March 14, 2016

Conference of Great Lakes and St. Lawrence Governors and Premiers
20 N. Wacker Drive, Suite 2700
Chicago, Illinois 60606

Re: Technical Review and Preliminary Final Environmental Impact Statement on the City of Waukesha's Diversion Application

Dear Conference of Great Lakes and St. Lawrence Governors and Premiers:

The Compact Implementation Coalition; its regional partners, the National Wildlife Federation, Natural Resources Defense Council, and Alliance for the Great Lakes; and the Wisconsin League of Conservation Voters submit the attached comments on the proposal by the City of Waukesha ("the City" or "Waukesha") to divert water from the Great Lakes Basin.

Waukesha's proposed diversion is the first one to test the effectiveness of the Great Lakes – St. Lawrence River Basin Water Resources Compact ("Compact"). Wisconsin and its sister Great Lakes States agreed then that "the protection of the integrity of the Great Lakes – St. Lawrence River Basin Ecosystem" is the "overarching principle" of the Compact, and they agreed that they must adhere to this principle in reviewing proposals to divert water from the Great Lakes Basin in order to protect the integrity of the Basin Ecosystem. Accordingly, the Compact States agreed to use caution in determining whether a proposed diversion meets the Compact's stringent criteria for approval.

The enclosed detailed review of Waukesha's proposal, which includes reports by expert engineering firms and analysts, compels the conclusion that Waukesha has failed to meet the Compact's criteria for approval. The Wisconsin Department of Natural Resources' ("DNR's") recommendation to the Regional Body and Compact Council fails to rebut this conclusion.

Waukesha's proposal fails to satisfy the Compact criteria necessary to approve the proposed diversion of water from Lake Michigan in the following ways:

- The proposal is not based on any need for water by a community in a straddling county, but on a purported need for water by a proposed water supply service area plan, which includes communities other than Waukesha that do not meet the Compact's criteria for approval, including the most basic criterion of lacking a potable water supply;

- Reasonable alternatives to the proposal exist, including alternatives that were not considered by the City or the State;

- The proposal does not incorporate adequate water conservation;

- The proposal does not appropriately manage return flows to protect public health and the Basin ecosystem; and

- Waukesha has not shown that the proposed diversion will result in no significant or cumulative adverse impacts.

For these reasons, the Regional Body should adopt the enclosed declaration of findings and should reject the proposal.

Every person in Wisconsin (and indeed throughout the Great Lakes Basin and beyond) is entitled to a ready supply of clean, healthy, safe water, now and in the future. Waukesha has access to such a supply in its existing wells if the city invests in additional water treatment infrastructure. This non-diversion solution would cost much less than the proposed diversion, secure water independence for Waukesha, protect public health, and minimize adverse resource impacts. Above all, it would stay true to the Compact's overarching principle: to protect the integrity of the Basin Ecosystem. That will benefit not just the residents of Waukesha and Wisconsin, but every person in the Great Lakes States.

Because Waukesha has not satisfied the Compact's and Wisconsin's stringent criteria for approval, the Compact Council must deny Waukesha's proposed diversion of water from Lake Michigan.

Thank you for this opportunity to comment.

On behalf of the Compact Implementation Coalition,

Molly Flanagan
Alliance for the Great Lakes

Jodi Habush Sinykin
Midwest Environmental Advocates

Mark Redsten
Clean Wisconsin

Cheryl Nenn
Milwaukee Riverkeeper

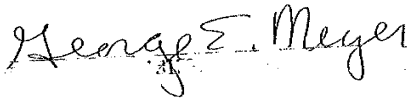
Peter McAvoy
Of Counsel

Marc Smith
National Wildlife Federation

Karen Hobbs
Natural Resources Defense Council

Steve Schmuki
Waukesha County Environmental Action League

Kerry Schumann
Wisconsin League of Conservation Voters



George Meyer
Wisconsin Wildlife Federation

Joint Comments of the Wisconsin Compact Implementation Coalition, National Wildlife Federation, Natural Resources Defense Council, Alliance for the Great Lakes and Wisconsin League of Conservation Voters on the Technical Review and Preliminary Final Environmental Impact Statement on the City of Waukesha's Diversion Application

TABLE OF CONTENTS

Joint Comments of the Wisconsin Compact Implementation Coalition, National Wildlife Federation, Natural Resources Defense Council, Alliance for the Great Lakes, and Wisconsin League of Conservation Voters on the Technical Review and Preliminary Final Environmental Impact Statement on the City of Waukesha's Diversion Application

I. OVERVIEW

The Compact Implementation Coalition ("CIC") and its regional partners, the National Wildlife Federation ("NWF"), Natural Resources Defense Council ("NRDC"), and Alliance for the Great Lakes ("AGL"), submit the attached comments on the Wisconsin Department of Natural Resources' ("DNR's") Technical Review and preliminary Final Environmental Impact Statement ("FEIS") on the City of Waukesha's Diversion Application.

Waukesha's proposed diversion is the first one to test the effectiveness of the Great Lakes – St. Lawrence River Basin Water Resources Compact ("Compact"). At the time of adoption, Wisconsin and its sister Great Lakes States agreed then that "the protection of the integrity of the Great Lakes – St. Lawrence River Basin Ecosystem" is the "overarching principle" of the Compact, and they agreed that they must adhere to this principle in reviewing proposals to divert water from the Great Lakes Basin in order to protect the integrity of the Basin Ecosystem.[1] Accordingly, the Compact States agreed to use caution in determining whether a proposed diversion meets the Compact's stringent criteria for approval, which Wisconsin has made even more stringent in several instances.[2]

DNR has not exercised the requisite caution in determining whether Waukesha's proposed diversion meets these criteria. Contrary to DNR's review and preliminary findings, Waukesha's proposal fails to satisfy the criteria necessary to approve the city's proposed diversion of water from Lake Michigan in the following ways:

- Waukesha has not shown that either it or the other communities included in the city's application do not have adequate supplies of potable water;
- Waukesha has not shown that there are no reasonable alternatives to the proposed diversion;
- Waukesha has not shown that the proposed diversion will be implemented to incorporate water conservation measures;
- Waukesha has not shown that the proposed diversion appropriately manages return flows; and
- Waukesha has not shown that the proposed diversion will result in no significant or cumulative adverse impacts.

