Permits, as discussed below.

2. NMC Provisions in the CSO Policy and MWRD's NPDES Permits

The CSO Policy sets forth two courses of action for controlling CSOs and CSO impacts – the "nine minimum controls" and a CSO "long term control plan." NMCs "are technology-based actions or measures designed to reduce CSOs and their effects on receiving water quality."³⁴ The NMCs are controls that do not require significant engineering studies or major construction, and can be implemented in a relatively short period. (EPA, *Combined Sewer Overflows, Guidance for Nine Minimum Controls*, May 1995, at 1-7). Pursuant to the CSO Policy, permittees with CSOs should have submitted appropriate documentation demonstrating implementation of the NMCs no later than two years after the requirement to submit such

³⁴ EPA, *Combined Sewer Overflows, Guidance for Nine Minimum Controls*, May 1995, at 1-4, available at <http://www.epa.gov/npdes/pubs/owm0030.pdf>

documentation was included in an NPDES permit or other enforceable mechanism. (59 Fed. Reg. at 18,691). The CSO Policy states that implementation of the NMCs with appropriate documentation should be completed as soon as practicable but no later than January 1, 1997. (*Id.*). MWRD initially submitted information to IEPA in response to this provision of the CSO Policy in 1996. (Ex. 35, MWRD Letter to IEPA, October 31, 1996).

The CSO Policy states that “[a]ll permits for CSOs should require the nine minimum controls.” (59 Fed. Reg. at 18,695). MWRD’s NPDES Permits require MWRD to meet the NMCs as follows:

1. Proper operation and regular maintenance programs for the sewer systems and the CSOs – Special Conditions 10.4, 10.8
2. Maximum use of the collection system for storage – Special Condition 10.8
3. Review and modification of pretreatment requirements to assure CSO impacts are minimized – Special Condition 7.A.7
4. Maximization of flow to the POTW [publicly owned treatment works] for treatment – Special Conditions 10.5, 10.8
5. Prohibition of CSOs during dry weather – Special Conditions 10.1, 10.3
6. Control of solid and floatable materials in CSOs – Special Condition 10.8
7. Pollution prevention – Special Conditions 7.A.6, 7.A.7 and 10.6
8. Public notification to ensure that the public receives adequate notification of CSO occurrences and CSO impacts – Special Condition 10.12
9. Monitoring to effectively characterize CSO impacts and the efficacy of CSO controls – Special Conditions 10.10, 10.11

(Ex. 8, MWRD 2002 NPDES Permits).

The Governments did not include all of the permit requirements in the Consent Decree but rather focused the injunctive relief in the Consent Decree on claims alleged in the Complaint. Indeed, various other CSO settlements do not include specific NMC requirements, including many of the CSO settlements approvingly referenced by the commenters, and instead refer to compliance with NMC requirements in applicable NPDES permits or NMC programs developed pursuant to NPDES permits.³⁵ The NMCs are included in MWRD’s NPDES Permits as required by the CSO Policy.

³⁵ See *United States and Ohio v. Northeast Ohio Regional Sewer District*, *United States v. Metropolitan St. Louis Sewer District*, *United States and Indiana v. City of Indianapolis*, *United States and Indiana v. City of Ft. Wayne*, and *In the Matter of: City of Philadelphia*.

3. The Floatables Control Program in the Consent Decree

The Floatables Control Program in the Consent Decree requires MWRD to take additional actions to control floatable debris, with the purpose of improving MWRD's river cleanup operations.³⁶ Pursuant to the Floatables Control Program, MWRD must purchase two skimmer or trash collection boats to pick up floating debris in the local impacted waterways identified in the program. (Consent Decree App. B, at 3-4). MWRD must dispatch the boats in response to rain events that result in CSOs throughout the year, to the areas where CSOs are occurring. (*Id.* at 1). MWRD must dispatch the boats within 24 hours after conclusion of the rain event, unless unsafe or infeasible, in which case the deployment must resume as soon as it is safe and feasible. (*Id.*). MWRD must respond in a timely and targeted fashion to CSO events in order to maximize the efficacy of the skimmer boats.

Skimmer or trash collection boats are a commonly used and effective means to remove floatables that have been discharged into the waterways from CSOs or from other sources, such as windblown litter.³⁷ (Ex. 4, Aistars Decl. ¶ 14). As explained in EPA guidance, the NMC for control of solid and floatable materials in CSOs is "intended to reduce, if not eliminate, visible floatables and solids using relatively simple measures." (EPA, CSOs, Guidance for NMCs, May 1995, at 7-1).³⁸ According to the guidance, simple devices including baffles, screens, catch basin modifications, nets and racks can be used to remove coarse solids and floatables, and booms and skimmer boats can help remove floatables from the receiving water body. (*Id.*). In addition, measures such as street sweeping can prevent solids and floatables from entering the combined sewer system. (*Id.*).

MWRD has 37 CSO outfalls permitted in the current Calumet, North Side and Stickney NPDES Permits. The local satellite communities own over 300 CSO outfalls in the combined sewer system. Skimmer or trash collection boats are particularly advantageous in this case because

³⁶ MWRD's NPDES Permits contain requirements regarding floatables control including a CSO Operation and Maintenance Plan containing other actions related to floatables control. (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.8). Some of MWRD's CSO outfalls have baffles and the CSO pump stations have screens to capture some debris. Another floatables control, street sweeping, is a responsibility of the satellite communities as it is a typical city, rather than sewer district, function. Chicago, the largest community in MWRD's service area, operates a skimmer boat, employs nets at some outfalls, performs street sweeping to prevent floatables, and has modified catch basins to address this issue. See http://www.cityofchicago.org/city/en/depts/streets/provdrs/street/svcs/cleaning_the_chicagoriver.html; http://www.cityofchicago.org/content/dam/city/depts/doe/general/NaturalResourcesAndWaterConservation_PDFs/Water/ChicagoRiverAgendareduced.pdf; http://www.cityofchicago.org/city/en/depts/streets/provdrs/streets_san/svcs/street_sweeping.html; http://www.cityofchicago.org/city/en/depts/bldgs/supp_info/blocking_rainwaterandpreventingsewerbackup.html

³⁷ Skimmer boats have been used to pick up floatable materials in Milwaukee (see <http://v2.mmsd.com/NewsDetails.aspx>), New York City (see www.nyc.gov/html/dep/html/harborwater/float.shtml), Washington D.C. (see www.dcwater.com/education/cleaning_our_waterways.cfm), Passaic, New Jersey (see www.nj.gov/pvsc/rr/index.htm and www.trashskimmer.com/newspassaic2.htm) and Philadelphia (see http://www.phillyriverinfo.org/csoltcpu/csoltcp_update/pdf/debrissskimmingvesselfactsheet.pdf)

³⁸ This guidance can be found at <http://www.epa.gov/npdes/pubs/owm0030.pdf>

they effectively collect floatables on the waterways from all potential sources – the satellites’ CSOs, MWRD’s CSOs, runoff and windblown litter. (Ex. 4, Aistars Decl. ¶ 14).

Under the Floatables Control Program, MWRD must also, subject to required permits and necessary easements, install a containment boom downstream of the Westchester Pump Station on Addison Creek. (Consent Decree App. B, at 4). This location was selected as a good location for a containment boom for several reasons. There have been discharges from the Westchester Pump Station into Addison Creek and the flow volume from the Westchester Pump Station is not too excessive for collecting floatables in a containment boom. (Ex. 4, Aistars Decl. ¶ 15). In addition, it is on a river stretch that cannot be navigated by skimmer or trash collection boats and does not pose a hazard to navigation for other vessels for the same reason.³⁹

4. Other Floatables Controls Evaluated but not Selected

MWRD and the Governments separately reviewed and analyzed various methods to prevent, contain and remove floatables from CSO discharges in determining the adequacy of the solution proposed in the Consent Decree. Containment booms were considered at other locations and rejected due in part to the potential hazard to navigation on river stretches that have commercial or recreational traffic. MWRD previously installed a containment boom on Bubbly Creek to capture floatables from discharges from the Racine Avenue Pump Station. However, MWRD found that the containment boom did not work well. Due to the velocities during discharges, water flowed over and under the containment boom, and the boom collected few floatables. According to MWRD, the containment boom broke on at least one occasion due to strong currents. The logistical issues of maintaining a navigable river waterway system utilized by commercial and recreational vessels, such as many of the waterways in this instance, versus an estuary or bay, are an additional impediment to using various in stream controls for floatables, such as booms and nets. (Ex. 4, Aistars Decl. ¶ 16). The commenters also suggested the use of ballasted flocculation or swirl concentrators, technologies generally considered for CSO LTCPs rather than an NMC, due to the associated capital investment, construction and implementation periods.⁴⁰ Additionally, without a centralized point of collection of the various CSO flows, cost-effectiveness and feasibility of using CSO treatment technologies such as ballasted flocculation or swirl concentrators are considerably reduced. (*Id.*).

³⁹ See U.S. Coast Guard website, *Federally Navigable Waters by State*, USCG.mil, <http://www.uscg.mil/d9/D9Legal/water/illinois.pdf> (last visited April 14, 2013).

⁴⁰ See EPA, *Combined Sewer Overflows Guidance for Nine Minimum Controls*, May 1995, at 7-1, available at <http://www.epa.gov/npdes/pubs/owm0030.pdf>. See also, e.g., EPA Post Construction Monitoring Guidance, 44 (May 2012), available at http://www.epa.gov/npdes/pubs/final_cso_pccm_guidance.pdf

D. TARP System Performance Criteria

Post TARP completion requirements do not address violations alleged in the complaint. The Consent Decree does not require that TARP, once completed, not cause or contribute to WQS violations for dissolved oxygen or floatables nor does the Consent Decree require attainment of permit condition 10.1. Because the Consent Decree does not require MWRD to resolve the violations in the Complaint, the Consent Decree is inadequate, unreasonable and not compliant with the law. (Ex. 7-7, Alliance at 34-35).

Post TARP completion provisions fail to comply with the CSO policy and the EPA/DOJ 2003 Enforcement Memo (Ex. 7-7, Alliance at 36-38).

Response

The Governments' Complaint in this matter alleged that MWRD violated the following CSO provisions of its NPDES Permits: the prohibition on discharging pollutants into waters of the United States that cause or contribute to violations of applicable water quality standards for dissolved oxygen, solids and floatables, and the requirement to provide the equivalent of primary treatment for at least ten times the average dry weather flow for the design year. (Complaint, Dkt. No. 1, ¶¶ 65-67). The Consent Decree requires compliance with the CSO requirements of MWRD's NPDES Permits alleged to have been violated. Paragraph 34 of the Consent Decree requires that:

Upon initiating full operation of the Calumet TARP System and the Mainstream/Lower Des Plaines TARP System in accordance with Subparagraphs 16(e) and 17(g), respectively, any [remaining] CSO discharges shall comply with the CSO requirements of the then-effective Calumet, North Side, or Stickney NPDES Permit, as applicable, including all applicable water quality standards requirements incorporated therein.

(Consent Decree ¶ 34). MWRD's NPDES Permits include the requirements cited by the commenters - "discharges from the outfalls listed in [Special Condition 10, Authorization of Combined Sewer and Treatment Plant Discharges] shall not cause or contribute to violations of applicable water quality standards or cause use impairment in the receiving waters." (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.10). Since the Consent Decree requires that any remaining CSO discharges comply with the CSO requirements of the then effective permits, MWRD's CSOs must comply with the types of permit provisions cited by the commenters. The current permits, however, may not be the effective permits when Consent Decree Paragraph 34 applies.⁴¹

⁴¹ Although MWRD's NPDES Permits have an expiration date of February 28, 2007, they remain in effect pursuant to Illinois law until IEPA makes a final decision on MWRD's new permit applications.

It is a common practice to require compliance with the permit that will be in effect when injunctive relief will be completed after expiration of a current permit. Otherwise, a consent decree might require that a permittee comply with an expired permit that is no longer in effect. Requiring compliance in a consent decree with a permit no longer in effect and simultaneously requiring compliance with a renewed effective permit that has different terms, creates potential conflict and confusion. Here, the Consent Decree ensures that whatever specific permit requirements are in effect at that time, MWRD must comply with all CSO requirements, including all applicable water quality standards requirements incorporated in such permits.

TARP System performance criteria are ill-defined, vague, difficult to enforce and discharges will “continue to plague the CAWS [Chicago Area Waterway System] and threaten Lake Michigan for decades after 2030.” After completion of the reservoirs, if the tunnels are full, CSO outfalls are allowed to occur. There is no definition for “full” with respect to the tunnels and thus MWRD is not being held to a clear, quantified requirement that it will maximize use of its tunnel system to avoid CSOs. There is no express requirement that MWRD treat or control floatables with respect to any full tunnel CSOs. (Ex. 7-7, Alliance at 33-34).

Response

Although the Consent Decree’s ultimate performance criteria are the requirements to comply with all CSO provisions in MWRD’s then-effective NPDES Permits, the Consent Decree also includes performance criteria requiring MWRD to maximize collection, storage and treatment of combined flows in operating TARP. The comment above refers to Paragraphs 28(a) and 29(a) of the Consent Decree in Section VIII, TARP Performance Criteria. Paragraph 29(a) states:

29. Upon completion of construction of the McCook Reservoir and initiation of full operation of the Mainstream/Lower Des Plaines TARP System in accordance with Paragraph 17, MWRD shall operate and maintain the system such that:

a. All flows that enter the Mainstream/Lower Des Plaines TARP tunnels and McCook Reservoir are conveyed to the Stickney WRP for full treatment in accordance with the then current Stickney NPDES Permit, including the bypass provisions in that permit; provided, however, that flow may leave the Mainstream Tunnel through Outfall No. 042 on the Lawrence Avenue branch tunnel when the Addison to Wilmette Tunnel (Mainstream) is full; or through Outfall No. 189 on the Nashville Avenue branch tunnel and/or Outfall No. 146 on the Southwest 13A branch tunnel when the 59th to Central Tunnel (Mainstream) is full, without first being conveyed to the Stickney WRP for full treatment as described in Appendix A. Notwithstanding the above, Outfalls No. 042, 189 and 146 remain subject to the terms of the then current North Side and Stickney NPDES Permits, as applicable.

(Consent Decree ¶ 29(a)). The terms in Paragraph 29 set forth the performance criteria for maximizing the flow of combined sanitary and stormwater flows to MWRD's North Side and Stickney WRPs. Paragraph 29(a) requires that MWRD convey all flows entering the Mainstream/Lower Des Plaines tunnels to the McCook Reservoir and then subsequently to the Stickney WRP for full treatment. (*Id.*). There is a distinction in Paragraph 29(a) for three CSO outfalls located on three branch tunnels - the Lawrence Avenue branch tunnel, the Nashville Avenue branch tunnel and the Southwest 13A branch tunnel. Based upon information from MWRD, those branch tunnels were early prototype tunnels and are designed differently from the rest of the tunnels in the Mainstream TARP tunnel system. (Consent Decree App. A, at 4). Unlike the other tunnels, flows in those branch tunnels may, when their sections of the Mainstream tunnel are full, discharge through Outfalls No. 042, 189 and 146. (Consent Decree ¶ 29(a)). In response to the comment that there is no definition for "full" with respect to the tunnels, the meaning of the word "full" in this context is the standard definition – "containing all that is possible or normal < a full bucket >." (Riverside Publishing Co., *Webster's II New Riverside University Dictionary* (1984)).

The distinction in Paragraph 29(a) for Outfalls No. 042, 189 and 146 does not allow CSOs to occur.⁴² Instead, this exception acknowledges that there are three CSO outfalls in the Mainstream tunnel system that operate differently from the other CSO outfalls. If a CSO discharge occurs at any of those outfalls after the Mainstream/Lower Des Plaines TARP System is completed, that discharge will be subject to the CSO requirements of the applicable NPDES Permit, including applicable water quality standards requirements contained therein, just like any other CSO discharge. This is stated clearly at the end of Paragraph 29(a) – "Outfalls No. 042, 189 and 146 remain subject to the terms of the then current North Side and Stickney NPDES Permits, as applicable," and the outfall remains subject to the same requirements identified in Paragraph 34 of the Consent Decree. (Consent Decree ¶¶ 29(a), 34). Since Outfalls No. 042, 189 and 146 are subject to the same permit requirements as any other MWRD CSO outfall, those outfalls are also subject to the same floatables control requirements.

Paragraph 28(a) contains the identical provisions for the Calumet TARP System, as applicable to Outfall No. 158 located on the Calumet 18EA branch tunnel. (Consent Decree ¶ 28(a)). Just as with Outfalls No. 042, 189 and 146, flows from Outfall No. 158 may discharge when full and therefore are distinguished in Paragraph 28(a). (*Id.*; see also Consent Decree App. A, at 10).

Pursuant to the Consent Decree, MWRD must provide treatment of the 'maximum practical flow.' MWRD is excused from operating at its maximum design capacity and is not prevented

⁴² The Alliance commenters stated that "[a]fter completion of the [reservoirs], if the tunnels are full, CSO outfalls are allowed to occur." EPA assumes that the word "outfalls" is a typographical error and that the commenters meant "discharges" since the outfalls are fixed permanent conduits.

from delaying maintenance or technological improvements to perform beyond any capacity constraints. (Ex. 7-7, Alliance at 33).

Response

Paragraph 28(b) of the Consent Decree requires that “[d]uring all precipitation events, MWRD shall accept and provide full treatment of the Maximum Practical Flow at the Calumet WRP.” (Consent Decree ¶ 28(b)). Paragraph 29(b) contains the same requirements for the Mainstream/Lower Des Plaines TARP System. (*Id.* at ¶ 29(b)). “Maximum Practical Flow” is defined as “the maximum flow accounting for all hydraulic and hydrologic factors that can pass through the Calumet WRP, North Side WRP or Stickney WRP within the then existing capacity constraints of the applicable WRP and receive full treatment in compliance with the NPDES Permit(s) for the WRP(s) receiving the flow.” (*Id.* at ¶ 8(u)). This definition is derived from EPA guidance issued in conjunction with the CSO Policy. EPA’s *Combined Sewer Overflows Guidance for Permit Writers* provides the following permit language for maximizing flow to the treatment plant: “The permittee shall operate the POTW treatment plant at maximum treatable flow during wet weather flow conditions/events and deliver all flows to the treatment plant within the constraints of the capacity of the treatment plant.”⁴³ The Consent Decree definition and the EPA guidance from which it is derived take into account that wastewater treatment plants cannot sustain the maximum hourly flow for an unlimited period of time due to potential adverse impacts to the biological treatment process and settling ability of the solids, resulting in a greater potential for “washout” of the biological treatment process. (Ex. 4, Aistars Decl.¶ 8).