[1] Compact, art. 4, § 4.5.1.d.
[2] *Id.* at § 4.9.3.e.

In addition, DNR has not complied with the Wisconsin Environmental Protection Act because its FEIS fails (1) to examine an important and reasonable alternative, and (2) to dispel significant uncertainty regarding important aspects of Compact compliance. These failures significantly undermine informed and meaningful decision-making and public participation.

For these reasons, expounded in detail in the comments that follow, the CIC and its regional partners, NWF, NRDC, and AGL, submit that the Council must deny Waukesha's proposal for a diversion of water from Lake Michigan.

II. COMMENTERS

The Compact Implementation Coalition ("CIC"), collectively representing tens of thousands of Wisconsinites, has a long history of working on the Compact. From ensuring the adoption and implementation of a strong Compact to aiding the DNR in the promulgation of administrative rules to implement the Compact, the CIC has passionately and consistently advocated for the strongest protections possible for the waters of the Great Lakes, in keeping with the spirit and the letter of the Compact.

CIC's mission is to ensure a thorough legal, economic, environmental and ***public*** review of the first application for an out-of-basin diversion of Great Lakes waters under the Compact, in full recognition of the precedent-setting impact of this first application. To that end, the CIC advocates for strict adherence to the Compact's exacting standards.

Member organizations of the Compact Implementation Coalition include: Clean Wisconsin, Midwest Environmental Advocates, Milwaukee Riverkeeper, Waukesha County Environmental Action League, Wisconsin Wildlife Federation, and Peter McAvoy, of Counsel.

The National Wildlife Federation is America's largest conservation organization, inspiring Americans to protect wildlife for our children's future. Since 1982, NWF's Great Lakes Regional Center has been a leader in protecting the Great Lakes for the wildlife and humans that depend on this invaluable resource.

The Natural Resource Defense Council is an international, nonprofit environmental organization with more than 2.4 million members and online activists. More than 107,000 of these members and online activists live in the eight Great Lakes states, including more than 8,000 in Wisconsin.

The Alliance for the Great Lakes is a nonprofit organization that has advocated on behalf of the Great Lakes and the people who enjoy them for decades. The Alliance's mission is to conserve and restore the world's largest freshwater resource using policy, education, and local efforts, ensuring a healthy Great Lakes and clean water for generations of people and wildlife

III. GENERAL PRINCIPLES

A. The Compact Is The Governing Law, Except To The Extent Wisconsin Law Is More Restrictive

The Compact and Wisconsin law implementing the Compact prohibit all new diversions of water outside of the Great Lakes Basin, with limited, narrow exceptions.[3] One exception is "A Proposal to transfer Water to a Community within a Straddling County that would be considered a Diversion under this Compact."[4] Waukesha seeks to take advantage of this exception, which means it has to demonstrate that its application satisfies both Compact §§ 4.9.3 and .4, and Wis. Stat. § 281.346(4)(e) and (f).

The Compact establishes the minimum requirements,[5] providing that each state … shall manage and regulate … Exceptions … in accordance with this Compact."[6] No state may approve a diversion if the state determines that the diversion "is inconsistent with this Compact or the Standard of Review and Decision."[7] For purposes of Waukesha's proposal, the "Standard of Review and Decision" is the Exception Standard found in Compact § 4.9.4.[8] and Wis. Stat. § 281.346(4)(e) & (f).

In ratifying the Compact, Wisconsin expressly agreed to abide by the Compact's minimum requirements.[9] However, the state has implemented more restrictive laws and regulations, as allowed by the Compact.[10] For instance, the Compact only requires an applicant to demonstrate that water from outside the basin, when returned to the basin, will be "treated to meet applicable water quality discharge standards."[11] This requirement might be satisfied by a condition attached to an approval of a proposed diversion requiring the applicant to get a Wisconsin Pollutant Discharge Elimination System ("WPDES") permit after the application has been approved. But Wisconsin's statute does not allow a demonstration of compliance with water quality standards to be deferred. Instead, it expressly makes the issuance of a WPDES permit a prerequisite to approval of a diversion.[12]

Because Wisconsin has implemented more restrictive measures – like the measure regarding return flows, Waukesha's application may not be approved unless it meets the more restrictive measures, even if it meets the Compact's Standard of Review and Decision.[13] Each of

---

[3] Compact art. 4, § 4.8; Wis. Stat. § 281.346(4).
[4] Compact, art. 4, § 4.9.3; Wis. Stat. § 281.346(4)(e).
[5] Compact, art. 4, §§ 4.3.1 and .3, 4.12.1.
[6] Compact, art. 4, § 4.3.1.
[7] Compact, art. 4, § 4.3.3.
[8] Compact, art. 1, § 1.2.
[9] Wis. Stat. § 281.343(1b), (4d)(a) and (c).
[10] Compact, art. 4, § 4.12.1.
[11] Compact art. 4, § 4.9.4.c.ii.
[12] Wis. Stat. §§ 281.346(4)(e)1.b. (DNR may approve a new diversion if "all the following apply: … The proposal meets the exception standard under par. (f).") *and* 281.346(4)(f)4.b. ("A proposal meets the exception standard if all of the following apply: … No water from outside the Great Lakes basin will be returned to the source watershed unless … The returned water will be treated to meet applicable permit requirements under s. 283.31 … and the department has *approved* the permit under s. 283.31.") (emphasis added).
[13] *See* Compact art. 4, § 4.12.1.

Wisconsin's more restrictive measures will be identified and addressed in detail where appropriate in the balance of these comments.

B. Waukesha Must Establish That A City, Village, Or Town Meets The Compact's Standard Of Review And Decision

Waukesha claims the proposed diversion is needed to supply the city's proposed water supply service area,[14] and the city submitted a proposed water supply service area plan as part of its application. The proposed water supply service area plan "includes parts of … the City of Pewaukee, the Town of Delafield, the Town of Genesee, and the Town of Waukesha."[15] Waukesha justifies its inclusion of parts of these four communities on Wisconsin's requirement that "the proposal is consistent with an approved water supply service area plan under s. 281.348 that covers the public water supply system."[16]

However, a water supply service area is not eligible to propose a diversion. Both the Compact and Wisconsin law allow a diversion to a "community within a straddling county." Wisconsin's definition of the term "community within a straddling county" is expressly limited to "any city, village, or town," [17] The Compact's definition of the term also includes incorporated cities and towns, as well as political entities that are "the equivalent"[18] of cities and towns.[19] .

Waukesha has to show compliance with the Compact.[20] (As the applicant, Waukesha has the burden of proving that its proposal meets all of the applicable criteria.[21]) Since a water supply service area is not a city, a village, or a town, this means Waukesha may not assert that its proposed water supply service area is a "community" eligible for a diversion, and DNR may not regard it as one.

Wisconsin's requirement of "consistency" with an approved water supply service plan does not transform a water supply service area? into a "community," as DNR maintains. Rather, if a single jurisdiction within a multi-jurisdiction water supply service area applies for a diversion because it lacks an adequate water supply, then DNR merely must assess whether a diversion to supply that single jurisdiction's lack is consistent within the context of the plan for the larger water supply service area. That is the most natural reading of the plain language of the statute.

---

[14] Application, Vol. 1, at 1-1.

[15] Application, Vol. 2, at 2-1.

[16] Wis. Stat. §281.346(4)(e)em.

[17] Wis. Stat. § 281.346(1)(d).

[18] Compact, art. 1, § 1.2.

[19] The term "the equivalent thereof" in the Compact was intended to be just as restrictive as the plain language used in Wisconsin's implementing measure; the term was meant to include only local municipalities, whether a state or province called them towns, cities, villages, townships, boroughs, or something else. *Hearing before the DNR on City of Waukesha's Diversion Application* (Aug. 17, 2015) (statement of Todd Ambs). The notion that the term "the equivalent thereof" should include Waukesha's proposed water supply service area was specifically rejected by the Compact negotiators. *Id.* As the former Administrator of DNR's Water Division, Mr. Ambs was intimately involved in the negotiations that led to the final language of the Compact.

[20] *See* Compact, art. 4, § 4.12.1.

[21] Compact, art. 4, § 4.9.4; Wis. Stat. § 281.346(4)(f); *see Sterlingworth Condo. Ass'n v. Dep't of Natural Res.*, 205 Wis. 2d 710, 726 (Wis. Ct. App. 1996).

In contrast, DNR's interpretation, which would effectively re-write the statutory definition of "community" to include the entire water supply service area, is a strained reading of the statute.

But whether or not Waukesha's inclusion of Pewaukee and the towns of Delafield, Genesee, and Waukesha in the proposal was proper, the city has to show that each of these communities, individually, satisfies all the applicable criteria for approval, including the following criteria:

- "[t]here is no reasonable water supply alternative within the basin in which the community is located, including conservation of existing water supplies";[22]
- "[t]he need … cannot be reasonably avoided through the efficient use and conservation of existing water supplies";[23]
- "[t]he Exception will be limited to quantities that are considered reasonable for the purposes for which it is proposed";[24] and
- "[t]he Exception will be implemented so as to ensure Environmentally Sound and Economically Feasible Water Conservation Measures to minimize Water Withdrawals or Consumptive Use."[25]

Because Waukesha has failed to show either that it or the other communities meet each applicable criterion, as explained in these comments, the Council must deny the proposal.

IV. WAUKESHA HAS NOT SHOWN THAT EITHER IT OR THE OTHER COMMUNITIES INCLUDED IN THE CITY'S APPLICATION FOR A PROPOSED DIVERSION DO NOT HAVE ADEQUATE SUPPLIES OF POTABLE WATER, AS REQUIRED BY THE COMPACT'S STANDARD OF REVIEW AND DECISION AND WISCONSIN'S MORE RESTRICTIVE MEASURES (DNR Water Supply Related Criteria S1, S3, S4)

A. Waukesha's Reliance On Its Proposed Water Supply Service Area Plan Is Improper (DNR Water Supply Related Criterion S3)

As explained above, Waukesha's proposed water supply service area is not a "community" and therefore is not eligible to propose a diversion. But even if a water supply service area were eligible to propose a diversion, Waukesha may not obtain approval of the proposed diversion on behalf of its ***proposed*** water supply service area.

Wisconsin has explicitly authorized DNR to approve a proposed diversion ***only*** if, among other things, "The proposal is consistent with an *approved* water supply service area plan under s. 281.348 that covers the public water supply system."[26] In this regard, Wisconsin law is more restrictive than the Compact, and under the terms of the Compact, this more restrictive measure controls.[27]

---

[22] Compact, art. 4, § 4.9.3.d.
[23] Compact, art. 4, § 4.9.4.a.
[24] Compact, art. 4, § 4.9.4.b.
[25] Compact, art. 4, § 4.9.4.e.
[26] Wis. Stat. § 281.346(4)(e)1.em. (emphasis added).
[27] Compact, art. 4, § 4.12.1.

Waukesha's water supply service area plan has not been approved, merely proposed.[28] Indeed, the process for approving such a plan has not been established by rule, as required by Wisconsin law.[29] DNR has taken no action on its draft water supply service area planning rule since 2010.[30] Until Waukesha's water supply service area plan has been approved in accordance with Wisconsin law, DNR is statutorily prohibited from approving the proposed diversion.

B. Even If Waukesha's Inclusion Of Other Communities And Reliance On The Proposed Water Supply Service Area Plan Are Proper, The City Has Failed To Show That It And The Rest Of The Communities Meet The "Need" Criterion In The Compact And Wisconsin's More Restrictive Measures (DNR Water Supply Related Criterion S1)

1. Waukesha's demand projection overstates future demand for water

Waukesha's forecasts of average-day demand and maximum-day demand are based on models that inflate the city's need for water in the future. In forecasting average-day demand, the city used a model employing an average of gallons per capita per day ("GPCD") calculated from data over the last ten years.[31] Using this average is inappropriate to predict future demand because GPCD has been steadily decreasing over the last few decades.[32] The invalidity of the model becomes apparent from its failure to replicate the actual demand from 1991 to 2008.[33] Instead of tracking the historical data, the model over predicts the average-day demand by forty percent.[34]

In forecasting maximum-day demand, the city used a ratio of maximum-day to average-day demand of 1.68.[35] However, this ratio is inappropriate because it does not accurately reflect historic ratios.[36] The average ratio over a 40-year period from 1970 to 2010 was not 1.68, but 1.46, the ratio exceeded 1.50 in only thirteen of those forty years, and the ratio exceeded 1.68 in

---

[28] *See* DNR, Technical Review, *For the City of Waukesha's Proposed Diversion of Great Lakes Water for Public Water Supply with Return Flow to Lake Michigan* (Jan. 2016) at 50 ("*Prior to the department approving the Applicant's water supply service area plan*, the Applicant must amend its sewer service area plan.") (emphasis added) [hereinafter "Technical Review"].