MWRD’s NPDES Permits include similar requirements. The North Side NPDES Permit states that the CSO outfall at the North Branch Pumping Station “shall not be utilized until the collection system and treatment facility is receiving its maximum practical flow.” (Ex. 8, North Side WRP 2002 NPDES Permit, at 3). That permit also requires that “[t]he treatment system shall be operated and maintained to maximize treatment of wastewater flows.” (*Id.* at S.C. 10.5). In addition, that permit requires that MWRD develop and maintain a CSO operational and maintenance plan which includes mechanisms and specific procedures to ensure “[t]reatment and collection systems operations to maximize treatment.” (*Id.* at S.C. 10.8g). MWRD’s Calumet and Stickney NPDES Permits include the same requirements for their CSO outfalls. (See Ex. 8, Calumet WRP and Stickney WRP 2002 NPDES Permits, at 3, S.C. 10.5, 10.8g). MWRD’s NPDES Permits require that MWRD maximize treatment of wastewater flows, and do not require treatment of the design maximum flow as a specific treatment requirement.

The CSO Policy provides that “[t]he revised operation and maintenance program should maximize the removal of pollutants during and after each precipitation event using all available

⁴³ EPA, *Combined Sewer Overflows, Guidance for Permit Writers* 4-12, A-9, (Aug. 1995), available at <http://cfpub.epa.gov/npdes/cso/guidedocs.cfm>

facilities within the collection and treatment system.” (59 Fed. Reg. at 18,693). The CSO Policy further provides that the operational plan should ensure that any excess flows receive “treatment to the greatest extent practicable.” (*Id.*). Wastewater treatment plants are composed of many treatment units, which may not all be available or in use at all times. For instance, during maintenance or capital improvement projects some equipment must be taken out of service temporarily. However, the Consent Decree requires that for all days on which a CSO in the TARP system occurs, MWRD must identify all treatment units not in service at the applicable WRP, including the dates and reasons why the unit(s) was out of service and report that information to EPA. (Consent Decree ¶ 31). EPA can use that information to determine whether MWRD treated the maximum practical flow and maximized treatment at the WRPs. Thus, while adhering to operational requirements, wastewater treatment plant operators must treat as much flow as possible during wet weather to avoid CSOs and associated potential CWA violations.

Treatment is to be maximized at the WRPs according to an operational plan not yet submitted or approved by the Governments, nor required to be submitted for public review or comments. (Ex. 7-7, Alliance at 33).

Response

The comment above is in reference to Paragraph 28(c) of the Consent Decree. Paragraph 28(c) requires that:

Treatment at the Calumet WRP and capture of combined sewage in the Calumet TARP System is maximized at all times, consistent with the TARP Operational Plan approved by Illinois EPA and in accordance with the then current Calumet NPDES Permit (at the time the proposed Operational Plan is submitted to Illinois EPA for approval, MWRD must provide a copy of the proposed plan to the United States).

(Consent Decree ¶ 28(c)). MWRD has developed and submitted TARP operational plans pursuant to MWRD’s NPDES Permits. TARP operational plans were first required in MWRD’s 1987 and 1988 NPDES permits. (*See, e.g.*, Ex. 31, Calumet WRP and North Side WRP 1987-88 NPDES Permits, S.C. 12). MWRD submitted a TARP operational plan to IEPA in September 1989.⁴⁴ (Ex. 32, MWRD TARP Operational Plan, Sept. 1989). MWRD’s NPDES Permits require that MWRD develop and submit to IEPA a CSO operational and maintenance (O&M) plan.⁴⁵ (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.8). The CSO O&M plan requirements include provisions for complying with NMCs and also include submittal of the TARP

⁴⁴ MWRD’s letter to IEPA, dated September 26, 1989, indicates that MWRD also sent the TARP operational plan to IEPA the year before.

⁴⁵ The draft NPDES permits (issued for public notice in 2009) require that MWRD review the CSO O&M plans at least annually and revise the plans if necessary employing a process that actively involves the affected communities. (MWRD draft permits, S.C. 8.10, *available at* <http://www.epa.state.il.us/public-notice/2009>). Additionally, the CSO O&M plan must be made available to the public. (*Id.*).

operational plan. (*Id.*). After MWRD's initial submittal of the CSO O&M Plan to IEPA, the permits required that MWRD hold a public information meeting and then provide a summary of significant issues raised, with MWRD's response to each issue. (*Id.*) MWRD provided CSO O&M Plans and TARP operational plans to IEPA pursuant to requirements in MWRD's NPDES Permits.⁴⁶

MWRD must revise the TARP Operational Plans periodically as more components come on line and as experience with the TARP Systems leads to operational changes. MWRD must revise the TARP Operational Plans to include the performance criteria required in the Consent Decree, after entry of the Consent Decree. (Consent Decree ¶¶ 28(c) and 29(c)).

Dewatering the TARP system is only to occur according to a maximum practical pumping rate, which incorporates then existing capacity constraints rather than requiring operation at maximum design specifications or better. This makes the pumping rate a virtually unenforceable pseudo-requirement. (Ex. 7-7, Alliance at 33).

Response

The comment above is in reference to Paragraphs 28(d) and 29(d) of the Consent Decree. Paragraph 29(d) states that:

During all times when the Mainstream/Lower Des Plaines TARP tunnels or McCook Reservoir contain combined sewage in excess of any Retained Amount, MWRD shall pump combined sewage from the Mainstream Pump Station at the Maximum Practical Pumping Rate subject to the Maximum Practical Flow capable of receiving full treatment at the Stickney WRP.

(Consent Decree ¶ 29(d)). Paragraph 28(d) of the Consent Decree contains the identical provision for the Calumet TARP tunnels. (*Id.* at ¶ 28(d)). "Maximum Practical Pumping Rate" is defined in the Consent Decree as "the maximum flow that can be delivered from TARP to the Calumet WRP or Stickney WRP within the constraints of the pump capacities and good operating practice of the Calumet TARP Pumping Station pumps and the Mainstream Pump Station pumps and without exceeding the relevant WRP's Maximum Practical Flow." (*Id.* at ¶ 8(v)).

Paragraphs 28(d) and 29(d) require MWRD to continually maximize movement of flow from TARP to the WRPs for treatment, while allowing the necessary operational flexibility to manage

⁴⁶ The Alliance commented on MWRD's March 2006 draft CSO O&M plans for the Stickney, North Side and Calumet WRPs, which include TARP operational plans, and later met with MWRD to discuss the O&M plans. (Ex. 36, Letter from Dale Bryson, Alliance for the Great Lakes, to Toby Frevert, IEPA, undated). MWRD subsequently revised the CSO O&M plans pursuant to those discussions, in January 2007. (Ex. 37, MWRD Letter to IEPA, Jan. 9, 2007).

the system safely and efficiently. (*Id.* at ¶¶ 28(d), 29(d); Ex. 4, Aistars Decl. ¶ 9). The commenters' suggestion to require that MWRD operate its pumps at "maximum design specifications or better" at all times is not a requirement in MWRD's NPDES permits. It is also not a reasonably achievable standard or practical from an engineering perspective. (Ex. 4, Aistars Decl. ¶ 10). Paragraphs 28(d) and 29(d) essentially require MWRD to operate the pumps at maximum rates, recognizing the reality that such operation is not possible at all times. (*Id.*).

The filling and pumping out of TARP is a dynamic situation that generally changes frequently during a rain event. (*Id.*). The hydraulic capacity of the TARP pump back systems can be affected by whether there is enough flow in the system to necessitate maximum pumping, and the number of pumps and pumping capacity available for service at a particular time. (*Id.*). Another important factor is whether the combined capacity of TARP pumps available matches the available plant capacity. (*Id.*). For example, the TARP Mainstream Pump Station pumps operate at constant speeds to dewater the Mainstream tunnels by pumping to the Stickney WRP. The Stickney WRP, therefore, must have the capacity available to receive the flow pumped by the Mainstream Pump Station for MWRD to be able to send that flow from the TARP Mainstream Pump Station to the WRP. (*Id.*). The same scenario applies to TARP flows pumped to the Calumet WRP. (*Id.*).

Maximum pumping rates and maximizing flow for treatment are affected by changing conditions requiring plant operators to maintain plant and treatment performance to meet NPDES Permit discharge limits as well as operating the TARP system safely and efficiently. (*Id.*). If MWRD does not maximize TARP pump back, less storage capacity will be available in TARP to continue to accept wet weather flows. (*Id.*). If CSOs occur as a result, MWRD will be subject to stipulated penalties. (Consent Decree ¶ 52(c)). In addition, any such CSOs will be subject to the requirements in MWRD's (or the satellites') NPDES Permits, including applicable water quality standards requirements. (*Id.* at ¶ 34).

Section VIII of the Consent Decree allows a CSO to occur if, in the exercise of reasonable judgment by a trained MWRD operator, a transient event occurs or would occur. The Consent Decree does not require MWRD to take any action to try to manage its system to minimize transient events, does not impose penalties for causing CSOs as a result of transient events and does not require MWRD to perform any screening or other treatment of the CSOs as a result of the transient event. The unlimited transient event discharges apparently would occur without any required treatment of the discharge or floatables control and would occur whenever a single MWRD operator believes that the water pressure in the tunnel could have an unspecified "harm" on MWRD's facilities. The real harm to the CAWS and Lake Michigan, and the people who use them, is not mentioned as a factor in the decision as to whether to allow these CSOs to occur. (Ex. 7-7, Alliance at 34).

Response

The comment above pertains to provisions of the Consent Decree that take into account “transient events” in the TARP tunnels. Paragraph 28(e) in the TARP Performance Criteria section of the Consent Decree states that:

All Calumet TARP drop shaft control structures (inlet sluice gates) must be maintained in the 100 Percent Equivalent Open position to receive maximum flow into the Calumet TARP tunnels and Thornton Composite Reservoir until the Thornton Composite Reservoir is Full or Transient Events would occur if the sluice gates remained in the 100 Percent Equivalent Open position.

(Consent Decree ¶ 28(e)). Paragraph 28(g) of the Consent Decree provides:

If a Transient Event occurs or would occur if the sluice gates remained in the 100 Percent Equivalent Open position, MWRD may close the minimum number of sluice gates necessary in the exercise of reasonable judgment by a trained operator in possession of the information available to the MWRD operator at the time to avoid or minimize Transient Events. If MWRD’s closure of sluice gates results in the discharge of combined sewage from any CSO Outfall in the Calumet TARP System, then MWRD shall submit a report to both Illinois EPA and EPA pursuant to Section XII (Reporting Requirements).

(*Id.* at ¶ 28(g)). “Transient Event” is defined as:

a pressure differential in a TARP tunnel that necessitates closure or partial closure of one or more sluice gates prior to TARP reaching full capacity, in order to prevent harm to people, property, or MWRD facilities. Transient Events can result from uneven filling, significant hydraulic head differential, wave action, valve closures or openings, backflow, water dams or water hammer, and variations in tunnel geometry, including without limitation a bifurcation, variation in diameter or tunnel end.

(*Id.* at ¶ 8(jj)).

Transient events are caused by pressure differences when a tunnel is filling too rapidly, which can have very negative human safety and operational impacts. (Ex. 4, Aistars Decl. ¶ 11). While actions can be taken to minimize or reduce the occurrence of transient events in the tunnel system, it is not possible to eliminate them. (*Id.*).

The occurrence of transient events in and of themselves does not cause CSOs. (*Id.* at ¶ 12). Early in the operation of TARP, MWRD generally kept all of the TARP sluice gates open to receive flow from the sewers until the tunnels were full. However, that caused uncontrolled filling of the tunnels, which led to transient events. (*Id.*). MWRD’s engineering studies and

modeling have provided a better understanding of the conditions leading to transient events and how transient events could be reduced by controlling tunnel filling through operation of the TARP sluice gates that connect the sewer interceptor system to TARP. (*Id.*). Closing sluice gates to TARP at certain points helps to control the flow into TARP, thereby reducing transient events. Flows still travelling in the interceptor sewer to a closed TARP connection will not be accepted and will overflow through the nearby CSO outfall. (*Id.*).

The Consent Decree's transient event provisions are engineering solutions intended to maximize the flow to TARP safely while preventing and/or minimizing the impacts of transient events. To that end, the Consent Decree includes a number of provisions that require MWRD to take action to minimize transient events. Paragraphs 28(e) and 29(e) of the Consent Decree require that MWRD maintain TARP sluice gates in the 100 percent equivalent open position until the applicable reservoir is full or a transient event would occur. (Consent Decree ¶¶ 28(e), 29(e)). Closure of the gates, or some of the gates, in the appropriate situation helps to minimize the possibility of transient events. (Ex. 4, Aistars Decl. ¶ 13). Paragraph 28(g) prescribes criteria MWRD must meet to close a sluice gate. If closure of a sluice gate due to a transient event leads to a CSO discharge, MWRD must submit a report to EPA and IEPA providing:

(A) the location, estimated volume and duration of the combined sewage discharge; (B) an analysis of the cause of the discharge including triggering criteria and supporting documentation used by the TARP operators to initiate sluice gate closure, such as precipitation data, operator logs, pump-back rates, TARP hydraulic grade line measurements, and WRP flows; and (C) an analysis of each Transient Event to *identify any operational modifications that could prevent or mitigate future similar events, which MWRD shall incorporate into its TARP Operational Plan;*

(Consent Decree ¶ 44(b)(i) (emphasis added)). Therefore, MWRD must incorporate into its TARP operational plan any operational modifications identified in analyzing transient events to help prevent or mitigate such events in the future.

Although the comment above states that “transient event discharges would occur without any required treatment of the discharge or floatables control,” CSOs resulting from sluice gate closures due to transient events are subject to the same floatables control requirements as all other CSOs pursuant to the Floatables Control Program in the Consent Decree. Further, under the Consent Decree, all CSOs remain subject to the CSO requirements in MWRD's Permits, including applicable water quality standards requirements. (*Id.* at ¶ 34).

The CSO Policy requires that a permittee conduct modeling to establish numerically what its proposed plan is projected to achieve. Regulatory agencies are then required to mandate achievement of these numeric goals. The Consent Decree is devoid of such requirements. (Ex. 7-1, NRDC at 3).

Response

MWRD developed and commenced construction of TARP prior to the 1994 CSO Policy and therefore conducted the early TARP planning before the CSO Policy was issued. As discussed above, Section I.C.2 of the CSO Policy provides that permittees such as MWRD, that had substantially developed or were implementing a CSO control program prior to issuance of the CSO Policy, should complete those facilities without further planning activities otherwise expected by the CSO Policy.⁴⁷ (59 Fed. Reg. at 18,690).

E. Post Construction Monitoring for Compliance

The CSO Policy requires that the LTCP include a detailed post-construction water quality monitoring program to ensure that, upon completion, the control measures have achieved compliance with WQS as required by the CWA. The Consent Decree fails to include the required monitoring plan. (Ex. 7-1, NRDC at 32).

Almost all other CSO consent decrees contain detailed monitoring plans as an enforceable requirement. (Ex. 7-7, Alliance at 35; see also, Ex. 7-1, NRDC at 32, 59).

MWRD's post construction monitoring requirements are not tied to minimum legal requirements. The post construction monitoring plan allows MWRD to select any WQS parameters it wishes for its post construction pollution monitoring. Although the Government must approve the monitoring plan, there are no parameters for such approval. (Ex. 7-7, Alliance at 35; Ex. 7-1, NRDC at 32).

Response

The Consent Decree requires MWRD to perform extensive and comprehensive post-construction monitoring and MWRD's proposed monitoring plans will be subject to EPA and IEPA review

⁴⁷ For permittees who are required to complete further planning activities under Section I.C., the CSO Policy states the following with regard to modeling in developing an LTCP:

Modeling of a sewer system is recognized as a valuable tool for predicting sewer system response to various wet weather events and assessing water quality impacts when evaluating different control strategies and alternatives. EPA supports the proper and effective use of models, where appropriate, in the evaluation of the nine minimum controls and the development of the long-term CSO control plan.

(59 Fed. Reg. at 18,692). Although the CSO Policy supports the use of models, it does not require them. MWRD and its contractors have conducted various modeling of TARP for the purpose of optimizing TARP performance but not the specific type of modeling that would result in the mandated numeric requirements suggested by the commenters.

and approval. As background, the post-construction compliance monitoring program provisions of the CSO Policy state the following:

The selected CSO controls should include a post-construction water quality monitoring program adequate to verify compliance with water quality standards and protection of designated uses as well as to ascertain the effectiveness of CSO controls. This water quality compliance monitoring program should include a plan to be approved by the NPDES authority that details the monitoring protocols to be followed, including the necessary effluent and ambient monitoring and, where appropriate, other monitoring protocols such as biological assessments, whole effluent toxicity testing, and sediment sampling.