[29] Wis. Stat. § 281.348(3)(a)1. ("The department shall establish, by rule, … a continuing water supply planning process for the preparation of water supply plans for persons operating public water supply systems.")

[30] *See* DNR, Water Use Administrative Rules, NR 854 water supply service area plans, http://dnr.wi.gov/topic/WaterUse/rules.html (last visited Jun. 20, 2014); State of Wisconsin, Administrative Rules, Clearinghouse Number CR10-132, https://health.wisconsin.gov/admrules/public/Rmo?nRmoId=9903 (last visited Jun. 20, 2014).

[31] Memo from Jim Nicholas, Nicholas-H2O, to Marc Smith, National Wildlife Federation, at 1 (Nov. 25, 2013) (attached at Appendix tab 1) [hereinafter "Nicholas Memo"]. Mr. Nicholas holds a B.S. in Geology from Wheaton College, an M.S. in Geology from Northern Illinois University, and an M.S. in Civil Engineering—Water Resources from Stanford University. Nicholas, An Analysis of the City of Waukesha Diversion Application at 33 (Feb. 2013) (attached at Appendix tab2) [hereafter "Nicholas Analysis"]. He is the former Director of the U.S. Geological Service's Michigan Water Science Center, and his career with the U.S.G.S. spanned thirty-three years. *Id.*

[32] Nicholas Memo at 1; Nicholas Analysis at 10.

[33] *Id.* at 12.

[34] *Id.* at 12, 13 (Fig. 5).

[35] Nicholas Memo at 1.

[36] Nicholas Analysis at 11.

only one year – 1992.[37] When Waukesha used a ratio of 1.68? rather than the actual 1.30 ratio for 2010, it over predicted maximum-day demand by seventy-eight percent.[38] Instead of using the unwarranted 1.68 ratio, then, Waukesha should have used a ratio reflecting recent history and the implementation of water conservation and efficiency measures.[39]

Waukesha's failure to use valid models led it to make over predictions of future demand. Consequently, the city's claimed need for water is unjustified.

2. The record does not establish that the other communities included in the application for a proposed diversion need potable water

The primary threshold to qualify for a diversion is a lack of "adequate supplies of potable water."[40] As explained above, Waukesha must demonstrate that each community included in the application for the proposed diversion meets this criterion. However, the city's application does not demonstrate that any of these communities comply with the "need" criterion. In fact, some, if not all of them, currently have adequate supplies of potable water and are not actively seeking a supply through the Waukesha Water Utility. The city implicitly acknowledged that the Town of Genesee does not need water diverted from Lake Michigan because private wells provide the town's water supply.[41]

3. Neither Waukesha nor the other communities have implemented all reasonable conservation and efficiency measures (DNR Water Conservation Related Criterion C1)

The environmental and economic advantages of the effective management of water resources are well-documented. Water conservation practices that reduce overall water consumption can help to alleviate stress on water resources; save money both for water consumers and providers; minimize water pollution and health risks; maintain the health of aquatic environments; and reduce the energy used to pump, heat, and treat water.

Predictable conservation savings can also allow major infrastructure projects to be deferred or downsized, thus saving both construction and long-term maintenance costs. For instance, water conservation can reduce the need for costly water supply and new wastewater treatment facilities. The American Society of Civil Engineers estimates that the State of Wisconsin must invest $7.1 billion in drinking water infrastructure needs over the next 20 years; for its wastewater infrastructure, an estimated $6.4 billion is needed over the same time period.[42] Water

---

[37] *Id.*
[38] *Id.* at 13.
[39] Nicholas Memo at 1.
[40] Compact, art. 4, § 4.9.3.a.; Wis. Stat. § 281.346(4)(e)1.a.
[41] Letter from Daniel Duchniak, General Manager, Waukesha Water Utility, to Sharon L. Leair, Chairman, Town of Genesee, at 1-2 (Jan. 12, 2011). Attached at Appendix tab 3. Waukesha added the Town of Genesee to the proposed water supply service area plan ostensibly to address bacteria contamination, but the town can address this issue by complying with existing state requirements for installation of "well casings," without going to the impractical and enormously expensive extent of hooking up to the City of Waukesha for water. Wis. Admin. Code § NR 812.12(3).
[42] American Society of Civil Engineers, "Key Facts About Wisconsin's Infrastructure," 2013, *available at* http://www.infrastructurereportcard.org/wisconsin/wisconsin-overview/.

conservation helps to address this deficit by lowering the costs to pump, transport, treat, and heat water for consumers and communities. Water conservation measures can be applied at a range of levels – the state level, the utility level, and the consumer level – resulting in a wide-ranging set of practices at the system and individual level that can be utilized to meet conservation goals.

Moreover, an aggressive conservation program is repeatedly referenced as a core requirement for a diversion under the Compact. Before applying for or receiving approval of a diversion of Great Lakes water, an Applicant must show that it has considered conservation as a reasonable alternative,[43] that "no part of the diversion" can be avoided through reasonable conservation measures,[44] and that all reasonable conservation measures will be implemented as a part of the diversion.[45] These core Compact requirements call for a robust conservation plan that implements any "reasonable" measure before a diversion is approved. Waukesha's plan does not meet this standard.

a) Communities applying for a diversion are required to implement certain conservation and efficiency measures before submitting an application for a diversion.

Under DNR's rules, as a "person" applying for a new diversion under Wis. Stat. § 281.346(4)(e), Waukesha – and the communities the city includes in its application – "*shall* implement" certain conservation and efficiency measures ("CEMs") "*prior* to submitting an application."[46] This is a more restrictive measure than the criteria in the Compact. Under the terms of the Compact, however, Waukesha must satisfy this state criterion to receive approval of its proposed diversion.[47]

The obligation to implement CEMs before submitting an application for a new diversion is reinforced by DNR rules requiring communities to document the efficient use and conservation of existing water supplies by providing an analysis of community water use over at least the past five years.[48] Such an analysis "shall quantitatively describe water use through time and how it has changed with the implementation of CEMs."[49] This language shows that the CEMs had to have been implemented before Waukesha submitted its application.

b) Waukesha has not implemented conservation and efficiency measures in its existing water conservation plan

Waukesha originally submitted its application for a diversion in 2011 and later submitted an update in 2013. Significant CEMs in the city's Water Conservation Plan[50] ("WCP") were to be

[43] Compact, art.4, § 4.9.3.d.
[44] Compact, art. 4, §4.9.4.a.
[45] Compact, art. 4. §4.9.4.e.
[46] Wis. Admin. Code §§ NR 852.05(5) (emphasis added); *see id.* at § NR 852.02(3)(a).
[47] *See* Compact, art. 4, § 4.12.1.
[48] Wis. Admin. Code § NR 852.06(2).
[49] *Id.*
[50] City of Waukesha, *Application for Lake Michigan Supply for a Lake Michigan Diversion with Return Flow, Volume 3: Final Water Conservation Plan* (May 2012), available at

implemented in 2012-2016, ***after*** the application was first submitted and subsequently updated; still more components of the WCP are forecast to be implemented in 2040 and beyond. Waukesha thus could not have implemented the CEMs slated for implementation after 2013 prior to submitting its application, contrary to Chapter 852 of the Wisconsin Administrative Code.[51] For this reason alone, the Council may not approve the proposed diversion.

In addition, Waukesha has not implemented CEMs slated for implementation by this time. The Council cannot find that the city has complied with this criterion by citing CEMs that the city has not yet implemented. By the end of 2014, the city was supposed to have implemented three rebate programs:[52] high efficiency toilet ("HET") replacement for commercial and industrial users; a showerhead rebate; and a pre-rinse spray rinse valve rebate. Waukesha estimated these three rebate programs together would save 5.5 million gallons of water from 2012-2016.[53]

(1) High Efficiency Toilet (HET) replacement for commercial and industrial users (2012 target date; not implemented to date)

Waukesha did not pursue HET replacement for commercial and industrial users. The city explained that this failure is "due to the uncertainties surrounding the drain line transport issues in commercial buildings, many commercial/industrial and public accounts are unable to install the 1.28 gpf toilets."[54] However, a 2012 study by the Plumbing Efficiency Research Coalition, "The Drainline Transport of Solid Waste in Buildings," found no problems with transport issues in 1.28 gpf toilets.[55] The study also found that "Toilet hydraulics (percent trailing water and flush rate) were found to be non-significant variables. As such, the effect that toilet fixture designs have on drain line transport in long building drains has been found to be minimal."[56]

In Waukesha's WCP, the city estimated savings from HET Replacement for Commercial and Industrial customers of 0.41 million gallons from 2012-2016.[57]

(2) Showerhead rebate (2012 target date; not implemented to date)

As noted in the WCP, "Showering accounts for about 17 percent of indoor water use. … It is estimated that the average household could save 2,300 hundred [sic] gallons per year by

---

http://www.ci.waukesha.wi.us/c/document_library/get_file?uuid=af92d4a8-b5d0-43f3-afa5-8e147068efbc&groupId=10113 [hereinafter "Application, Vol. 3"].

[51] See note 35, *supra*.

[52] Rebates play an important role in encouraging consumers to switch from low to high efficiency products, and they can be structured to ensure a high cost-benefit ratio. The WCP identified rebates and other financial incentives as a key element, "especially for commercial and industrial customers." Application, Vol. 3, at VI.

[53] *Id.*.

[54] Waukesha Water Utility, "Annual Report of Waukesha Water Utility," April 1, 2014, p. 11.

[55] "Drainline Transport of Solid Waste in Buildings," Plumbing Efficiency Research Coalition, November, 2012, http://www.plumbingefficiencyresearchcoalition.org/projects/drainline-transport-of-solid-waste-in-buildings/.

[56] *Id.* at 45.

[57] Application, Vol. 3, at VII.

replacing old showerheads with a WaterSense-certified showerhead. Residents would also save energy to heat water." [58]

In its WCP, Waukesha estimated savings from high efficiency residential showerheads of 0.88 million gallons; on the non-residential side, Waukesha estimated 0.04 million gallons savings from 2012-2016. [59]

(3) Pre-Rinse Spray Rinse Valve rebate (2013 target date; not implemented to date)

As noted in the WCP, "The Food Service Technology Center estimates that certified pre-rinse spray models can save approximately 60 gallons of water (and wastewater) for every hour used."[60] In its WCP, Waukesha estimated savings from spray-rinse valve replacements of 4.24 million gallons from 2012-2016.[61]

(4) Residential Toilet rebate (2012-2104 implementation far short of plan levels)

The most significant water savings (7.33 million gallons from 2012-2016) for any rebate in the WCP were attributed to the residential toilet rebate, but Waukesha has failed to meet the plan's goals. At $100 per toilet, the plan projected rebates of 512 toilets during 2012 through 2014.[62] However, the actual number of units rebated by the city was 276, barely half the amount called for in the plan.[63]

(5) Other conservation program elements not implemented

In addition to Waukesha's failure to implement these three CEMs, the city has failed to implement a rebate program for high-efficiency washing machines that it was supposed to initiate in 2014.[64] Nor has the city implemented a rebate program targeted for implementation by 2015 for urinals in public, commercial, and industrial buildings (0.28 million gallons projected savings from 2012-2016). [65]

Waukesha has also not implemented other programs outlined in its WCP. For example, Waukesha has largely not begun to implement programs to reduce commercial and industrial water use. Waukesha's WCP found that, for commercial users, the highest volume of "commercial accounts use a disproportionate volume of water, with the top 1 percent of accounts using 29 percent of commercial water demand." [66] These accounts include hospitals and medical