(59 Fed. Reg. at 18,694). The CSO Policy does not specifically require inclusion of a detailed post-construction monitoring program in the LTCP or in a consent decree. Consistent with the CSO Policy, the Consent Decree requires MWRD to submit a detailed monitoring plan for approval. Pursuant to the proposed Consent Decree's post-construction monitoring program, MWRD must submit a post-construction monitoring plan to EPA and IEPA for approval within one year from the effective date of the Consent Decree for the Calumet TARP system. (Consent Decree ¶ 35(a)). The same requirements apply to the Mainstream/Lower Des Plaines TARP System, except that the plan is due within five years from the effective date of the Consent Decree because the final completion date for Stage 2 of the McCook Reservoir is later than the completion date for the Thornton Composite Reservoir. (*Id.* at ¶ 35(b)). The Consent Decree requires that the plans include the following elements:

- CSO outfall monitoring location, frequency, duration and estimated volume;
- Identification of water quality standards parameters of concern;
- In stream water quality monitoring relating to applicable water quality standards;⁴⁸
- Determination of whether MWRD's CSOs are in compliance with the then-effective Calumet, North Side and Stickney NPDES Permits, including applicable water quality standards incorporated therein; and
- The minimum duration of such monitoring.

(*Id.* at ¶¶ 35(a), 35(b)). Thus, there are specific procedural and substantive parameters that MWRD must meet for EPA and IEPA approval of the post-construction monitoring plans.

After approval of the post-construction monitoring plans and subsequent completion of the Thornton Composite and McCook Reservoirs, MWRD is required to implement the approved plans. Within six months after the end of the monitoring specified in the applicable plan, MWRD must submit a final post-construction monitoring report for each of the TARP systems to

⁴⁸ MWRD currently conducts in stream water quality monitoring and CSO monitoring pursuant to its NPDES Permits. (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.10 and 10.11). The water quality monitoring includes monitoring of 67 water quality parameters, on a regular basis, the results of which are summarized in an annual report to IEPA. These annual reports, M&R Data and Reports, are available to the public at www.mwr.org.

EPA and IEPA for approval. The final monitoring report must include the following information: description of the waterways and TARP system being evaluated; CSO Outfall monitoring results for frequency, duration and estimated volume of such CSOs; and water quality monitoring results, including an analysis of the impact to water quality from CSO Outfalls in the immediate vicinity of those CSOs. (*Id.* at ¶ 36). Specifically, that report provides the mechanism through which EPA and IEPA can evaluate the efficacy of MWRD's CSO controls.⁴⁹

F. Termination of the Consent Decree

With respect to each reservoir, the Consent Decree will be terminated after one year of satisfactory compliance with the post-completion, non-quantified performance criteria and undefined monitoring plan. Thus, after decades of spewing raw sewage into our waterways, the Government's enforcement action requires only one year of arguably compliant control of CSO discharges. (Ex. 7-7, Alliance at 34).

Response

The Consent Decree's main objective is to bring MWRD into compliance with the CSO provisions of its NPDES Permits, pursuant to the CWA. (Consent Decree ¶ 7). To that end, the Consent Decree will remain in effect until MWRD has maintained satisfactory compliance with, among other things, the requirement that any CSOs occurring following completion of TARP comply with the CSO-related provisions of MWRD's then-effective NPDES Permits, including water quality standards requirements. A one-year period of compliance with the terms of a consent decree is standard for termination of most CSO consent decrees, including some of the consent decrees cited by the commenters. Nonetheless, the proposed Consent Decree in this case will have a much longer compliance period, as explained below. In addition, notably, if the Consent Decree is entered in 2013, by 2033 it will have been in effect for 20 years.

Section VIII, TARP System Performance Criteria, delineates the Consent Decree TARP performance criteria required after TARP is completed and fully operational, which is one year after the reservoir has been completed and initially placed in operation. (*Id.* at ¶¶ 28, 29). MWRD must then demonstrate compliance with the performance criteria that include requirements to maximize flow and treatment for one year. (*Id.* at ¶ 33). The reservoir will have been in operation for one year at the start of the compliance period, resulting in a two year period

⁴⁹ MWRD's NPDES Permits also include a post-construction monitoring provision as follows: "Within six months of the completion of TARP, the Permittee shall develop and submit to IEPA at least two copies of a plan to determine whether or not the CSOs in the TARP service area have the potential to cause or contribute to either violations of applicable water quality standards or use impairment in the Chicago area waterways. This plan shall be implemented within six months of IEPA approval, or such other date as contained in the IEPA approval letter." (Ex. 8, MWRD 2002 NPDES Permits, S.C. 10.10).

to observe TARP's performance. These dates will apply much earlier for the Thornton Composite Reservoir in the Calumet TARP System since that system will be completed sooner, thus providing information that may be applied to the Mainstream/Lower Des Plaines TARP System's performance. (MWRD will also be gathering and reporting information on the operation of Stage 1 of the McCook Reservoir prior to completion of Stage 2, pursuant to the ongoing CSO monitoring required in MWRD's NPDES Permits.)

Paragraph 34 of the Consent Decree requires that upon full operation of the Calumet and Mainstream/Lower Des Plaines TARP Systems, respectively, any remaining CSO discharges must comply with the CSO requirements of the then-effective permits, including all applicable water quality standards requirements incorporated therein. (*Id.* at ¶ 34). Pursuant to Consent Decree Paragraphs 94(b) and 95(b), MWRD must, among other requirements, maintain satisfactory compliance with Section VIII TARP System Performance Criteria, including Paragraph 34, for one year, a period of compliance required in many, if not most, CSO Consent Decrees. (*Id.* at ¶¶ 94(b), 95(b)).

While the TARP performance criteria compliance period is running, MWRD will simultaneously conduct post-construction monitoring pursuant to an approved post-construction monitoring plan, to evaluate any remaining CSO discharges and the water quality of the receiving stream. (*Id.* at ¶ 35(d)). The duration of that monitoring will be determined by the Governments' approval of the plan, a process to take place pursuant to the Consent Decree before the reservoirs are completed. (*Id.* at ¶¶ 35(a) and (b)). Although not specified in the Consent Decree, EPA typically requires a minimum monitoring period of one year to observe operation of a LTCP in all four seasons. As with the performance criteria period, the post-construction monitoring begins upon full operation of the reservoir, which is one year after completion and initial operation, thereby creating a minimum two year observation period.

Within six months after the end of the post-construction monitoring period, MWRD must submit a final post-construction monitoring report for each of the TARP systems. (*Id.* at ¶ 36(a)). At that point, the applicable reservoir will have been completed and on line for at least 2.5 years. After reviewing that report, if the Governments find that MWRD's CSOs are violating CSO requirements of applicable NPDES Permits, including water quality standards requirements, EPA shall convey that finding in writing to MWRD. (*Id.* at ¶ 36(b)). Upon receipt of such a finding, MWRD must submit a plan identifying proposed compliance alternatives, actions and a schedule for implementation to the Governments for approval pursuant to Paragraph 36(c) of the Consent Decree. (*Id.* at ¶ 36(c)). If the plan is approved and MWRD has met all other requirements to terminate the Consent Decree, the applicable reservoir will have been on line for at least 3 years, not including the Governments' time to review the final post-construction monitoring report and any subsequent compliance plan.

Any remaining CSO discharges after completion of the TARP systems will be closely monitored, evaluated and subject to CWA compliance. Moreover, under any scenario, the Consent Decree will not terminate within one year of completion and full operation of either TARP system. In any event and more importantly, the Consent Decree will not terminate unless and until MWRD demonstrates that it has maintained satisfactory compliance for at least one year with the requirement that any remaining CSOs comply with the CSO-related provisions of MWRD's then-effective NPDES Permits, including water quality standards requirements. Further, MWRD must still comply with its permits and the CWA, even after the Consent Decree is terminated.

G. MWRD's Green Infrastructure Program in the Consent Decree

The term "infrastructure" generally means the "system of public works of a country, state or region."⁵⁰ "Gray" infrastructure in the context of CSO cases refers to engineered structural control practices to control CSO discharges, such as tunnel systems, storage tanks, sewer systems, wastewater treatment plants and pump stations. In contrast, green infrastructure refers to practices to infiltrate, evapotranspire, store and reuse rain water. Green infrastructure, generally speaking, uses vegetation and soil or on-site detention such as rain barrels or cisterns, to manage some rainwater where it falls.⁵¹ Implementing green infrastructure practices may reduce the volume of stormwater draining into a sewer system from rain events.

The Green Infrastructure Program as set forth in Appendix E of the Consent Decree will require MWRD to: (a) complete green infrastructure projects that provide a minimum of 10 million gallons of design retention capacity for precipitation in an individual storm; (b) implement additional green infrastructure measures in the event MWRD successfully invokes the contingency provisions of the Consent Decree to extend the schedule for implementing TARP; (c) implement a comprehensive land use policy for MWRD-owned land that will, *inter alia*, provide for certain incentives for private lessees and requirements for public lessees to implement green infrastructure measures on such land; and (d) distribute 15,000 rain barrels. EPA has estimated the cost of implementing the Green Infrastructure Program to be between \$25 million and \$50 million. The purpose of the Green Infrastructure Program is to reduce CSO discharges, localized flooding and stormwater impacts, as well as to increase acceptance of and investment in green infrastructure measures within MWRD's service area.

EPA strongly supports the use of green infrastructure to manage wet weather. As NRDC commenters noted, EPA has expressed that support in several memoranda issued during the last

⁵⁰ See <http://www.merriam-webster.com/dictionary/infrastructure>

⁵¹ The Consent Decree defines green infrastructure as "the range of stormwater control measures that use plant/soil systems, permeable pavement, stormwater harvest and reuse, or native landscaping to store, infiltrate, and/or evapotranspire stormwater and reduce flows to the sewer systems or to surface waters." (Consent Decree App. E, at 1).

five years.⁵² (Ex. 7-1, NRDC at 44). Thus, although MWRD's LTCP approved in 1995 does not include a green infrastructure component, the Consent Decree does.

1. The Amount of Green Infrastructure Retention Capacity Required

I have learned that measures to design and implement green infrastructure projects are less adequate than what have been set in other cities under similar consent decrees. Getting TARP fully operational and stepping up green infrastructure projects will stem costly flooding and provide other benefits to the metropolitan area. As such these projects should be viewed as wise investments, not costly projects. I request that these projects be given the priority they deserve. (Ex. 7-6, M. Sinner).

The Green Infrastructure Program in the Consent Decree achieves only minimal stormwater retention as compared to the comparable LTCPs and what could be achieved by MWRD. (Ex. 7-1, NRDC at 56).

The green infrastructure implementation required under the Consent Decree is a pale echo of what is being routinely implemented and achieved throughout the nation. (Ex. 7-1, NRDC at 44).

Modeling performed by NRDC's consultant determined that green infrastructure measures such as 6 ft. gravel trenches implemented systematically on a wide scale along both sides of streets, with 137 miles of Chicago streets reconstructed annually, would add 130 million gallons storage capacity per year, or 1.9 billion gallons over the course of 15 years. (Ex. 7-1, NRDC at 44, 56-57).

I'd like to see more green infrastructure. (Ex. 7-9, C. Hodak).

I back the Friends of the Chicago River's request that you improve our green infrastructure. (Ex. 7-8, J. Roche).

I hope that you will work toward increasing the green infrastructure that is part of the Consent Decree. (Ex. 7-3, H. Saunders).

The proposed green infrastructure improvements will certainly correct the overflow of stormwater when they are implemented. The onsite drainage will lessen the surface water and improve the quality as well as replenish the aquifers. Can this be accomplished in the next decade? (Ex. 7-10, K. Armstrong).

⁵² Available at http://water.epa.gov/infrastructure/greeninfrastructure/gi_support.cfm#policymemos

Response

MWRD's LTCP providing retention and treatment of combined sanitary and storm flows is TARP. This \$3 billion program includes extensive "gray infrastructure" control measures to capture, store and treat wet weather flows. The green infrastructure component of the Consent Decree supplements the gray infrastructure control measures in TARP, with the stated purpose of reducing CSO discharges, localized flooding and stormwater impacts, as well as to increase acceptance of and investment in green infrastructure measures within MWRD's service area. (Consent Decree App. E, at 1). The MWRD green infrastructure program is intended to reduce stormwater runoff to the sewer system, as opposed to controlling such runoff already in the sewer system, thus augmenting TARP's purpose of reducing flooding and CSOs. Both TARP and green infrastructure are given priority by requiring expeditious completion of the projects in the proposed Consent Decree.

Two commenters unfavorably compare the MWRD Consent Decree with CSO settlements for other cities. Some of the other cities commenters suggest as comparisons include green infrastructure in settlements as required by their more recently adopted LTCPs. Two of the comparison cities, New York City and Philadelphia, are implementing green infrastructure practices largely in lieu of gray infrastructure.⁵³ New York City's plan is a hybrid approach including gray and green infrastructure. According to Philadelphia's LTCP, it is the first city to propose adoption of a green stormwater approach as the foundation for compliance with the CSO Policy. (*Supplemental Documentation in Support of Philadelphia's CSO LTCP Update*, April 2011, at 23).⁵⁴ MWRD's LTCP, TARP, which will capture and store wet weather flows, is fundamentally different from New York City's and Philadelphia's LTCPs. Some cities, such as Cleveland (NEORSD) and Kansas City, will implement green infrastructure in lieu of some gray infrastructure in their Consent Decrees. MWRD was not provided the option to substitute any gray infrastructure with green infrastructure in the Consent Decree, but instead must add green infrastructure projects to the already planned gray infrastructure in the LTCP.

As part of the Green Infrastructure Plan required by the Consent Decree, MWRD must implement green infrastructure projects that provide, in the aggregate, a minimum of 10 million gallons of design retention capacity for precipitation in an individual storm. (Consent Decree

⁵³ The New York Department of Environmental Conservation has issued a series of orders to New York City that require the city to develop its LTCP, which has included some gray infrastructure. The most recent New York City Order on Consent with the New York Department of Environmental Conservation, dated March 8, 2012, requires the city to implement substantial green infrastructure. Available at http://www.nyc.gov/html/dep/pdf/green_infrastructure/CO2-20110512-25.pdf. The Philadelphia LTCP was approved by the Pennsylvania Department of Environmental Protection on June 1, 2011. See *Green City, Clean Waters*, PhillyWatersheds.org, http://phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan (last visited on April 14, 2013). See also In the Matter of The City of Philadelphia Water Department and The City of Philadelphia Administrative Order for Compliance on Consent, issued by EPA Region III (September, 21, 2012) available at http://www.phillywatersheds.org/doc/EPA_Signed_AOCC.pdf (last visited on April 23, 2013).

⁵⁴ This document is available at http://phillywatersheds.org/doc/LTCP_COA_2011_Appendix_E.pdf

App. E, at 4-5). MWRD must implement green infrastructure projects to meet specified retention capacities by specified milestone dates within 5, 10 and 15 years after entry of the Consent Decree, with the majority of the retention capacity required in the first 10 years. (*Id.* at 5). Additionally, the green infrastructure component of the Consent Decree is intended to help relieve localized flooding and basement backups. (*Id.* at 4).

The Green Infrastructure Program in the Consent Decree is also intended to raise public awareness of green infrastructure practices, support demonstration projects and provide technical assistance to satellite communities and others. The projects that are implemented as a result of MWRD's financial and technical support will advance the understanding of and support for green infrastructure on the part of municipalities, neighborhoods and residents, and thus serve as a catalyst for further green infrastructure implementation in the Chicago area in the future.

The NRDC commenters engaged Shaw Environmental & Infrastructure, Inc. (Shaw) to review the Green Infrastructure Program in the Consent Decree. (Ex. 7-1, NRDC at 45). The NRDC commenters state that Shaw compared the MWRD Green Infrastructure Program design retention requirement with the green infrastructure components in plans for Cleveland (NEORSD), New York City and Philadelphia, and determined that the MWRD requirement is vastly smaller in scale. (*Id.* at 56).

The Technical Memorandum prepared by Shaw ("Shaw Memorandum") identifies the MWRD green infrastructure design retention capacity requirement as 10 million gallons of stormwater runoff, but Shaw may not have realized that this design capacity will help reduce flows draining into the sewer system *each time* it rains. Shaw's analysis does not appear to acknowledge that the required 10 million gallons of retention capacity is the physical size of the green infrastructure projects and their capacity to take in rainwater *per storm* as opposed to annually. (See Ex. 38, Shaw Memorandum, March 2012, at 2, 4, 5).

Similarly, the NRDC commenters assert that the NEORSD decree requires more than four times the green infrastructure in the MWRD Consent Decree. (Ex. 7-1, NRDC at 56). However, that comment misunderstands what the MWRD Consent Decree requires, which is to implement green infrastructure projects with a retention capacity of at least 10 million gallons in an individual storm. (Consent Decree App. E, at 4, 5). In contrast, the NEORSD performance standard of 44 million gallons is based on gallons of CSOs reduced in a typical year. (Consent Decree App. 3, at 1, *U.S. v. NEORSD*, No. 10-02895 (N.D. Ohio Dec. 22, 2010).⁵⁵ The Chicago area typically experiences annually approximately 120 days with rain amounts of 0.01 inches or greater, 68 days with 0.10 inches or greater, 46 days with 0.25 inches or greater and 24 days with

⁵⁵ Available at <http://www.epa.gov/compliance/resources/decrees/civil/cwa/neorsd-cd.pdf>

0.50 inches or greater.⁵⁶ Therefore, for illustrative purposes only, if green infrastructure practices are sized to handle runoff from 0.5 inches of rain from the drainage area, 10 million gallons of green infrastructure retention capacity per storm would reduce flow into the sewer system by more than 240 million gallons in a year.⁵⁷

Shaw's comparison of the green infrastructure design retention capacity in the New York City and Philadelphia LTCPs with MWRD's fails to include the gray infrastructure stormwater retention capacity of TARP, either in its current capacity or when completed. NRDC's equivalent gallonage retention requirements for New York City of 351 million gallons for each modeled storm, plus gray infrastructure storage capacity of 120 million gallons, amounts to total storage or retention capacity of 471 million gallons.⁵⁸ NRDC's equivalent gallonage retention requirement for Philadelphia is 260 million gallons for each modeled storm. (Ex. 7-1, NRDC at 60). If the total storm water retention capacities of those systems were compared to MWRD's total storage or retention capacity per storm of 17,466 million gallons for CSOs, the MWRD overall capacity would be much larger, not smaller.⁵⁹

New York City and Philadelphia are choosing to employ green infrastructure as a large part of, and in Philadelphia's case most of, their CSO LTCPs. The other communities referenced in the NRDC comments are planning to implement green infrastructure to varying degrees, some more and some less than the Green Infrastructure Program in the MWRD Consent Decree. Attempting to compare the scale and cost of green infrastructure implementation by different cities is an unproductive comparison, however, because the hydrological, topographical, soil, climate and historical characteristics, as well as the gray infrastructure facilities unique to each city, result in different combinations of CSO controls.