[58] *Id.*. at 1-3.
[59] *Id.*. at VII.
[60] *Id.*. at 2-6.
[61] *Id.*. at VII.
[62] *Id.* at VIII, Table ES-3.
[63] See Annual Report of Waukesha Water Utility to the Wisconsin Public Service Commission, 2012, 2013, 2014, at Copy 1 of p. w-27.
[64] *Id.*. at Table F-2.
[65] *Id.*. at VII.
[66] *Id.*. at 4-16.

and senior care centers.[67] In addition, the WCP found moderately high (twenty-nine percent) seasonal/outdoor demands, with the top ten percent of accounts using sixty-nine percent of commercial water demand.[68]

Presumably because of these findings, Waukesha identified the need to develop a plan to increase water conservation by the top one percent of commercial and industrial users in 2012, but this plan has not been developed.[69] The potential for such a plan to reduce water (and energy) use is significant. For example, U.S. hospitals use an average of 570 gallons of water per staffed bed, per day.[70] A study by the U.S. Department of Energy found that hospitals could realize "significant savings by upgrading toilet, shower, and faucet technologies."[71]

Both in 2013 and 2014, Waukesha spent far less on CEMs than it had estimated it would spend because it did not implement key CEMs. In 2013, estimated costs were $141,700; actual costs were $68,599.[72] In 2014, estimated costs were $167,900; actual costs were $66,943.[73]

c) Waukesha failed to show that the other communities included in its application for a diversion implemented conservation and efficiency measures

Waukesha's WCP covers only Waukesha's current service territory. It does not include CEMs that must be implemented by surrounding communities. In fact, Waukesha has no authority to require surrounding communities to implement CEMs or to implement CEMs for those communities.[74] Waukesha's attempt to remedy this problem with its application falls far short. If the additional communities or areas that are added to the water supply service area after the diversion is approved are required to adopt conservation programs, the conservation plan should explicitly acknowledge the opportunities for conservation in these existing areas and show the impacts that conservation will have on demand for the areas. The plan should acknowledge existing land use for the expanded service area and identify infrastructure that can be added to maximize conservation practices in the expanded area. The plan should also identify opportunities for monitoring the implementation of conservation measures in the expanded area. For example, annexation or service extensions provide a natural opportunity to require efficiency or code upgrades. The conservation plan has not been amended to account for these additional measures and opportunities.

Nothing in the record indicates that the Town of Waukesha, Town of Delafield, Town of Genesee, or City of Pewaukee adopted or implemented CEMs prior to Waukesha's submission

[67] *Id.*
[68] *Id.*
[69] *Id.*. at 8-8.
[70] U.S. Department of Energy, "Hospitals Save Costs with Water Efficiency," July, 2011, p. 2, http://apps1.eere.energy.gov/buildings/publications/pdfs/alliances/hea_water_efficiency_fs.pdf.
[71] U.S. Department of Energy, p. 2.
[72] Waukesha Water Utility, "Public Service Commission of Wisconsin Report on Water Conservation Programs," April 1, 2014, p. 2.
[73] Waukesha Water Utility, "Annual Report of Waukesha Water Utility," December 31, 2014, Copy 1 of Page W-27.
[74] *See* Wis. Admin. Code § NR 852.05(5).

of its application for a diversion. Thus, because Waukesha has not fully implemented CEMs prior to the city's submission of the application, and none of the other communities have implemented any CEMs, the Council cannot approve the proposed diversion.

V. WAUKESHA HAS NOT SHOWN THAT THERE ARE NO REASONABLE ALTERNATIVES TO THE PROPOSED DIVERSION, AS REQUIRED BY THE COMPACT'S STANDARD OF REVIEW AND DECISION AND WISCONSIN LAW (DNR Water Supply Related Criterion S2)

Waukesha's proposal fails to satisfy a key criterion of the Compact, which conditions the approval of a diversion to a community within a straddling county on an applicant's demonstration that "[t]here is no reasonable water supply alternative within the basin in which the community is located, including conservation of existing water supplies."[75] To satisfy this criterion, Waukesha must show that it has fully evaluated all viable alternatives to a diversion and show that none of them is reasonable. To date, neither Waukesha nor DNR has demonstrated the requisite evaluation of alternatives or shown that no alternative is reasonable; to the contrary, their respective analyses ignore reasonable water supply alternatives.

A full consideration of reasonable alternatives is required by the Compact, Wisconsin's legislation implementing the Compact, and the Wisconsin Environmental Policy Act ("WEPA").[76] Nevertheless, despite the CIC's repeated urging,[77] DNR for years has declined to consider water demands and potential impacts attributable to a ***smaller*** water supply service area than the one proposed by the city, specifically, Waukesha's ***existing*** water supply service area. Instead, DNR has continued to limit its alternatives analysis to the area delineated in the city's proposed water supply service area plan, which projects greater water demand and a heightened risk of adverse environmental impacts. DNR erroneously justifies this limitation on the ground that "State law requires the Applicant to consider the delineated water supply service area in developing a projected water demand."[78] As explained above, state law does not allow an exception to the prohibition on diversions based on a water supply service area, only on the need of a "city, village, or town."[79]

Contrary to DNR's conclusion, reasonable alternatives to a diversion exist. These alternatives are documented in the following memos and report, included in the attached appendix and incorporated here by this reference. These memos and this report compile the data, modeling,

---

75 Compact, art. 4, § 4.9.3.d. *See also* Wis. Stat. § 281.346(4)(e)1.d.

[76] As further detailed in Section IX below, DNR's failure to consider reasonable alternatives to the diversion sought by Waukesha renders the agency's preliminary Final Environmental Impact Statement and Technical Review fatally flawed under federal and state law and non-compliant with the Compact.

[77] For example, on December 2, 2013 (Appendix tab 4), the CIC commented to WDNR as follows: "One set of alternatives that Waukesha has not considered are those based on diverting a smaller amount of water than requested in their application. For example, they did not conduct analyses of the amount of water needed to supply only its *current* service area in future scenarios including aggressive conservation and/or peak demand reduction practices." In an April 28, 2015 CIC letter to DNR (Appendix tab 5), the CIC again urged DNR to broaden its consideration of the available alternatives as part of the process leading up to the release of the preliminary Final EIS and Technical Review, to no avail.