A significant component of the Shaw Memorandum is a simplified analysis of the effects of the Green Infrastructure Program in terms of helping to reduce CSOs. The Shaw Memorandum estimates the runoff for the entire "872 square mile" MWRD service area.⁶⁰ (Ex. 38, Shaw

⁵⁶ E-mail from Molly Woloszyn, Extension Climatologist, Midwestern Regional Climate Center, University of Illinois (Aug. 24, 2012, 14:01 CDT; Aug. 30, 2012, 09:04 CDT) (on file with EPA).

⁵⁷ This illustration does not take into account many variables, including the scenario with back to back to storms whereby the green infrastructure may not have retention capacity available for the subsequent storm. Note also that this estimate for flows kept out of the sewer system does not take into account the more frequent storms where there is less than 0.5 inches of rain. Taking those storms into account would increase the estimate for the volume of water managed by the green infrastructure to over 400 million gallons in a year.

⁵⁸ New York City also includes unquantified inline storage, or the capacity available in its sewer system, as part of its LTCP. See Harbor Estuary Program, *NYC CSO Long Term Control Plan 10* (Oct. 11, 2006), available at <http://www.harborestuary.org/pdf/CAC/NYCDEP-HEPCAC-Oct11-2006.pdf>

⁵⁹ This amount includes both TARP capacity and green infrastructure retention capacity per storm, without taking into account the variables from, for instance, back to back storms, which may or may not be a variable included in Shaw's comparison.

⁶⁰ EPA assumes the "872 square mile" service area is from an older information source as the MWRD service area is correctly cited as 883 square miles elsewhere in the Shaw Memorandum. However, the discrepancy does not make a difference for this discussion.

Memorandum, March 2012, at 9-11). However, the relevant area is the combined sewer service area covered by TARP, which is 350 square miles. (Consent Decree App. A, at 2). The rest of the service area is composed largely of areas with separate sanitary and storm sewers. MWRD's infrastructure includes 30 storm detention basins to capture stormwater in the separate sewer areas, which is not mentioned as part of the Shaw calculation.⁶¹ As a result, estimated runoff in the Shaw analysis, the underlying premise for the analysis, substantially overestimates the runoff amounts. This in turn calls into question the charts, analysis and conclusions contained on pages 9-11 in the Shaw Memorandum. (Ex. 38, Shaw Memorandum, March 2012, at 9-11).

The Shaw Memorandum also discusses the effects of a possible Chicago initiative to plant one million trees. (Ex. 38, Shaw Memorandum, March 2012, at 13). Another section discusses effects of Chicago's efforts to promote or require green roofs. EPA encourages these types of actions by CSO communities. Actions that Chicago or other municipalities may undertake to foster green infrastructure implementation will complement and enhance the Green Infrastructure Program in the Consent Decree but are separate initiatives from the Consent Decree.

The NRDC commenters seem to suggest an alternative green infrastructure plan for MWRD drawn from the Shaw Memorandum that describes a Chicago street retrofit scenario and estimates the runoff reduction that could be achieved by such a program.⁶² Reconstructing about 137 miles of Chicago streets annually with gravel trenches six feet wide and six feet deep, along the curb on both sides of the street, to allow for increased infiltration of street runoff most likely would reduce runoff volumes. However, the way streets are designed and reconstructed and the schedule on which such a plan would take place is under the control and budgets of the municipalities in the Chicago metropolitan region. MWRD does not have the authority to require or, on its own, reconstruct local streets with gravel trenches. Thus, mandating street retrofits would not be a suitable requirement in this Consent Decree addressing MWRD CSOs and completion of TARP.⁶³

⁶¹ See MWRD website regarding MWRD facilities, including stormwater detention basins. See "Missions and Services, Facilities," mwrdd.org, <http://www.mwrdd.org/irj/portal/anonymous/Home> (last visited April 14, 2013).

⁶² The NRDC commenters refer to modeling performed by Shaw Environmental & Infrastructure, Inc. (Ex. 7-1, NRDC at 44). However, the Shaw Memorandum only refers to an analysis based on engineering calculations, and not modeling. (Ex. 38, Shaw Memorandum at 14-15).

⁶³ There are also possible technical/performance issues not addressed in the Shaw Memorandum regarding reliance on street retrofits as a way to achieve flow reductions, for example, possible clogging of the permeable pavement from grit and other material running off from the driving lanes.

2. Potential Costs of the Green Infrastructure Program

In keeping with the largely illusory requirement that MWRD collaborate to produce the green infrastructure design retention capacity, the Green Infrastructure Program in the Consent Decree does not actually require a significant financial commitment by MWRD. (Ex. 7-1, NRDC at 48).

Other cities carrying out CSO control programs will be required to implement tens of millions to more than a billion dollars worth of green infrastructure, while the MWRD Consent Decree requires a total expenditure of \$325,000 on green infrastructure planning activities. (Ex. 7-1, NRDC at 48).

EPA's webpage concerning the Consent Decree asserts that the Green Infrastructure Program is estimated to cost between \$25 million and \$50 million, but no further information is provided concerning this figure or how it was derived and no reference is made to it in the Consent Decree or anywhere else. The statement does not even specify whether this supposed 'cost' reflects actual costs to be borne by MWRD or projects in collaboration for which MWRD is allowed under the Consent Decree to take credit with minimal participation. (Ex. 7-1, NRDC at 48).

Response

It is common for EPA settlements not to require a specific dollar amount to be spent for injunctive relief, particularly when such costs are unknown. Costs can change over time, and in general the goal is not to spend more money, but rather to meet environmental objectives. The Green Infrastructure Program in the Consent Decree does not specify an amount of money that MWRD must expend to comply with the program, except for the early action projects, as described below. Instead, MWRD must meet the various requirements in the Green Infrastructure Program, regardless of costs.

The commenters misunderstand that the Green Infrastructure Program requires a total expenditure by MWRD of \$325,000 on green infrastructure planning activities. EPA estimates the costs associated with the Green Infrastructure Program to be much greater than that, as discussed below, though for the most part the program does not require MWRD to spend a specified amount on green infrastructure. The \$325,000 figure, the only specified cost in the program, attaches to the early action, "Early Monitoring, Evaluation and Knowledge Building" green infrastructure projects to be implemented within the first year of the Consent Decree to build knowledge that can be used to implement the main part of the program. (Consent Decree, App. E, at 2).

For informational purposes, EPA estimated the costs for installing green infrastructure projects to meet the 10 million gallon per storm design retention capacity component in the Green Infrastructure Plan. The estimated cost for the green infrastructure measures reflects the estimated cost per unit of measure for various green infrastructure practices, and the mix of practices planned. The mix of practices to be implemented will reflect local codes and ordinances, community goals and preferences, expected capture volumes, as well as costs for different types of projects. Key practices that MWRD may implement may include rain gardens, bioswales, porous pavements and green roofs.

The Governments adopted the performance values, the retention capacity as expressed in gallons, using a calculator tool developed by NRDC and Shaw (the consulting firm which prepared the Technical Memorandum provided with the NRDC comments). As identified on page 6 of the Green Infrastructure Program, the Governments used the calculator as posted at the following web address as of September 30, 2011: <http://www.h2ocapture.com/en/Calculate.aspx>.

Using the NRDC calculator, EPA estimated that implementing green infrastructure projects to achieve a cumulative design retention capacity of at least 10 million gallons per storm may require an investment of between \$25 million and \$50 million. The following table shows an example of a combination of green infrastructure practices that could be used to meet the 10 million gallons of design retention capacity per individual storm requirement.

Green Infrastructure Components	Capture (in gallons)	Cost
2,500,000 sq. ft. of rain gardens	5,000,000 gal.	\$51,253,000
400,000 sq. ft. of bioswales	2,000,000 gal.	
200,000 sq. ft. of porous pavement	2,000,000 gal.	
335,000 sq. ft. of green roof	1,005,000 gal.	

The capture and cost numbers shown in this table were derived using the NRDC calculator that was posted on-line in 2011, at the time the Governments and MWRD were finalizing the Consent Decree.⁶⁴ Of course, the costs could be lower or higher than that depending on the types of green infrastructure implemented. Those costs do not include any costs that could be associated with land acquisition, and do not include any legal costs or engineering design costs that could be incurred when implementing any particular green infrastructure project.

MWRD's commitment to spend \$325,000 and its pre-existing commitment to spend \$1 million on green infrastructure pale in comparison to green infrastructure dollar expenditures in other

⁶⁴ Since EPA estimated the costs in December 2011, the on-line NRDC calculator was revised in 2012; the version of the calculator currently on-line no longer provides an estimate of design retention capacity, used to then estimate the costs.

communities such as Cleveland, New York City, Philadelphia, St. Louis and Washington, D.C. (Ex. 7-1, NRDC at 48-49).

Response

As noted above, EPA estimates the costs to implement the MWRD Green Infrastructure Program to be in the range of \$25 million to \$50 million.

Comparing the dollars that potentially will be expended by MWRD to these other communities is not a valid method for assessing the sufficiency of the green infrastructure component of the Consent Decree. First, it is important to note that in this case, and in at least some of the others, the costs are rough estimates, not estimates based on project plans or contractors' bids, and will vary substantially depending on the type of green infrastructure implemented as well as other variables. The costs upon completion may be significantly higher or lower than the estimates. Second, the estimated costs are not synonymous with stormwater storage retention amounts. The amount of flow retained by the green infrastructure projects is what matters, not how much the projects cost to implement. Of course, cost can be a surrogate for the size or scope of green infrastructure, but it is not the best measurement for scope in this case. Implementation of the Green Infrastructure Program according to the requirements set forth therein, at less cost to the public would presumably be in the public interest. Finally, in this case and in most of the referenced cases, green infrastructure is only part of the injunctive relief for reducing CSOs. Some communities are implementing more green infrastructure and less gray infrastructure, and some vice versa.

In contrast, Philadelphia's green infrastructure program is the central component of the city's CSO control strategy and that strategy does not include construction of gray infrastructure such as deep tunnels or reservoirs.⁶⁵ Similarly, the Consent Decree for the Metropolitan St. Louis Sewer District calls for a \$100 million investment in green infrastructure in city neighborhoods where major gray infrastructure projects are not planned to control CSOs. Suggesting that the Consent Decree should require that MWRD pay hundreds of millions to over a billion dollars for green infrastructure projects does not recognize the more than \$3 billion already invested in TARP. More importantly, it misses the mark as to the requirements in this Consent Decree by concentrating on dollars spent instead of the results required, specifically completion of the LTCP and adding, through green infrastructure, 10 million gallons of design retention capacity for precipitation per individual storm.

Another comment regarding the sufficiency of the Green Infrastructure Program in the Consent Decree expressed the view that the investment of one full time equivalent employee (FTE) plus the \$325,000 investment in "knowledge building" projects is approximately equal to the

⁶⁵ See http://phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan

\$1 million budget amount already established by MWRD, and thus the Consent Decree essentially retains the status quo. However, prior to agreeing to this provision in the Consent Decree, MWRD did not have an FTE specifically dedicated to green infrastructure. Further, the \$1 million budget for green infrastructure approved by MWRD's Board in 2011 would allow MWRD to commence efforts to implement the Green Infrastructure Program and does not represent the amount MWRD would spend on green infrastructure during implementation of the Green Infrastructure Program under the Consent Decree.

3. Collaboration in Implementing Green Infrastructure Projects

The Green Infrastructure Program does not require meaningful participation by MWRD in the projects for which it claims credit toward the 10 million gallons per storm cumulative capacity requirement. (Ex. 7-1, NRDC at 47).

Commenters have no objection to collaborative implementation of green infrastructure. Indeed, they endorse it as a critical component of effective management and cost control. (Ex. 7-1, NRDC at 47).

The Consent Decree should include a formula of some sort to apportion credit to MWRD for results based upon time spent, dollars expended, or other relevant factors. (Ex. 7-1, NRDC at 47).

Response

In accordance with the schedule and milestones set forth in the Green Infrastructure Program, MWRD must, by itself or in collaboration with other stakeholders, complete green infrastructure projects within its service area that are identified pursuant to the Green Infrastructure Plan. (Consent Decree App. E, Section III). Collaboration with other stakeholders means "provision by MWRD of necessary technical and/or financial resources toward the successful completion of a Green Infrastructure project." (*Id.*). Collaboration on green infrastructure projects is also an element of several other aspects of the Green Infrastructure Plan: MWRD Green Infrastructure Community Assistance; Green Infrastructure Projects and/or Collaborations; Establishing Partnerships and Collaborations with Other Stakeholders; and Preservation of Constructed Green Infrastructure Projects. (*Id.* at Section II.C. iii, iv, iv.a and iv.d). Each of those elements specifies ways in which MWRD must collaborate with such stakeholders. For instance, as part of Establishing Partnerships and Collaboration with Other Stakeholders, MWRD must outline procedures to work in collaboration with stakeholders to identify, plan and implement green infrastructure projects. (*Id.* at Section II.C.iv.a).

Unlike gray infrastructure, which is constructed and operated by NPDES permittees, green infrastructure may be implemented by a variety of entities throughout the service area. These stakeholders may include municipal and governmental entities; business and commercial entities; non-governmental organizations (“NGOs”); members of the public and other interested parties. (*Id.*). As part of its Green Infrastructure Plan, MWRD must include prioritization criteria and processes to select locations where: green infrastructure control measures will help reduce flooding and basement backups; land ownership will accommodate permanent green infrastructure control measures; and green infrastructure control measures can improve socio-economic conditions. (*Id.* at Section II.C.iv.c). To carry out projects in neighborhoods throughout the service area it will be necessary for MWRD to work with collaborating organizations, since municipalities have local ordinances impacting land use, as well as ownership of and responsibility for streets and public areas where green infrastructure practices may be located. Working with NGOs and local communities will be beneficial in terms of helping to seed a culture of green infrastructure in the Chicago metropolitan area and serving as a catalyst for further projects even after MWRD has met the Consent Decree’s green infrastructure requirements.

The Green Infrastructure Plan intentionally provides for flexibility, particularly as to opportunities for collaboration, for MWRD to provide technical assistance, design services or funding to a community or NGO to implement a green infrastructure project. There are many different potential arrangements under which a green infrastructure project could proceed. For example, a municipality could make a site available for a green infrastructure project or provide in-kind services, and MWRD could provide technical assistance in completing a project design or funding for the implementation of the design (excavation, installation of pavement, purchasing of plants, etc.).

Alternatively, MWRD could collaborate with an NGO to implement a project, with the NGO working with neighborhood organizations and residents and MWRD providing design services and funding for implementation. MWRD must provide necessary technical and/or financial resources toward the successful completion of a green infrastructure project to receive credit toward the 10 million gallons per storm capacity requirement. Thus, MWRD must make substantive contributions to receive credit for completed green infrastructure projects, but the level and type of contribution will vary depending on the project, collaborators and other factors. This flexibility is advantageous by allowing many different types of projects without being encumbered by a specific model for how collaboration should occur. The green infrastructure provisions of the Consent Decree are not meant to be punitive to MWRD; whether or not MWRD pays for implementation does not make a difference in terms of the success of the green infrastructure installed. It is the successful completion of the green infrastructure projects that matters and ultimately MWRD must ensure that each project is completed under the Consent Decree to receive credit for that project.

Finally, it should be noted that credit for green infrastructure projects implemented by other entities is allowed in at least one other settlement referenced favorably by commenters. In the New York City Order on Consent, “green infrastructure application rates may be met through public green infrastructure projects, as well as green infrastructure control measures required for private projects, including but not limited to, application of stormwater control performance standards on public or private development, grants to individuals, organizations or entities, public roadway projects, or any other appropriate measures.”⁶⁶

4. Enforcement of the Green Infrastructure Program

a. Enforceability and Penalties

The green infrastructure requirements in the proposed Consent Decree are not practicably enforceable. Apart from the design retention capacity requirements, the Consent Decree sets forth no specific actions or timetables for MWRD that could be the subject of an enforcement action if not achieved. The early monitoring, evaluation and knowledge building section requires only that MWRD evaluate design specifications, installation processes and procedures and share its findings and lessons learned with stakeholders in the service area. The green infrastructure plan section requires that MWRD identify generally measures that reduce wet weather flows into the system and include information about green infrastructure best practices in its plan. It requires that MWRD provide administrative and technical assistance to communities but does not specify the types of assistance or any measurable means of determining if that assistance is either significant or effective. (Ex. 7-1, NRDC at 52).

Under the Consent Decree as drafted, MWRD could essentially do next to nothing to implement green infrastructure, and still be immune to enforcement so long as it could show that it evaluated, shared, or assisted somewhere, sometime, with green infrastructure implementation. (Ex. 7-1, NRDC at 52).

Response

The Consent Decree contains a comprehensive and enforceable green infrastructure program, requiring MWRD to meet a design retention capacity requirement of 10 million gallons per individual storm, and at the same time, serve as a catalyst for developing further green infrastructure practices throughout the Chicago area. For instance, pursuant to the early monitoring, evaluation and knowledge building requirements, MWRD must implement one or more green infrastructure projects within one year of entry of the Consent Decree, and must

⁶⁶ State of New York and City of New York City, Amended Order on Consent, DEC Case No. C02-20110512-25, 9, available at http://www.nyc.gov/html/dep/pdf/harbor/cso_consent_order_amended_03082012.pdf

dedicate at least \$325,000 to the project(s). MWRD must develop and maintain documentation and report on the early monitoring, evaluation and knowledge building resulting from implementation of these project(s) pursuant to Section II.B. of the Green Infrastructure Program. MWRD must provide cost information for the Governments to determine whether MWRD has met the requirement for an investment of at least \$325,000 for the project(s). MWRD must also document its findings regarding efforts to evaluate design specifications, installation processes and procedures, and include a description of activities undertaken in its Annual Report to the Governments as required by the Consent Decree. (Consent Decree App. E, at 2, 7).