[78] DNR, Preliminary Final Environmental Impact Statement, (Jan. 2016), 7-8 [hereinafter "FEIS"]

[79] Wis. Stat. § 281.346(1)(d).

research, and opinions of independent engineers and technical experts retained to examine reasonable water supply alternatives for the City of Waukesha:

- GZA GeoEnvironmental, Inc.'s, Memo to Clean Wisconsin and Milwaukee Riverkeeper, dated July 9, 2015 (Attached hereto in Appendix tab 6);
- Mead & Hunt, Inc.'s, memo to Clean Wisconsin, dated July 7, 2015 (Appendix tab 6);
- Mead & Hunt, Inc.'s, report to Clean Wisconsin, dated April 6, 2015 (Appendix tab 7); and
- GZA GeoEnvironmental, Inc.'s, Memo to Milwaukee Riverkeeper, dated February 29, 2016 (Attached hereto in Appendix tab 14).

The GZA memos, in particular, provide a wealth of information that substantiates the viability of a "Non-Diversion Solution" that meets the "reasonable water supply alternative" definition both under Wisconsin law[80] and the Compact's parallel provision.[81] The Non-Diversion Solution, in brief, accounts for the city of Waukesha's own forecasted water demand through 2050 and anticipated buildout for its current water supply service area, without any new environmental impacts or public health problems, and at a significantly reduced cost compared with the city's diversion proposal. [82]

The Non-Diversion Solution accomplishes this by relying on (1) Waukesha's existing deep and shallow aquifer wells, with the potential replacement of one deep aquifer well whose performance has been lagging in recent years, and (2) modest investments in additional treatment and distribution infrastructure to facilitate blending deep and shall aquifer water outside of the distribution system to comply with state and federal drinking water quality standards.

GZA's February 29, 2016, memo documents the ongoing sustainability of Waukesha's continued reliance on the deep aquifer to meet some of its needs into the foreseeable future. It also dispels DNR's concerns, expressed in the FEIS, about the ability of Waukesha's current well system to meet legal and operational requirements for firm capacity. In addition, it clarifies that Waukesha has numerous technologically and economically feasible options for treating its well water for radium and other contaminants, as well as for dealing with any residual wastes that may result from that treatment. This refutes another concern that DNR raised in its response to our comments on the draft Environmental Impact Statement.

[80] Wis. Stats. §281.346 (4)(e)1.d.
[81] Compact, art. 4, § 4.9.3.d.
[82] Letter from Jiangeng (Jim) Cai, P.E., *et al.*, GZA GeoEnvironemntal, Inc., to Ezra Meyer, Clean Wisconsin, *et al.* at 1-2 (Jul. 9, 2015) (Appendix tab 6) ("[A] Non-Diversion alternative, which allows for the continued use of the City of Waukesha's ("City") existing well infrastructure with new radium treatment, represents the most cost-effective and technically feasible alternative to meet the existing and future water supply demands for the City. This alternative was developed … following a thorough review of the declining water demands since 1970, and groundwater level rebound in the deep sandstone aquifer since 2000. It is protective of both human health and the environment. Most importantly engineering cost analyses … using conservative engineering and the principal assumptions used by the City, confirm the non-diversion alternative represents about one-half of the cost of the diversion alternative on a 50-year net present worth basis.").

In sum, the Non-Diversion Solution is a reasonable water supply alternative in the basin in which the City of Waukesha is located. Consequently, the city has failed to meet a critical Compact requirement and, accordingly, its application for a diversion of Great Lakes water must be denied.

VI. WAUKESHA HAS NOT SHOWN THAT THE PROPOSED DIVERSION WILL BE IMPLEMENTED TO INCORPORATE WATER CONSERVATION MEASURES, AS REQUIRED BY THE COMPACT'S STANDARD OF REVIEW AND DECISION AND WISCONSIN LAW (DNR Water Conservation Related Criterion C2)

Waukesha's application fails to show that either the current or projected future water demands for itself or the surrounding communities include the conservation measures required by the Compact and Wisconsin law. Both the Compact and Wisconsin's statute implementing the Compact require water conservation measures to minimize withdrawals or consumptive use.[83] Waukesha's 2012 WCP fails to satisfy this criterion in a number of ways, including its failure to implement measures to reduce peak demand, its failure to incorporate local and national declining water use trends in its conservation goals, and its reliance on voluntary and educational measures, and its minimal and highly attenuated program goal.

The 2009 Radium Stipulation and Order directs Waukesha to minimize the use of non-compliant wells.[84] Since then, such wells have only been used during summer peak demand (and as back-up for equipment failures at compliant wells). However, the WCP's goal is to make modest reductions, at best, in average-day demand over a 35-year time-frame.[85] Measures to address peak demand are either undefined or not implemented.

For example, the WCP notes that "The top 50 percent of accounts have high outdoor/seasonal usage (approximately 47 percent of the total gpcd is seasonal use)."[86] And yet, none of the measures identified in the 2012-2016 timeframe to address this outdoor/seasonal usage have been implemented, including "conducting onsite irrigation audits for large users"[87] (which was supposed to be implemented in 2013) and "identifying top 1 to 5 parks with high outdoor water use and estimate retrofit costs"[88] (which was supposed to be implemented in 2014).

Waukesha's conservation goals of "reducing average day demand by 0.5 mgd by year 2030 and by 1.0 mgd by year 2050"[89] representing roughly one-quarter of one percent in additional annual water savings each year are insubstantial and fail to incorporate the reality of local and national declining water use trends.

---

[83] Compact, art. 4, § 4.9.4.e; Wis. Stat. § 281.346(4)(f)6.
[84] State of Wisconsin, "Stipulation and Order for Judgment," Circuit Court Branch 1, Waukesha County, Case No. 2009-CX-4, p. 5.
[85] Application, Vol. 3, at 2-1.
[86] *Id.* at 4-18.
[87] *Id.* at XI.
[88] *Id.* at 8-7.
[89] *Id.* at 2-1.