Building on that initial demonstration phase, MWRD must submit a Green Infrastructure Plan within one year of the entry of the Consent Decree. EPA, after consultation with IEPA, will approve or disapprove the plan pursuant to the Approval of Deliverables section of the Consent Decree, based on whether the plan contains all of the information required in the specifications set forth in Section II.C.i through II.C.iv in Appendix E of the Consent Decree. The plan itself must contain specified elements. The scope and required content of the plan are described in Section II.C. of the Green Infrastructure Program. For example, MWRD must develop a Comprehensive Land Use Policy for land owned by MWRD. Pursuant to that policy, MWRD must develop green infrastructure guidelines/requirements for public use lessees and submit the guidelines/requirements as part of the plan. MWRD must also, as part of that policy, develop an incentive program to encourage development of green infrastructure projects on MWRD land leased for private use and submit the incentive program guidelines as part of the plan. Thus, whether MWRD submits the plan on schedule and whether the plan meets the requirements of Section II.C are enforceable under the Consent Decree.

In addition, the Green Infrastructure Plan contains specific quantifiable requirements for green infrastructure projects that MWRD must complete in accordance with the required schedule set forth in the Green Infrastructure Program. (*Id.* at Section III). The green infrastructure projects implemented pursuant to the plan must in the aggregate provide a minimum design retention capacity of at least 10 million gallons per storm. Projects meeting 2 million, 5 million and 10 million gallons of design retention capacity per storm must be completed within 5, 10 and 15 years of entry of the Consent Decree, respectively. (*Id.*).

To track compliance with the Green Infrastructure Plan requirements, MWRD must maintain an inventory of completed green infrastructure projects, including project locations, collaborating partners, type and size/scope of the projects and the entity responsible for project maintenance and design retention capacity. (*Id.*). MWRD must report on projects implemented as part of its Consent Decree reporting, as specified in Section V.C of the Green Infrastructure Program. The Governments will be able to audit data in the inventory database, to evaluate information reported in compliance reports. For example, the Governments can review plans/design drawings or review calculations of design capacity based on the design retention capacity table to

evaluate whether the capacities reported are accurate. The Governments will also be able to visit sites to ensure the green infrastructure projects were put in place as reported in Consent Decree compliance reports.

The Rain Barrel Program includes clearly enforceable requirements as to the numbers and dates by which MWRD must distribute rain barrels. (*Id.* at Section II.A). MWRD must provide documentation of the number of rain barrels distributed, as well as other specified details, in MWRD's Annual Report to the Governments pursuant to the Consent Decree. (*Id.* at Section V.A). The Contingency Event-Related Schedule Delay section of the Green Infrastructure Program also includes clearly enforceable requirements pertaining to the amount of additional green infrastructure required and the deadlines for completion, in the event that MWRD meets its burden for invoking the contingency event provisions of the Consent Decree. (*Id.* at Section IV).

The Green Infrastructure Program also includes requirements that are less prescriptive and intended to provide flexibility in MWRD's implementation of the program, for instance, with regard to community assistance. Nonetheless, the types of community assistance are specifically identified in Section II.C.iii of Appendix E. MWRD must provide administrative and technical assistance to communities within its service area such as identification of vacant parcels for potential green infrastructure projects, or assistance with design and construction of stormwater infiltration, capture and/or reuse sites. MWRD must identify the different forms of assistance it makes available, including expertise in green infrastructure planning, site design, implementation, maintenance and monitoring. MWRD must also work with communities on updates to local codes and ordinances to remove barriers to implementation of green infrastructure.

Additionally, MWRD must dedicate at least one FTE to provide green infrastructure technical assistance to communities within the service area. It is not necessary to prescribe a quantifiable metric to determine whether MWRD's assistance is either significant or effective. The value of that assistance will be evident in the success of MWRD's collaborations to implement green infrastructure projects required in the Consent Decree. MWRD has an incentive to effectively implement the Early Monitoring, Evaluation and Knowledge Building requirements of the Green Infrastructure Program as the lessons learned and information shared will contribute to the successful planning and implementation of projects to meet the 10 million gallons per storm retention capacity requirement in Section III of the Green Infrastructure Program.

Even the 10 million gallon numeric requirement, the only provision in the Green Infrastructure Program that is even theoretically subject to enforcement, carries with it no stipulated penalties for failure to comply. (Ex. 7-1, NRDC at 52).

Response

The Consent Decree includes stipulated penalties for any material failure by MWRD to implement the Green Infrastructure Program:

If MWRD materially fails to implement Appendix E (MWRD Green Infrastructure Program), Defendant shall pay a stipulated penalty of \$325,000. MWRD shall nonetheless remain responsible for implementing Appendix E (MWRD Green Infrastructure Program).

(Consent Decree ¶ 52(e)). Failure to meet the 10 million gallon design retention capacity per storm requirement would, in EPA's view, constitute a material failure to implement Appendix E. In addition, under the explicit terms of the Consent Decree, the Governments reserve all legal and equitable remedies available to enforce the provisions of the Consent Decree, except for the civil claims alleged in the Complaint through the date of lodging. (*Id.* at ¶¶ 79, 80).

b. Green Infrastructure Performance Measures

The Consent Decree contains no requirement that MWRD develop performance standards or measure performance. (Ex. 7-1, NRDC at 49).

The only numeric measure of performance in the Consent Decree is the design detention capacity of the green infrastructure measures (with interim milestones). Knowing only the projects' cumulative design retention capacity provides no actual information as to what they will achieve in curbing CSOs. Projects of one type or location may significantly reduce CSOs and others may do very little. The Consent Decree contains no means to tell the difference. (Ex. 7-1, NRDC at 49).

Failure to provide meaningful performance standards and monitoring measures stands, once again, in sharp contrast to LTCPs, consent decrees and state administrative consent orders being implemented in New York City, Philadelphia and Cleveland. (Ex. 7-1, NRDC at 49-50).

The MWRD Green Infrastructure Program includes no actual performance measures specifying the required effectiveness of the work, but rather merely provides engineering specifications that must be complied with. (Ex. 7-1, NRDC at 49).

Response

The purposes of the Green Infrastructure Program are to, among other things, reduce CSO discharges, localized flooding and stormwater impacts. (Consent Decree App. E, Section I). Given these purposes, an appropriate metric for gauging its adequacy is the scope or scale of the

projects to be implemented. Pursuant to the Green Infrastructure Plan requirements, MWRD must implement green infrastructure projects that, in the aggregate, provide a minimum of 10 million gallons of design retention capacity in an individual storm. (*Id.* at Section III). Design retention capacity means the maximum available retention capacity of a project in any individual storm event as stated in project plans stamped by a licensed Professional Engineer or, in the absence of such a statement, a project-specific capacity calculated using the design retention capacity table in Appendix E. (Consent Decree App. E, at 5). The Governments derived the design retention capacity values from the H2OCapture online green infrastructure calculator developed by NRDC and Shaw.⁶⁷

The types of green infrastructure that MWRD may implement pursuant to the Consent Decree include, but are not limited to, rain gardens, bioswales, permeable pavement and green roofs. There are various ways to measure the scale or magnitude of green infrastructure projects, including the square feet of an extensive green roof, or the void space (for storage of water) in the rock sub-base beneath permeable pavement. The metric of gallons of design retention capacity is a suitable metric to measure the scale of green infrastructure practices because it can be used for all different types of green infrastructure. Different types of green infrastructure practices can be characterized in terms of how many gallons of water the practice will be able to store or retain. The design retention capacity metric in the Green Infrastructure Program provides an objective, consistent process for quantifying the capacity of the different types of green infrastructure, which will allow for straightforward, consistent compliance determinations.

Design retention capacity is a conservative measurement of the effectiveness of green infrastructure practices because it takes into account only the physical capacity of the practice to hold water. This metric does not account for infiltration or evapotranspiration, processes that occur as water is managed in most green infrastructure practices.⁶⁸ Infiltration and evapotranspiration increase the performance of green infrastructure practices in terms of reducing the amount of runoff draining to local sewer systems. Thus, although the design retention capacity is the minimum level of performance that will be achieved by the practices installed, actual performance will typically be better, reflecting the effects of infiltration and evapotranspiration.

Green infrastructure implementation in CSO cases is an evolving field. CSO communities, when developing green infrastructure plans for managing wet weather, are using a variety of metrics to measure performance. The green infrastructure programs in the Cleveland (NEORSD),

⁶⁷ As retrieved on September 30, 2011, *available at* <http://www.h2ocapture.com/en/calculate.aspx>

⁶⁸ Green infrastructure practices capture and hold rain water and in many situations allow water to infiltrate or seep into the ground. Some water is also returned to the air by plants through evapotranspiration. The performance standard for green infrastructure implementation takes into account the size/capacity of green infrastructure practices to capture rainwater, but does not account for the additional flow reduction that may be achieved as a result of infiltration and evapotranspiration.

Philadelphia, St. Louis, Kansas City and New York City consent decrees and orders are to varying degrees part of the CSO LTCPs for those cities. As such, the settlement agreements associated with those LTCPs are tailored to correspond to the requirements of each city's LTCP. In contrast, although green infrastructure implementation is required in the Consent Decree, MWRD's LTCP does not require implementation of green infrastructure practices.

5. The Rain Barrel Program Component of the Green Infrastructure Program

The rain barrel program is essentially symbolic. The rain barrel program as minimally defined is not equipped to ensure results. (Ex. 7-1, NRDC at 53).

The 825,000 gallons of rain water capture cited in Appendix E is the maximum capacity of the 15,000 rain barrels slated for distribution and could only be achieved if MWRD ensures that the rain barrels are actually installed by homeowners in an appropriate manner and maintained regularly. The Consent Decree does not ensure proper implementation by the end users. (Ex. 7-1, NRDC at 53).

Response

The distribution of rain barrels is a valuable educational component of a green infrastructure program because it is a way to inform and involve local residents in stormwater management and CSO control efforts. Homeowners can learn how rain barrels can capture water off of rooftops, helping to reduce the volumes of water draining into local sewer systems, and also how using the water to irrigate lawns and gardens can help reduce the amount of potable water used during dry weather periods. The Consent Decree includes a provision that MWRD will affix a label to each rain barrel to be distributed that summarizes the environmental benefits of using rain barrels. And the rain barrel program serves as an early action item in the Green Infrastructure Program, while MWRD is developing or constructing other aspects of the program.

The commenters note that for rain barrels to provide the maximum benefit they need to be properly installed, and properly used and maintained. For example, homeowners should use the water after a storm event to water lawns or for other purposes, to empty out the rain barrel so there is capacity to hold water when the next storm event occurs. However, MWRD does not have authority to go onto private properties and cut downspouts and take other actions to install rain barrels, nor does it have authority to require property owners to empty out their rain barrels after each rain event. The rain barrels that MWRD will distribute will include instructions on how to install and use them. Private property owners that obtain rain barrels from MWRD will need to follow the instructions for their installation and use to achieve the maximum benefits from the rain barrel.

As noted in Appendix E, the required 15,000 rain barrels with 55 gallon capacity together have a maximum capacity of 825,000 gallons of water, which is a conservative estimate based on filling each rain barrel just once. (Consent Decree App. E, at 1). Therefore, it can be achieved if the rain barrel user merely sets the rain barrel outside catching runoff from a roof and does nothing further. However, if the rain barrel users empty them between rain events and the rain barrels are refilled with each rain event, the capacity could be 825,000 gallons per rain event. There are approximately 46 days per year in Chicago with 0.25 inches of rain or greater,⁶⁹ which indicates the rain barrel storage capacity could potentially be used 46 or more times in a year. As that potential capture amount depends on maintenance/use by the individual users, EPA did not cite an annual capture amount in the Consent Decree.

6. Timeframe for Developing the Green Infrastructure Plan

The Consent Decree does not provide a realistic means or timeframe for MWRD to develop the green infrastructure plan. (Ex. 7-1, NRDC at 53). The Green Infrastructure Program contains no actual means or structure within which the ambitious goal of developing a comprehensive green infrastructure program can be achieved. (Id.).

Developing a worthwhile land use policy would be an enormous undertaking, including digitally mapping property locations and assessing the ecological and stormwater management value of all MWRD land, and it is unlikely MWRD could complete all this work in one year. Completing that process within one year would require a team of technical specialists that could not possibly be assembled on MWRD's assigned shoestring budget of \$325,000 for information gathering efforts. (Ex. 7-1, NRDC at 54).

The green infrastructure program provides no direction at all regarding what analytical studies would be needed to identify appropriate green infrastructure measures and how long such studies would take. (Ex. 7-1, NRDC at 54).

Once again, the half-baked and poorly thought out green infrastructure plan requirements stand in contrast to the measured and carefully framed planning requirements in other LTCPs. MWRD is being assigned in the Consent Decree to start from scratch in developing a green infrastructure plan, is not being required to expend the necessary resources to do so and is given a year to complete the process. Simply put, this will not work. (Ex. 7-1, NRDC at 54).

⁶⁹ E-mail from Molly Woloszyn, Extension Climatologist, Midwestern Regional Climate Center, University of Illinois (Aug. 30, 2012, 09:04 CDT) (on file with EPA).

Response

Section II.C. of the Green Infrastructure Program defines the elements that must be addressed in the Green Infrastructure Plan (the plan). (Consent Decree App. E, at 2). MWRD must submit the plan for review and approval within one year of the effective date of the Consent Decree. (*Id.*). As part of the plan, MWRD must develop a comprehensive land use policy to apply green infrastructure requirements or incentives on MWRD land leased to outside parties. (*Id.*). According to information provided by MWRD, MWRD currently has 165 leases covering approximately 2,854 acres in Cook County.⁷⁰ (Ex. 4, Aistars Decl. ¶ 19).

The Consent Decree does not require MWRD to digitally map property locations or complete assessments of the ecological and stormwater value of all MWRD lands. MWRD may develop that information but it is not a necessary prerequisite for developing a land use policy. Rather, MWRD must develop green infrastructure guidelines/requirements for MWRD-owned land in public use and develop an incentive program to encourage development of green infrastructure projects on MWRD-owned land in private use. (Consent Decree App. E, at 2). MWRD must implement the policy for new or renewed leases on into the future. (*Id.*). Among other things, MWRD must report on the number of leases for private use under which a lessee has implemented a green infrastructure project under the plan. (*Id.* at 7). Developing the comprehensive land use policy is an undertaking that the Governments and MWRD agreed can be completed in one year. Implementing the policy will, of course, be a several year process.

Commenters incorrectly suggest that the Consent Decree requires MWRD to spend \$325,000 for information gathering related to the land use policy. MWRD must spend that amount for initial green infrastructure projects in Section II.B of the Green Infrastructure Program. The Consent Decree does not prescribe expenditure for the other requirements of the Green Infrastructure Program. MWRD must comply with the requirements, costs notwithstanding.

Similarly, with regard to the requirement to identify specific green infrastructure control measures, there is considerable information available on the design, installation, expected performance and typical maintenance requirements for green infrastructure practices. Prior to executing the Consent Decree, MWRD implemented some green infrastructure projects using native prairie landscaping and permeable pavement.⁷¹ According to MWRD, MWRD staff has also attended seminars and conducted research on green infrastructure in the context of the draft Cook County Watershed Management Ordinance for use in establishing detention requirements for new developments. MWRD brings that experience to development of this program. As part of development of the plan, MWRD will be able to conduct research and identify the practices,

⁷⁰ That acreage does not include MWRD-owned land in Du Page and Will Counties, not at issue here.

⁷¹ See, e.g., MWRD's website, Native Prairie Landscaping, <http://www.mwrld.org/irj/portal/anonymous?NavigationTarget=navurl://d48307853b6d208d8d87e42e47745a4a> (last visited April 14, 2013), and Welcome to MWRD's rain barrel program! <http://www.mwrld.org/irj/portal/anonymous/rainbarrel> (last visited April 14, 2013).

design criteria, expected performance and maintenance needs for the practices best suited for the Chicago area. MWRD can then use that information to guide decision-making about green infrastructure projects as the plan is implemented. The Governments and MWRD agreed that compiling and analyzing information on green infrastructure practices and incorporating this information into the Plan is an undertaking that can be completed in one year. The Governments expect, however, that the plan will evolve over time as MWRD implements green infrastructure projects during the pendency of the Consent Decree.

7. Green Infrastructure Program Public Participation

There is no requirement that the public be allowed to participate in any way in development of the Green Infrastructure Plan, in violation of the CSO Policy's public participation requirement. (Ex. 7-1, NRDC at 55).

Response

The public participation provision of the CSO Policy applies to development of the CSO LTCP, which in this case is TARP, and not to development of the Green Infrastructure Plan. (59 Fed. Reg. at 18,692). (See Section V.A.2.b, above, for further discussion on public participation pertaining to TARP and Section V.A.1 above for discussion of CSO Policy application to pre-policy CSO control efforts.) Nonetheless, MWRD has indicated that if the Consent Decree is entered, MWRD intends to invite public input as a part of the development of the Comprehensive Land Use Policy in the Green Infrastructure Plan.

While there is no CSO Policy requirement for public participation in the development of the plan, the Consent Decree requires MWRD to seek stakeholder involvement in plan implementation. Public participation will be of the most benefit in selection and implementation of the green infrastructure projects themselves as opposed to the plan. The Green Infrastructure Program contains many public participation opportunities, particularly in the substantive decision making pertaining to selection, design and location of green infrastructure projects. As part of the Early Monitoring, Evaluation and Knowledge Building requirements, MWRD, after evaluating design specifications, installation processes and procedures and documenting its findings, must share its findings and lessons learned with stakeholders in the service area as part of the community assistance and collaborative efforts required in the Green Infrastructure Program. (Consent Decree App. E, at 2). As part of the Green Infrastructure Community Assistance requirements, MWRD must provide administrative and technical assistance to communities within its service area and must work with communities on updates to local codes and ordinances to remove barriers to green infrastructure. (*Id.* at 3).

As part of the Green Infrastructure Projects and/or Collaborations requirements in the Consent Decree, MWRD must identify opportunities for the development of green infrastructure projects and/or collaborations through the following specified actions described in the Green Infrastructure Plan which include public participation:

- MWRD must identify and engage other stakeholders in its service area to plan and implement green infrastructure projects. MWRD must outline procedures to work in collaboration with these partners to identify, plan and implement green infrastructure projects.
- MWRD must establish and describe in the plan, a public participation process that provides information about the plan and development of green infrastructure projects. The public participation process must also provide opportunity for public comment regarding the selection, conceptual design, and location of green infrastructure projects. The public participation process must be open to all who live in the MWRD service area, and include measures to engage people living in neighborhoods with greater pre-existing needs and vulnerabilities.
- MWRD must work with partners and stakeholders to preserve and maintain the constructed green infrastructure projects and to ensure that future site or land use changes do not result in the loss of the runoff reduction benefits of constructed green infrastructure projects. MWRD must share best management practices with partners and stakeholders.

(*Id.* at 4). Each of the actions listed above includes public participation opportunities, in keeping with the public participation intentions in the CSO Policy.

The public participation provisions in Appendix E are similar to the public participation provisions in the Cleveland (NEORS) green infrastructure program, which requires submittal of a green infrastructure plan to EPA and the state of Ohio, and a public participation process that involves the public in selecting the types and locations of green infrastructure control measures. (Consent Decree App. 3, at 1-2, *U.S. v. NEORS*, No. 10-02895 (N.D. Ohio Dec. 22, 2010)).⁷² NRDC commented favorably on the public participation provisions in the NEORS green infrastructure program. (Ex. 39, NRDC Letter to DOJ, Jan. 28, 2011 (public comments on proposed NEORS Consent Decree)).

8. Additional Commitment to Green Infrastructure Projects for Contingency Events

The additional green infrastructure measures triggered by a TARP contingency event are not meaningful. (Ex. 7-1, NRDC at 51).

⁷² Available at <http://www.epa.gov/compliance/resources/decrees/civil/cwa/neorsd-cd.pdf>

The capacity of the additional green infrastructure that would be required is a tiny fraction in relation to the capacity of the reservoirs. (Ex. 7-7, Alliance at 40).

Response

Under the terms of the Consent Decree, MWRD must implement additional green infrastructure projects, over and above the projects required pursuant to Section III of the Green Infrastructure Program, if MWRD meets its burden for invoking the contingency event provisions of the Consent Decree to extend the completion date of a reservoir. (Consent Decree App. E, at 6). Appendix E, Section IV of the Consent Decree specifies the amount of additional green infrastructure required for each contingency event, and the time frames within which MWRD must complete the projects. For contingency events resulting in delay of the Thornton Composite Reservoir, MWRD is responsible for implementing green infrastructure projects totaling 250,000 gallons of design retention capacity. (*Id.*). For contingency events resulting in delay of Stage 1 of the McCook Reservoir, MWRD must implement green infrastructure projects totaling 250,000 gallons of design retention capacity. (*Id.*). Finally, for contingency events related to Stage 2 of the McCook Reservoir, MWRD must implement green infrastructure projects totaling 250,000 gallons of design retention capacity for each grant of a contingency event. (*Id.*).

The contingency-related green infrastructure projects are in addition to MWRD's obligation to implement projects totaling a minimum of 10 million gallons of design retention capacity per individual storm. MWRD may implement the projects by itself or with collaboration from other stakeholders, but MWRD is ultimately responsible for the completion of the projects to receive credit for the projects pursuant to the Consent Decree. (*Id.*). While the Consent Decree acknowledges the particular aspects of the TARP project that necessitate including contingency event provisions, as described below, the Consent Decree also requires that MWRD construct more green infrastructure to further the purposes of the Green Infrastructure Program, including to reduce CSO discharges.

The green infrastructure provisions addressing contingency events are not intended to be a direct offset to a reservoir schedule extension. The CSO storage capacity planned for the reservoirs will ultimately be provided by the reservoirs, should an extension be approved, albeit at a later point in time. To require that green infrastructure measures be provided at a volume approximately equal to or even approaching the capacity of the reservoirs would be requiring in effect another LTCP with the associated planning and resources, including duplication of costs, to construct green infrastructure projects that could take longer to complete than the subject reservoir. In addition, given the enormous capacity the reservoirs will provide, it is not realistic to plan that an equivalent level of green infrastructure retention capacity could be provided in the MWRD service area. Theoretically, if the estimated costs are \$25 million to \$50 million to

implement green infrastructure projects amounting to 10 million gallons of storage retention capacity per storm, then it would cost an estimated \$25 billion to \$50 billion to implement the green infrastructure equivalent to the 10 billion gallon storage capacity design for the McCook Reservoir.

The additional green infrastructure projects required for contingency events is instead an agreed consequence that partially mitigates impacts of delay and is not intended to fully compensate for delay in completing a reservoir. Using the cost numbers summarized above for green infrastructure projects, EPA estimates that if MWRD meets its burden for invoking a contingency event, between \$625,000 and \$1,250,000 will be invested for implementation of green infrastructure projects for each instance. The green infrastructure projects can be implemented relatively quickly, furthering the goals of reducing localized flooding and basement backups during the interim period while the reservoirs are being completed.

A commenter also observed that the amount of green infrastructure to be implemented in the event of a contingency event is not related to the length of the delay. As noted above, the schedule will be extended only if MWRD meets the stringent criteria set forth in Section VII of the Consent Decree. The length of schedule extension will be dependent on the circumstances that caused the contingency event, factors generally outside the direct control of MWRD and not evident at this time. In any event, MWRD must show that the dates in the projected schedule are as expeditious as possible. (Consent Decree ¶ 22(e)). Therefore, it is reasonable to require that MWRD implement a fixed amount of green infrastructure if a contingency event is invoked, as opposed to tying the amount of green infrastructure to be implemented to the length of the expected delay.

A provision allowing extension of deadlines is also included in the New York City settlement order referenced by commenters, which includes a “contingency plan” for extending the schedule for attainment of the required green infrastructure. Specifically, if New York City fails to attain the specified green infrastructure by the 2015 deadline, the city may avoid stipulated penalties by, *inter alia*, submitting an approvable contingency plan to the New York Department of Environmental Protection. (State of New York and City of New York City, Amended Order on Consent, DEC Case No. C02-20110512-25, 10).⁷³

The green infrastructure requirements addressing contingency events in the Consent Decree are intended to enhance one aspect of the overall wet weather management program in the event another aspect is delayed. However, the green infrastructure capacity requirements that would go into effect if there is a contingency event should not be regarded as a direct offset for completion of the reservoirs, and the scale and capacity of the required green infrastructure

⁷³Available at http://www.nyc.gov/html/dep/pdf/green_infrastructure/CO2-20110512-25.pdf

projects should not be set based on the capacity of the reservoirs or the length of the necessary schedule extension.

9. Suggestions in Developing the Green Infrastructure Plan

Commenters offered specific recommendations for requirements to develop a green infrastructure plan, including the following:

- *MWRD should look at example plans developed for green infrastructure implementation in the Cleveland Metropolitan area, New York City and Philadelphia.*
- *The green infrastructure plan should integrate existing water management policies in a way that ensures they are consistent and complementary.*
- *Key elements of a comprehensive green infrastructure plan should include written policies/ procedures, management standards, technical standards, program size (e.g., more staff/expertise may be necessary), land use policy, volume control standards, retrofit program, modeling and monitoring, prioritization of efforts, implementation strategies and funding. (Ex. 7-2, CNT at 2-6).*

Response

One group of commenters (Center for Neighborhood Technology (CNT) and others) developed recommendations for MWRD in implementing the Green Infrastructure Program. According to the CNT commenters, their recommendations represent a comprehensive view of green infrastructure that “dovetails with other efforts by MWRD, including adoption of its Watershed Management Ordinance and support for improved recreation and aquatic life use protections in the Chicago Area Waterways.” (Ex. 7-2, CNT at 1, 2).

The CNT comments include constructive recommendations. The Governments provided the public comments on the Consent Decree to MWRD and encourage MWRD to consider those recommendations in developing the Green Infrastructure Plan. The Governments also suggest that MWRD research information on green infrastructure practices, performance and maintenance, and also review example green infrastructure plans developed for CSO control in other cities, including Cleveland (NEORS), New York City and Philadelphia.

The Governments anticipate that MWRD will integrate the Green Infrastructure Plan with existing water management policies, except to the extent the policies are updated as part of plan development. As referenced in Appendix E, Section V.C.ii of the Consent Decree, MWRD is developing a Watershed Management Ordinance for Cook County, one of the purposes of which is to manage stormwater, and the ordinance may include volume control and detention requirements which would drive green infrastructure practices, as appropriate. (Consent Decree

App. E, at 7). The Cook County Watershed Management Ordinance, and other projects initiated by communities in the MWRD service area (e.g. the green roof program noted in the Shaw Memorandum at page 14), are examples of other green infrastructure initiatives in the Chicago area aside from the Green Infrastructure Program in the Consent Decree.

H. The Consent Decree Negotiation Process

Both MWRD's development of TARP and EPA's decision to memorialize it without modification were made almost entirely behind closed doors and away from public scrutiny, in clear contravention of the wide-open public participation requirements of the CSO Policy. (Ex. 7-1, NRDC at 25).

The deference afforded to consent decree settlements should be diminished in this case. First, both TARP and the Consent Decree implementing it were developed completely out of view of the public eye. The Consent Decree was not lodged following a factual inquiry in the context of litigation, but was lodged together with a complaint serving merely as a vehicle for invoking judicial authority. Second, the stakes here are extraordinarily high. Both the MWRD service territory and the affected population within it are sizeable. The continuing and outrageous volumes of raw sewage pollution being dumped into the river on a regular basis are a clear threat to the Mayor's vision that the Chicago River be considered the City's second waterfront backed up by his committing to construct four new bathhouses on the river. The flooding and releases to Lake Michigan during heavy rainstorms, as have occurred repeatedly in recent years, represent an even greater threat to public well being. (Ex. 7-1, NRDC at 62-63).

Response

As discussed above, TARP is a highly visible public works project that has been subject to public scrutiny and input multiple times over the years. (*See generally* Section III.B. and Section V.A.2.b, above). The Consent Decree negotiations in this case were complex, very technical and conducted in numerous intensive negotiating sessions over the course of several years. That those negotiations were conducted in a confidential manner should be no surprise; that is the United States' uniform practice when seeking to settle enforcement matters. Contrary to the comment, there is no requirement in the CSO Policy to conduct such negotiations in public.

As the following decisions illustrate, courts have consistently found that the government's settlement negotiations are not required to be conducted in public and indeed will likely be more productive if they are not. "In a matter that was of significant concern to the public, it is doubtful that a public settlement conference would ever permit the type of give and take that would lead to an agreed resolution of the dispute." *United States v. Town of Moreau, New York*, 979 F. Supp. 129, 135 (N.D.N.Y. 1997). "In a perfect world, the public would be kept abreast of

all developments in the settlement discussions of lawsuits of public interest. In our world, such disclosure would ... result in no settlement discussions and no settlements.” *Id.* at 136. *See also United States v. Comunidades Unidas Contra La Contaminacion*, 204 F.3d 275, 277 (1st Cir. 2000) (court rejected citizens group intervenors’ objections to a settlement where the objections were based on a lack of participation by the intervenors in the negotiations).

During settlement negotiations with MWRD, the Governments met with NRDC, Sierra Club and the Prairie Rivers Network, as well as the Alliance and the Friends of the Chicago River, to discuss what they would like to see included in a consent decree. On December 22, 2011, the Department of Justice published a notice of lodging of the proposed Consent Decree in the *Federal Register*, and invited the public to submit comments on the settlement for a period of 30 days. (76 Fed. Reg. 79,710 (December 22, 2011)). In response to a requested extension from some citizens groups, the Department of Justice extended the public comment period an additional 60 days, thereby providing more time than required by federal regulation for public comment. (77 Fed. Reg. 2319 (January 17, 2012)). Some of the public comments received were lengthy and detailed, demonstrating that the public had sufficient opportunity for meaningful public participation. The Governments have carefully considered the extensive public comments received.

I. Comparison to Other CSO Settlements

The Consent Decree’s gray infrastructure requirements compare unfavorably to other communities’ requirements. (Ex. 7-1, NRDC at 57).

Most notably, the Consent Decree’s implementation time frame is more than double the longest time frame in any other consent decree. (Ex. 7-1, NRDC at 57-59).

Chicago’s future, as a livable community and a recreational destination, clearly depends on a vibrant and expeditious plan to control stormwater and prevent CSOs. The weak Consent Decree proffered by EPA, reflecting wholesale capitulation to the leisurely and incomplete action on the problem by MWRD, is not such a plan. (Ex. 7-1, NRDC at 63).

Response

The TARP completion schedule in the Consent Decree runs from 2011 to 2029, a period of 18 years. (Consent Decree ¶¶ 16, 17). Eighteen years is not more than double the longest time frame in any other consent decree. The LTCP implementation time frames in other consent

decrees cited by the commenters range from 17 years to 25 years. (Ex. 7-1, NRDC at 58, 59). The dates for completing those LTCPs range from 2025 to 2035.⁷⁴

The commenters count back to the adoption of TARP in 1972 in commenting that MWRD has an LTCP completion schedule that compares unfavorably to the completion schedules for other communities. (Ex. 7-1, NRDC at 59, 59 n. 206). Starting the LTCP completion schedule time clock at the adoption of TARP in 1972, rather than at the start of the Consent Decree schedule, essentially penalizes MWRD for its early initiatives to start the planning process to address CSOs well before most other communities.

The commenters also fail to recognize the enormous size of TARP in terms of tunnel and reservoir storage capacity and the impact that size has on the TARP construction schedule, compared to all other LTCPs in the country. Table 1, below, compares MWRD's LTCP with the gray infrastructure requirements in eleven other communities' LTCPs, most of which were cited favorably by the NRDC and Alliance commenters.⁷⁵

Community	Storage Volume for CSO Capture (million gallons (MG))	Combined Sewer Service Area (square miles)	Storage Volume (MG) Per Square Mile	Number of Outfalls Picked Up	LTCP Initiated	LTCP Expected Completion
Ft. Wayne	280	19	14.7	44	2001	2025
Kansas City	87	56	1.6	90	2008	2033
Indianapolis	250	55	4.5	134	2001	2025
St. Louis	262	75	3.5	199	1999	2034
Cleveland	314	75	4.2	126	2005	2035
New York	120 ⁷⁶	152	0.8	426	2007	2030
Cincinnati	56	78	0.7	208	2006	2018
Washington D.C.	193	20	9.7	60	2001	2025
Milwaukee	521	21	24.8	110	1977	2010
Portland OR	115	45	2.6	25	1990	2011
Philadelphia	N/A	65	N/A	164	1997	2036
MWRD	17,500	350	49.6	396	1975	2029

⁷⁴ See *United States and Ohio v. Northeast Ohio Regional Sewer District*, *United States v. Metropolitan St. Louis Sewer District*, *United States and Indiana v. City of Indianapolis*, *United States and Indiana v. City of Ft. Wayne* and *United States v. Kansas City, Missouri*.

⁷⁵ Information in Table 1 obtained from MWRD and used here for comparison purposes only.

⁷⁶ This amount does not include in-line storage in sewer system.

Upon completion, TARP will have the largest CSO storage volume of any LTCP in the country, by a substantial margin. (Ex. 4, Aistars Decl. ¶ 22). The McCook Reservoir will be the largest reservoir of its kind in the country. (Ex. 3, Padilla Decl. ¶ 12). TARP's storage volume for CSO capture, upon completion, will be approximately 17,500 million gallons.⁷⁷ The next largest LTCP storage volume listed in Table 1 is Milwaukee with 521 million gallons.⁷⁸ Cleveland (NEORS), with the third largest LTCP in Table 1, will ultimately construct a storage volume of 314 million gallons for CSO capture by 2035.⁷⁹ Given the substantial difference in the amount of construction involved, it is not surprising that the construction schedule for TARP would take much longer than for the other LTCPs.

The NRDC commenters compared TARP to LTCPs for five other communities, concluding that the proposed Consent Decree in this case required far less than the others and that the gray infrastructure requirements compared unfavorably, most notably with regard to the implementation schedule. (Ex. 7-1, NRDC at 57-59). However, as previously noted, the storage capacity currently available and to be constructed in TARP is substantially larger than NRDC commenters' comparable LTCPs and therefore, the construction schedule is longer.

One way to evaluate the pace of the construction schedule is by calculating the amount of storage capacity constructed as an annual average over the course of the project. For example, if MWRD completes TARP in 2029, on an annualized basis, the storage volume constructed for CSO capture will be 323 million gallons per year counting from the year MWRD commenced tunnel construction in 1975.⁸⁰ (Ex. 4, Aistars Decl. ¶ 23). By comparison, Cleveland (NEORS), the next largest LTCP in terms of storage capacity in the group of the NRDC commenters' "comparable" LTCPs, will have constructed CSO storage volume 11.3 million gallons per year, on an annualized basis. (*Id.*). At the Cleveland rate of 11.3 million gallons storage capacity constructed per year it would take MWRD 1,545 years to achieve the 17.5 billion gallon capacity of TARP.⁸¹ (*Id.* at 24).

This does not mean to suggest that comparing CSO LTCP schedules is necessarily appropriate, but if one compares schedules, the amount of construction, as shown in this instance by the CSO

⁷⁷ This figure is rounded from 17,456 million gallons.

⁷⁸ See *Deep Tunnel*, MMSD.com, <http://v3.mmsd.com/DeepTunnel.aspx> (last visited April 14, 2013).

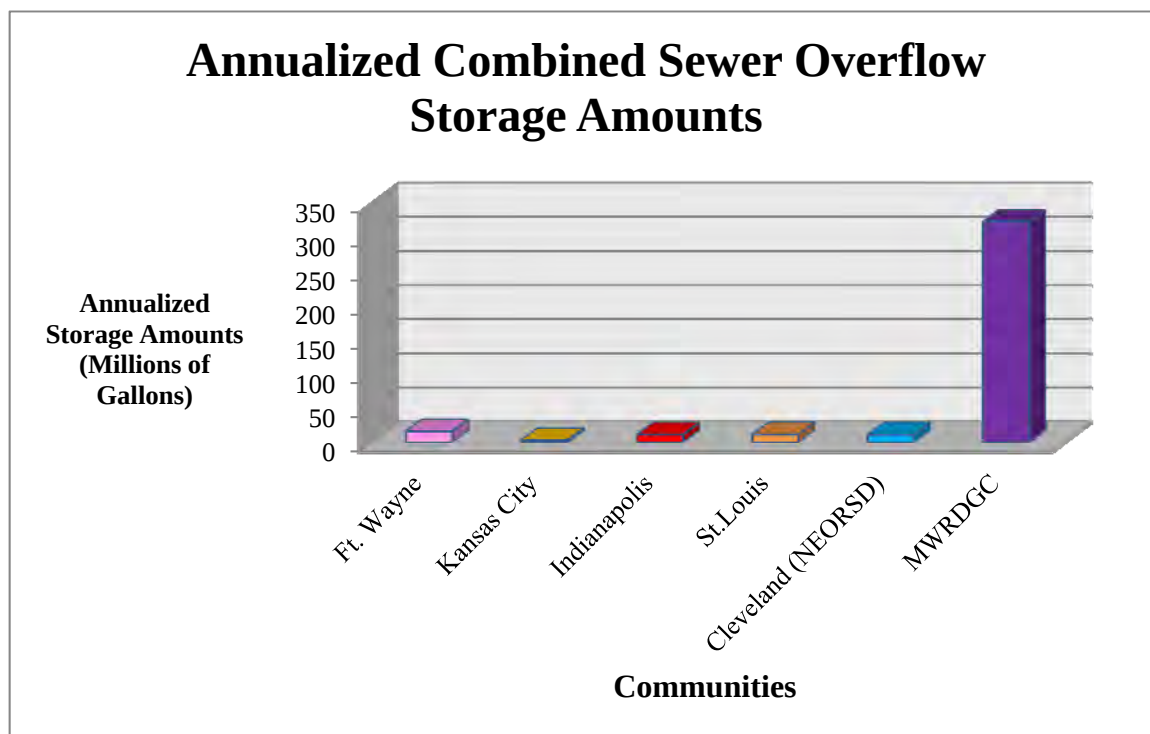
⁷⁹ NEORS also constructed tunnels (Mill Creek) prior to the consent decree in that case. See information about the Mill Creek tunnels at NEORS, *Mill Creek Tunnel System, Overview*, (Oct. 18-19, 2006), available at [http://www.cuyahogariverrap.org/Symposium_2006/d_Session 3/3_Mark Kritzer and Steve Januska_NEORS/Mill Creek Tunnel.pdf](http://www.cuyahogariverrap.org/Symposium_2006/d_Session%203/3_Mark%20Kritzer%20and%20Steve%20Januska_NEORS/Mill%20Creek%20Tunnel.pdf). The 70 million gallon storage capacity from those tunnels is not included in the 314 million gallon storage capacity requirement in the NEORS consent decree.

⁸⁰ EPA calculated an annual average amount of constructed storage capacity by dividing the total storage capacity of 17,456 million gallons by the number of years, 54. MWRD did not actually construct at that rate, but created substantially greater storage capacity some years and substantially less other years. The rate calculated for the annualized storage volume constructed for MWRD and the other communities is just for comparison purposes.

⁸¹ This also reflects, in part, funding availability and the very large storage volumes gained in reservoirs.

storage volume captured, must also be considered. The reasonableness of the schedule depends on the specific facts pertaining to the LTCP at issue. Due to TARP's substantially greater storage volume and associated increased construction, it is not comparable to the other LTCPs cited by the commenters and the schedule is consequently and necessarily longer.

The graph below shows the annualized storage amounts for MWRD and the five communities compared by NRDC commenters – Ft. Wayne, Indiana; Kansas City, Missouri; Indianapolis, Indiana; St. Louis, Missouri; and Cleveland, Ohio. (Ex. 5, Middleton Decl. ¶¶ 7-10).



According to the Alliance commenters, MWRD promised to complete TARP in 10 years, by 1982. (Ex. 7-7, Alliance at 7, 8; *see also* Ex. 7-1, NRDC at 21). The commenters cite to an initial 1972 report by the Flood Control Coordinating Committee, a committee made up of representatives from the State of Illinois, Cook County, MWRD and Chicago. Participating agencies, consultants and personnel also included the Corps and several nationally recognized engineering consulting firms. (Ex. 9, Flood Control Coordinating Committee, *Development of a Flood and Pollution Control Plan for the Chicagoland Area*, Dec. 1972). Indeed, the Flood Control Committee report recommended a 10 year construction program for adoption as the plan implementation schedule. (*Id.* at 24, 26). However, that initial planning recommendation was preliminary and came before any of the funding hurdles, plan revisions and reservoir siting

issues, among other issues noted above, began to emerge. (Ex. 3, Padilla Decl. ¶ 38). That recommended 10 year construction schedule was never placed in a permit, order or other enforceable document.⁸² From the present vantage point, it is clear that a 10 year construction schedule was excessively optimistic and in fact infeasible, equating to an annualized storage capacity construction rate of 1,750 million gallons per year. (Ex. 4, Aistars Decl. ¶ 25). EPA is not aware of any community that has constructed or is constructing storage capacity for an LTCP anywhere near that rate. (*Id.*). For example, construction at that rate would be more than 155 times faster than the Cleveland annualized rate of 11.3 million gallons of storage capacity construction per year. (*Id.*).

J. Other Comments

Commenters agree with the Governments' allegations but include additional examples of MWRD's violations: Lake Michigan WQS for fecal coliform as result of backflows to the lake in violation of Special Condition 5 and Standard Conditions 4 and 25; Permit Special Conditions 10.4 (optimize transport of wastewater flows), 10.5 (maximize treatment of wastewater flows) and 10.9.a (inflow and infiltration); Permit Standard Conditions 4 (minimize adverse affect to human health and environment) and 25 (compliance with water quality standards). (Ex. 7-7, Alliance at 18-24).

Response

The Alliance commenters describe several types of violations that they believe were violations by MWRD of conditions in MWRD's NPDES Permits.⁸³ The Governments did not include those allegations in their Complaint in this matter. (See Complaint ¶¶ 48-69). Importantly, the Consent Decree resolves only the civil claims of the United States and the State of Illinois for the violations alleged in the Complaint through the date of lodging. (Consent Decree ¶ 79). The United States declines to speculate on allegations not at issue here and neither endorses nor disputes commenters' statements regarding the permit requirements for violations not alleged in the Complaint or the factual basis of the allegations. In addition, neither the Alliance commenters nor the NRDC commenters included the permit violations alleged in the Alliance's comments in their Plaintiff-Intervenor Complaints in this case, except that the Alliance's complaint alleged that MWRD contributed to exceedances of Lake Michigan water quality

⁸² MWRD's NPDES Permits include a different schedule, for informational purposes only.

⁸³ For example, the Alliance commenters' allegation regarding failure to maximize treatment of wastewater flows at the Stickney WRP is premised on events resulting from a series of major storms in August 2007 which caused flooding in northeast Illinois and led to the first backflow to Lake Michigan in five years. According to the Alliance commenters' analysis, the backflow started on August 24, 2007. (Ex. 7-7, Alliance at 22). However, according to MWRD reports, and as indicated on Exhibit 9 of the Alliance's comment, the backflow at Wilmette started on August 23, 2007, the same day that more than 2.6 inches of rain fell in Wilmette. This factual difference is potentially significant in the analysis.

standards for fecal coliform in violation of Permit Special Condition 5. (Alliance Complaint, Dkt. No. 48, at ¶¶ 28-33, 61).

The Chicago River, in its natural state, flowed into Lake Michigan. In the early 1900s, the Metropolitan Sanitary District, predecessor to MWRD, reversed the flow of the Chicago River to flow away from Lake Michigan and into the Illinois River system, to protect Lake Michigan, Chicago's drinking water source. As part of the reversal, locks or sluice gates, otherwise known as "controlling works," were constructed at the mouths of three river connections to Lake Michigan. (Libby Hill, *The Chicago River: A Natural & Unnatural History*, pg. xiii, xiv, xv (Lake Claremont Press 2000)). As explained in the Corps Special Re-Evaluation:

[t]he controlling works along the Lake Michigan shore at Wilmette, at the mouth of the Chicago River, and at the Thomas J. O'Brien lock are used to divert water to and from Lake Michigan. During severe rainfall events, storm runoff is allowed to backflow into the lake to relieve high water levels in the canal system.

(Ex. 14, Corps, SRR and FEIS, Feb. 1999, at SRR-22).

MWRD's NPDES Permits require that MWRD notify IEPA whenever any waterway locks are opened which may allow flow to discharge to Lake Michigan. (Ex. 8, MWRD Calumet WRP and Stickney WRP 2002 NPDES Permits, S.C. 20, MWRD North Side WRP 2002 NPDES Permit, S.C. 21). Under the CSO notification plan developed pursuant to MWRD's NPDES Permits, MWRD must notify suppliers of potable water of CSOs that result in a reversal of the waterways into Lake Michigan at Wilmette Harbor, the Chicago River and Controlling Works and the O'Brien locks. (MWRD, *CSO Notification Plan*, Revised Dec. 2009).⁸⁴ The CSO Public Notification Plan also includes a website to inform the general public of the occurrences of CSOs on the Chicago area waterways, and of reversals or backflow events at the three controlling works into Lake Michigan. (*Id.*). In the thirteen year period from 2000 through April 2013, there have been ten reversals to the lake during the May through October boating season and four reversals during November through April.⁸⁵

TARP should be utilized for storm water and a separate sanitary system should be constructed. Methane gas from combined sewers cannot be eliminated as long as Chicago has combined sewers. (Ex. 7-5, C. Dieringer).

⁸⁴ Available at www.mwrld.org/irj/go/km/docs/documents/MWRD/internet/protecting_the_environment/Combined_Sewer_Overflows/htm/Combined_Sewer_Overflow.htm

⁸⁵ Some of those reversals occurred at more than one location during the same storm event. See http://www.mwrld.org/irj/go/km/docs/documents/MWRD/internet/protecting_the_environment/Combined_Sewer_Overflows/pdf/Reversals.pdf

Response

As noted above, MWRD, as part of the Flood Control Coordinating Committee, evaluated over 20 alternatives before adopting TARP in the early 1970s. One of the alternatives evaluated, sewer separation, was not selected because: (1) the cost, including all public sewers and plumbing alterations in both private and public buildings was estimated at upwards of \$4 billion at the time; and (2) the disruption of public streets and required plumbing alterations would be enormous and would result in no flood control. (Ex. 9, Flood Control Coordinating Committee *Development of a Flood and Pollution Control Plan for the Chicagoland Area*, Dec. 1972, at 8). EPA notes that methane gas can also be present in separate sanitary sewers, typically in greater concentrations. (Ex. 4, Aistars Decl. ¶ 17).

It is time for Chicago to take care of its own sanitary sewage; not in their river, not in Lake Michigan and not in the Thornton quarry. MWRD must expand and upgrade the water reclamation plants and build new sewage treatment plants. (Ex. 7-10, K. Armstrong at 2).

Response

TARP is the CSO LTCP for the Chicago area, including Chicago and 51 other satellite communities. TARP was developed by local, regional, state and federal governments as “a regional plan for improving water quality and reducing flood damages.” (Ex. 14, Corps, SRR and FEIS, Feb. 1999, at Exec-3). Based on analysis of alternatives, the Corps concluded, among other things, that a “systematic, regional approach” was needed to “effectively reduce the combined sewer back up flooding problem.” (Ex. 12, Corps, Feasibility Report, Dec. 1986, at 2). The purpose of TARP is to temporarily store the excess wet weather flows (rain and snowmelt) that can overwhelm the sewer system causing CSOs and flooding. In addition to the fact that TARP, with its reliance on CSO storage capacity, was adopted and approved many years ago as MWRD’s LTCP, if new sewage treatment plants were built solely to treat billions of gallons of storm water, they would sit idle most of the time when there are no wet weather events. (Ex. 4, Aistars Decl. ¶ 18).

A ventilation system is necessary to prevent explosions in TARP. (Ex. 7-5, C. Dieringer).

Response

TARP has vents in various locations and parts of TARP have been on-line and operating since 1980. (Ex. 4, Aistars Decl. ¶ 26).

The figure below shows an example of airflow into and out of a TARP drop shaft.

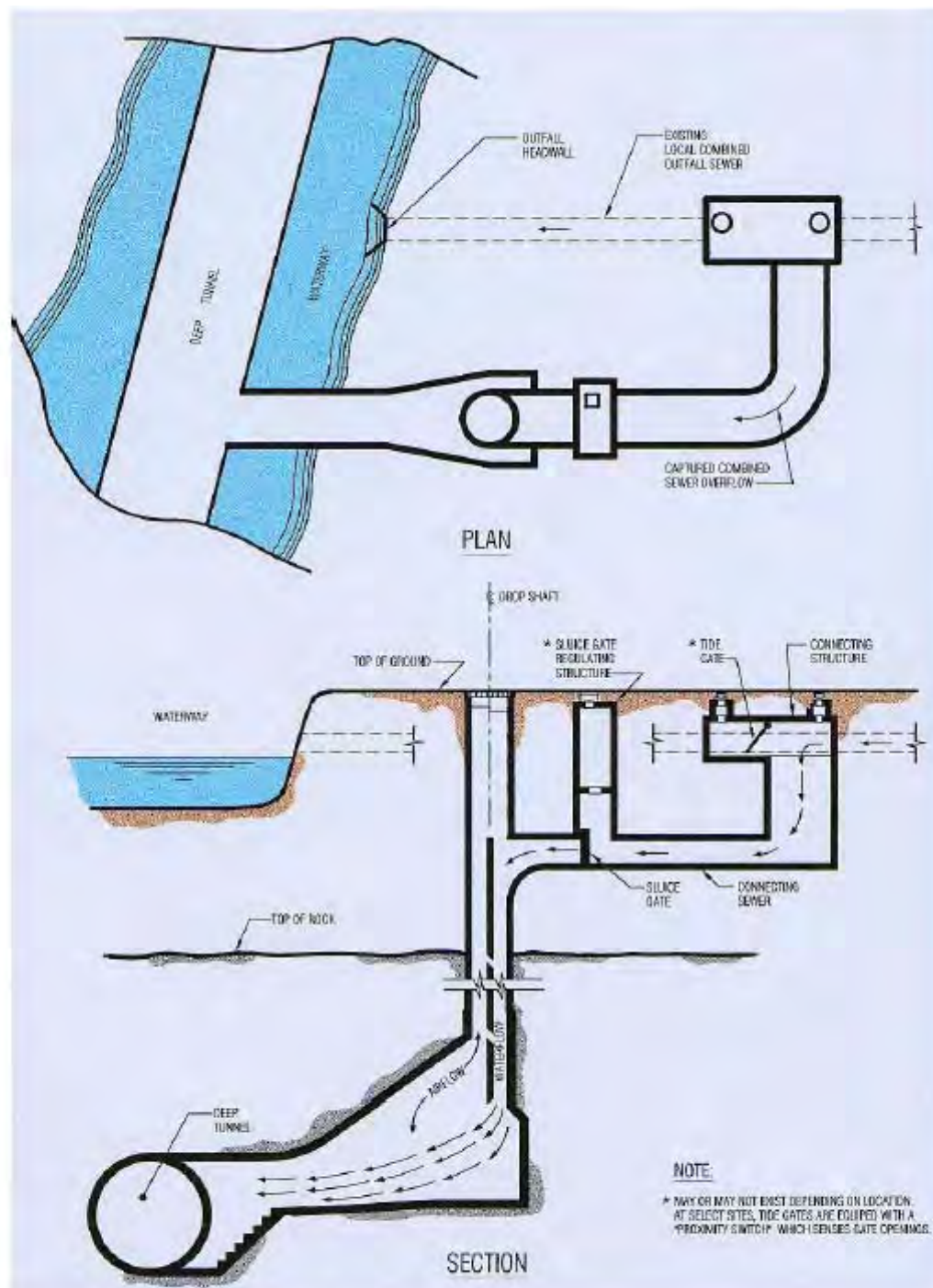


Figure 4: Drop Shaft Schematic

(Consent Decree App. A, at Figure 4).

The blasting and mining at the Thornton Composite Reservoir site will continue for many years. (Ex. 7-5, C. Dieringer).

Response

Mining for the Thornton Composite Reservoir is more than 94 percent completed. Pursuant to the schedule in the Consent Decree, mining is scheduled to be completed by December 31, 2013, less than 12 months from now. (Consent Decree ¶ 16(a)).

The process should receive further review based upon recent changes to the Great Lakes, revised rainfall data and a more thorough public vetting. (Ex. 7-5, C. Dieringer).

Response

It is not clear from the comment which process the commenter believes should receive further review and a more thorough public vetting. The process for developing TARP was very thorough, with additional review from multiple agencies and the public, as discussed above. The “recent changes to the Great Lakes” and revised rainfall data referred to in the comment are not specifically identified and thus do not provide a basis for new analysis.

Combined flows stored in Thornton Composite Reservoir could leach or spill into the other Thornton mining areas and then be pumped into Thorn Creek. What type of seepage evaluation will be performed upon the Thornton [Composite Reservoir]? (Ex. 7-5, C. Dieringer).

Why does the Consent Decree omit any discussion of the damage to the aquifer adjacent to the Thornton Reservoir? The attempts by MWRD and the Corps to prevent contamination by sanitary sewage from Chicago into the source of our water have been unconvincing. Mechanical brushes to clean the solids off the reservoir walls? Concrete curtains with no consideration of earthquakes? Skimmer boats? These proposals lack any real intent to protect the aquifer or to maintain livable neighborhoods. (Ex. 7-10, K. Armstrong at 1).

Response

Grout curtains are being constructed around the perimeters of the Thornton Composite and McCook Reservoirs, creating a hydraulic barrier between the reservoirs’ rock walls and the surrounding groundwater. (Consent Decree App. A, at 7, 8, 12). MWRD has installed groundwater monitoring wells in various locations in the vicinity of TARP, including the

Thornton Transitional Reservoir. Further, MWRD analyzes data collected from the monitoring wells, which is provided in annual reports.⁸⁶

There is no comparable site on this planet where this process has been successfully attempted. (Ex. 7-5, C. Dieringer).

Response

The Upper Des Plaines TARP System has been completed and in operation since 1998. The Calumet and Mainstream/Lower Des Plaines tunnel systems of TARP were completed and in operation in various stages by 2006, with many tunnel portions on-line beginning in the 1980s. Many other cities have built or are building deep tunnel storage for combined sewer flows – for example, Milwaukee, Washington D.C., Indianapolis and Cleveland (NEORS).

I write to you to state that I wish for justice in procuring a cleaner, healthy Chicago River. As a rower ensuring this clean body of water is critical! (Ex. 7-4, J. di Giamberdine).

Response

EPA shares the commenter's interest in a cleaner Chicago River. The fundamental purpose of the Consent Decree is to bring MWRD's CSO discharges into compliance with the CWA, thereby resulting in cleaner water bodies, including the Chicago River. As stated in the Purpose Section of the Consent Decree:

It is the express purpose of the Parties in entering this Consent Decree to further the objectives of the [CWA], as enunciated in Section 101 of the [CWA], 33 U.S.C. § 1251 *et seq.*, and the objectives of the Illinois Environmental Protection Act, 415 ILCS 5/1 *et seq.* All plans, reports, construction, maintenance and other obligations in this Consent Decree or resulting from the activities required by this Consent Decree shall have the objective of causing MWRD to come into and remain in full compliance with the terms of its Calumet, North Side and Stickney NPDES Permits, as applicable to CSO discharges, including water quality standards, and as required by 33 U.S.C. § 1342(q)(1) to meet the objectives of EPA's Combined Sewer Overflow Control Policy, as these terms are defined in Section IV (Definitions) of this Consent Decree.

(Consent Decree ¶ 7). As discussed in more detail above, by implementing the Floatables Control Program and the Green Infrastructure Program, and by requiring completion of TARP, among other requirements, the requirements in the Consent Decree will lead to cleaner waters.

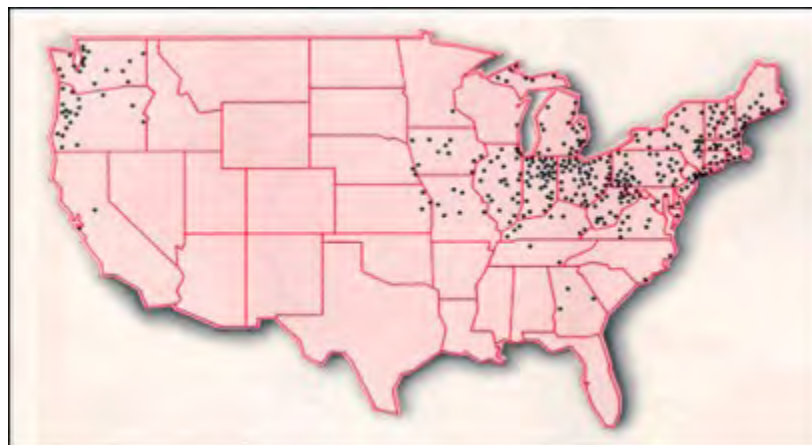
⁸⁶ These reports, M&R Data and Reports, TARP Groundwater Monitoring Reports, are available to the public at <http://www.mwr.org>. See, e.g., MWRD *Tunnel and Reservoir Plan Thornton Transitional Flood Control Reservoir Water Quality Monitoring Wells 2010 Annual Groundwater Monitoring Report*, July 2011.

Chicago is the only major city in the country that has a combined sewer system. (Ex. 7-5, C. Dieringer).

Combined sewers are a bad idea. Did twentieth century Chicago avoid the proper treatment of their sewage to save money or did they want to impress the world with something different? (Ex. 7-10 K. Armstrong, at 1).

Response

Combined sewer systems serve roughly 772 communities across the United States, mostly in the Northeast and Great Lakes regions, as well as the Pacific Northwest. Many of those communities are large cities, including New York City, Boston, Philadelphia, Cleveland, Indianapolis, Milwaukee and Washington D.C.⁸⁷ Cities with combined sewer systems are shown as dots on the map below.⁸⁸



Commenters are asking the Governments to withdraw and rethink their settlement. The history of this matter makes clear that a decision not to enter the Consent Decree would delay nothing – by virtue of the simple fact that the Consent Decree does nothing more than implement MWRD’s own existing plan and timetable. Rejecting the Consent Decree and developing one that fully implements the requirements of the CSO Policy, however, could well result in a more thorough and expeditious cure for Chicago’s stormwater ills. (Ex. 7-1, NRDC at 63).

⁸⁷ See *Combined Sewer Overflows, Demographics*, USEPA.gov, http://cfpub.epa.gov/npdes/cso/demo.cfm?program_id=5 (last visited April 14, 2013).

⁸⁸ The map is from EPA’s website at http://cfpub.epa.gov/npdes/cso/demo.cfm?program_id=5

Response

The Consent Decree would resolve the CWA claims relating to CSO discharges brought by the United States and the State of Illinois, without the need for extensive litigation. Given the years of intensive negotiations required to reach the proposed settlement embodied in the Consent Decree, the Governments would expect MWRD to vigorously contest the claims alleged in the Governments' Complaint, were the United States to withdraw from the Consent Decree. In addition to a commitment to fully implement TARP, the Consent Decree also secures the following commitments from MWRD that would be delayed if not lost altogether if the Governments withdrew the Consent Decree.

The Floatables Control Program. The Floatables Control Program of the Consent Decree requires that MWRD purchase two skimmer boats, technology vastly superior to MWRD's current method of picking up floatables using pontoon boats and nets. (Consent Decree App. B, at 3-4). The Floatables Control Program requires MWRD to reduce floatables by deploying boats to pick up floatables in response to CSOs, within 24 hours after conclusion of the rain event causing the CSO, year round, a much more rigorous and responsive schedule than the current operation. (*Id.* at 1). Additionally, implementation of the containment boom that MWRD must install on Addison Creek to collect floatables would be further delayed or lost by not entering the Consent Decree. (*Id.* at 4).

The Green Infrastructure Program. The Consent Decree's Green Infrastructure Program contains many requirements that would be further delayed or lost if the Consent Decree were not entered. The Early Monitoring, Evaluation and Knowledge Building section requires MWRD to implement green infrastructure projects within one year of the effective date of the Consent Decree. (Consent Decree App. E, at 2). Another early action requirement, the Rain Barrel program, would also be delayed. While MWRD currently sells rain barrels, there is no requirement to sell a minimum number of 10,000 low or no-cost rain barrels within three years of the effective date of the Consent Decree, with a cumulative distribution of 15,000 such rain barrels within five years, as required in the Consent Decree. (*Id.* at 1).

In addition, MWRD must submit to the Governments for approval a Green Infrastructure Plan within one year after the effective date of the Consent Decree. As part of the Green Infrastructure Plan, MWRD must develop and submit the Comprehensive Land Use Policy for land owned by MWRD. (*Id.* at 2). Under that policy, MWRD must incorporate requirements and incentives for public and private leaseholders, respectively, to install green infrastructure projects on property leased from MWRD. As that policy would apply to new or renewed leases on MWRD-owned property, not only would application of the policy be delayed, but any leases, new or renewed prior to implementation of the policy would not be included. As discussed above, the Green Infrastructure Plan also requires that MWRD implement green infrastructure

projects that provide a minimum of 10 million gallons of design retention capacity in an individual storm. (*Id.* at 4, 5). Thus, not only would the Green Infrastructure Plan development, submittal and Government review be delayed, but planning and construction of the green infrastructure projects by MWRD and/or collaborators would also be delayed. In addition, numerous community outreach and planning aspects of the Green Infrastructure Plan would be delayed such as: green infrastructure community assistance, establishing partnerships and collaboration with other stakeholders and developing legal and institutional mechanisms to preserve and maintain constructed green infrastructure projects. (*Id.* at 3, 4).

Post Construction Monitoring Plan. The requirement to develop and submit a post construction monitoring plan for the Calumet TARP System within one year of the effective date of the Consent Decree would be delayed. (Consent Decree ¶ 35(a)). If MWRD completes the Calumet TARP System in 2015 and there is no approved post construction monitoring plan, evaluation and analysis of that system would be delayed.

TARP Completion Schedule. Although MWRD has been constructing TARP without entry of the Consent Decree, there is no currently enforceable schedule for completion of TARP. That could result in longer completion schedules for the Thornton Composite and McCook Reservoirs and therefore delayed completion of the corresponding Calumet and Mainstream/Lower Des Plaines TARP Systems. Additionally, as discussed above, the commenters' suggestions regarding the TARP completion schedule, such as breaking the current mining contracts, could actually increase the length of the schedule. The lack of an enforceable schedule for completing TARP was the primary reason for the Governments to seek a judicial order in this case.

Other Key Provisions Impacted by Delay. In addition, the effectiveness of many other beneficial requirements of the Consent Decree would be delayed if the preceding provisions listed above are delayed:

- TARP Performance Criteria;
- Revision of TARP operating plans to incorporate the TARP performance criteria;
- Post construction monitoring;
- Development and submittal of post construction monitoring reports;
- EPA and IEPA review of MWRD post construction monitoring reports;
- The requirement for MWRD to develop and submit a plan analyzing the alternatives to come into compliance, if EPA or IEPA finds that any remaining MWRD CSOs are violating CSO requirements of the applicable NPDES Permits; and
- Green infrastructure projects implemented pursuant to the Green Infrastructure Program.

(*Id.* at ¶¶ 28(a) – (g), 29(a) – (g), 35(d), 36(a) – (c), 43).

Glossary of Terms Used in the Responsiveness Summary

Aggregate – crushed stone, sand and gravel and other materials used in construction

Combined sewer system – a wastewater collection system owned by a state or municipality that conveys sanitary wastewaters (domestic, commercial and industrial wastewaters) and storm water through a single pipe system to a wastewater treatment facility

Combined sewer outfall – the outfall pipe that carries the combined sewer overflow

Combined Sewer Overflow (CSO) – the portion of flow from a combined sewer system that discharges into a water body from an outfall located upstream of a wastewater treatment plant, usually during a rainfall event

Crushed stone – rock that is crushed to a specific size in a quarry processing plant

Crusher - machines used to break big rocks down into smaller rocks

CSO Policy – EPA Combined Sewer Overflow Control Policy issued April 19, 1994

Drop shafts – shaft or conduit connecting interceptor sewers to TARP tunnels; see Consent Decree, App. A, Figure 4, Drop Shaft Schematic

Evapotranspiration – loss of water from the soil both by evaporation and by transpiration from the plants growing on the soil

Floatables – floating debris from combined sewers, including sanitary sewers, storm sewers and windblown trash

Floatables Control Program - program required by Paragraph 18 of the Consent Decree and set forth in Appendix B

Gray infrastructure - engineered structural control practices such as tunnel systems, storage tanks, sewer systems, wastewater treatment plants, and pump stations to control CSO discharges, that are not green infrastructure

Green infrastructure - the range of storm water control measures that use plant/soil systems, permeable pavement, storm water harvest and reuse, or native landscaping to store, infiltrate, and/or evapotranspire storm water and reduce flows to the sewer systems or to surface waters

Green Infrastructure Program – program required by Section XI of the Consent Decree and set forth in Appendix E of the Consent Decree

Green Infrastructure Plan – plan required in the Green Infrastructure Program set forth in Appendix E of the Consent Decree

Infiltration – in the context of green infrastructure, infiltration refers to storm water that seeps into the soil

Interceptor sewer – a sewer without building sewer connections which is used to collect and carry flows from main and trunk sewers to a central point for treatment and discharge

Long Term Control Plan (LTCP) – required by EPA’s CSO Policy, a plan that CSO permittees must develop and implement to control CSOs to attain compliance with the requirements of the CWA

Nine minimum controls (NMCs) – controls that can reduce CSOs and their effects on receiving water quality, do not require significant engineering studies or major construction, and can be implemented in a relatively short period (*e.g.*, less than approximately two years)

NPDES permit – National Pollutant Discharge Elimination System permit issued pursuant to Section 402 of the CWA, 33 U.S.C. §1342

Skimmer boat – a boat specially designed to collect floating debris; can have several designs, including being equipped with moving screens on a conveyor belt system to separate floatables from the water or lowering a large net into the water to collect materials

Sluice gate – a gate that controls the rate of water flow through a sluice or conduit; see Consent Decree App. 4, Figure 4, Drop Shaft Schematic

Tunnel and Reservoir Plan (TARP) – MWRD’s LTCP for controlling CSOs, localized flooding and basement flooding

Trash collection boat – a boat used to pick up floatables, trash or other floating debris, similar in purpose to a skimmer boat

Water reclamation plant – wastewater treatment plant

Exhibits to Responsiveness Summary in *U.S. and Illinois v. MWRD*

EXHIBIT NO.	DESCRIPTION
1	Declaration of William Langer
2	Declaration of Dr. Subhash Bhagwat
3	Declaration of Michael Padilla
4	Declaration of Valdis Aistars
5	Declaration of Keith Middleton
6	TARP Development, Construction and Implementation Timeline
7-1	Natural Resources Defense Council, et al., Comments on Proposed Consent Decree
7-2	Center for Neighborhood Technology, et al., Comments on Proposed Consent Decree
7-3	Henrietta Saunders Comments on Proposed Consent Decree
7-4	Justin di Giamberdine Comments on Proposed Consent Decree
7-5	Charles Dieringer Comments on Proposed Consent Decree
7-6	Michael Sinner Comments on Proposed Consent Decree
7-7	Alliance for the Great Lakes, et al., Comments on Proposed Consent Decree
7-8	Jennifer Roche Comments on Proposed Consent Decree
7-9	Chris Hodak Comments on Proposed Consent Decree
7-10	Katherine Armstrong Comments on Proposed Consent Decree
8	MWRD Calumet WRP, North Side WRP and Stickney WRP NPDES Permits
9	Flood Control Coordinating Committee, <i>Development of a Flood and Pollution Control Plan for the Chicagoland Area, The Chicago Underflow Plan</i> , Dec. 1972
10	Senate Public Works Committee Resolution, 1973
11	EPA Memorandum, Jul. 1975
12	U.S. Army Corps of Engineers (Corps), <i>Feasibility Report and Environmental Assessment</i> , Dec. 1986
13	Corps, <i>Chicagoland Underflow Plan, McCook Reservoir, Special Re-Evaluation Report</i> , Oct. 1996
14	Corps, <i>Chicago Underflow Plan McCook Reservoir Special Re-Evaluation Report and Final Environmental Impact Statement</i> , Feb. 1999
15	Vulcan Materials Company, TARP Project Presentation to MWRD, Oct. 13, 1994
16	Corps, <i>Chicagoland Underflow Plan, McCook Reservoir, Illinois Design Memorandum</i> , Aug. 1994
17	Newspaper Article - <i>Water Plan Smells Bad to Lipinski</i> , Chicago Sun-Times, Jul. 27, 1994
18	Newspaper Article - <i>Don't Rush the Deep Hole Project</i> , Chicago Tribune, Aug 31, 1994

Exhibits to Responsiveness Summary in *U.S. and Illinois v. MWRD*

EXHIBIT NO.	DESCRIPTION
19	MWRD Letter to the Corps, Oct. 21, 1994
20	Newspaper Article - <i>McCook Reservoir Vote Stalled</i> , Chicago Tribune, Sep. 2, 1994
21	Newspaper Article - <i>Reservoir Plan on the Ropes</i> , Chicago Sun-Times, Oct. 14, 1994
22	Newspaper Article - <i>Water District Selects Smaller Reservoir Plan</i> , Chicago Tribune, Oct. 21, 1994
23	Newspaper Article - <i>McCook Reservoir Plan Defeated</i> , Chicago Sun-Times, Oct. 21, 1994
24	Newspaper Article - <i>Push to Buy McCook Pit Could End up in Court</i> , Chicago Tribune, Jan. 16, 1995
25	Corps, <i>Chicagoland Underflow Plan, McCook Reservoir, Special Re-Evaluation Report and Final Environmental Impact Statement</i> , Oct. 1998
26	Project Cooperation Agreement for McCook Reservoir
27	Corps, <i>Design Documentation Report, Main Report, Chicago Underflow Plan, McCook Reservoir Illinois</i> , Nov. 1999
28	MWRD, TARP Status Report for 2009
29	Vulcan Contract, Oct. 2003
30	EPA/DOJ 2003 Memorandum
31	MWRD Calumet WRP and North Side WRP NPDES Permits issued in 1988
32	MWRD TARP Operational Plan, Sep. 26, 1989
33	IEPA Letter to MWRD, Jun. 28, 1995
34	List of Federal Register Notices pertaining to TARP
35	MWRD Letter to IEPA, Oct. 31, 1996
36	Letter from D. Bryson of the Alliance for the Great Lakes to T. Frevert, IEPA, undated
37	MWRD Letter to IEPA, Jan. 9, 2007
38	NRDC Shaw Memorandum
39	NRDC Comments on Proposed Consent Decree in <i>U.S. v. NEORS</i>
40	Aerial Photographs of McCook Reservoir and Thornton Composite Reservoir Sites