Since 1999, Waukesha has seen a general decline in water use,[90] which is consistent with national trends. A recent peer-reviewed study in *Journal AWWA* reported a significant nationwide decline in residential water use over the last 30 years; a typical single-family household in 2008 used 11,678 gallons *less* water annually (*i.e.*, 32 gallons less per day) than an identical household did in 1978. The study identified the installation of water-efficient indoor appliances and fixtures – such as those meeting standards set by the 1992 Energy Policy Act – as the predominant factor explaining this decrease.[91]

This trend is likely to continue for years, if not decades, to come. As inefficient fixtures and appliances currently in use are replaced over time, further reductions can be expected. For example, in single-family homes, nearly twenty percent of all the water used indoors is for washing clothes. As of 2011, water-efficient Energy Star labeled clothes washers achieved more than sixty percent of new washer sales. A washer meeting these new specifications will use about half as much water as the typical top loader it will replace. When new regulatory standards for clothes washers take full effect in 2018, all new washers will meet or exceed today's Energy Star efficiency levels. Moreover, as of 2011, toilets that meet EPA's voluntary WaterSense efficiency standards comprised the majority of sales for tank-type toilets. Lastly, the bodies that write model building codes for state adoption have added new provisions to their 2015 model codes that would further decrease indoor water usage, including insulation requirements for hot water distribution piping.[92] The cumulative effect of these changes is that, as existing fixtures and appliances are replaced over the years and decades ahead, existing trends in decreased indoor water use can be expected to continue, or even accelerate.[93]

Waukesha's conservation goals also significantly underestimate potential savings when compared to other cities and utilities. The U.S. EPA looked at the water conservation efforts of seventeen water systems, ranging in size from small to very large. Their efficiency programs incorporate a wide range of techniques for achieving various water management goals, some of which are summarized below.

U.S. EPA Water Conservation Case Studies		
City/Utility	**Approach**	**Results**
Goleta, CA	Plumbing retrofits and increased rates	30% decrease in district water use. 50% reduction in per-capita residential water use.
Irvine Ranch Water District, CA	Five-Tiered Rate Structure	19% decrease in water use in the first year.
Cary, NC	Education program, toilet rebates, landscape and irrigation codes, and rate structure	Projected water savings of 16% by 2028

[90] *Id.* at 4-6.
[91] Rockaway, et al. 2011. *"*Residential water use trends in North America.*"* *Journal AWWA*. Vol. 103, Issue 2.
[92] Ed Osann, "Waiting for Hot Water." Natural Resources Defense Council, January 22, 2014, http://switchboard.nrdc.org/blogs/eosann/waiting_for_hot_water.html; and Ed Osann, "Our Web Poll results: Waiting for hot water is the real national pastime," April 24, 2014, http://switchboard.nrdc.org/blogs/eosann/our_web_poll_results_show_that.html#comment49649.
[93] Lee, *et al*, "Urban Sustainability Incentives for Residential Water Conservation: Adoption of Multiple High Efficiency Appliances," *Water Resources Management* 27(7): 2531-2540.

Santa Monica, CA	Education program, water use surveys, toilet retrofits and landscaping measures	14% reduction in water use.
Seattle, WA	Education program, plumbing retrofits and code, seasonal rate structure, and leak detection and repair	20% drop in per capita water use in 1990s.
Tampa, FL	Education program, plumbing retrofits, increasing block-rate structure, and irrigation and landscape codes.	Pilot retrofit program achieved 15% reduction in water use.
Massachusetts Water Resources Authority (MWRA)	Leak detection and repair, plumbing retrofits, water management program, education program, and meter improvements.	Average daily water demand from 336 mgd (1987) to 256 mgd (1997). MWRA deferred a water-supply expansion project and reduce the capacity of the treatment plant, resulting in total savings from $1.39 million to $1.91 million per mgd.

Waukesha is seemingly content with voluntary and educational programs for its commercial and industrial sector, despite the evidence of the effectiveness of mandatory programs.

Waukesha has introduced two mandatory programs, a sprinkling ordinance and residential inclining water rates; both significantly reduced water usage. In 2006, Waukesha introduced an outdoor sprinkling ordinance that restricts summer usage; the city estimates an eighteen to twenty-eight percent reduction in summer watering from 2005 to 2010.[94] Waukesha introduced conservation water rates for residential customers in 2007;[95] since implementation of these conservation rates, also known as an inclining water rate block structure, residential water use has decreased.[96]

However, commercial, industrial and public rates are structured with declining blocks, meaning that as more water is used, the cost per unit of water is reduced, which tends to promote consumption. Despite the fact that price incentives are a proven conservation strategy and have been shown to significantly reduce water use, Waukesha reports that"…the Utility uses "efforts, other than the rate structure, to incent conservation."[97] Unfortunately, those "other efforts," apart from the sprinkling ordinance, which applies to all classes of users, are all focused on education and outreach.

The City ignores the potential for water reuse, pushing the development of a water reuse demonstration project to 2040. Water reuse is an increasingly common conservation strategy.

---

[94] *See* City of Waukesha, *Application Summary, City of Waukesha Application for a Lake Michigan Diversion with Return Flow, Volume 1* (October 2013) , at 5-7, *available at* http://www.ci.waukesha.wi.us/c/document_library/get_file?uuid=a972a2e4-d45b-4748-9948-17c0ce17b692&groupId=10113 [hereinafter "Application, Vol. 1"].

[95] *Id.*

[96] Application, Vol. 3, at 4-1.

[97] Waukesha Water Utility, "Report on Water Conservation Programs," March 1, 2015, p. 12.

Water recycling (or wastewater reuse) is the beneficial use of wastewater from a treatment plant or after another use.

Graywater is defined as "untreated wastewater which has not been contaminated by any toilet discharge, has not been affected by infectious, contaminated, or unhealthy bodily wastes, and which does not present a threat from contamination by unhealthful processing, manufacturing, or operating wastes."[98] Graywater includes wastewater from bathtubs, showers, bathroom washbasins, clothes washers, and laundry tubs, but does not include wastewater from kitchen sinks or dishwashers. One study estimated that a typical home with older fixtures could generate 35,000 gallons (132.5 m3) of graywater per year while a newer more efficient home could generate 25,000 gallons (94.6 m3) of graywater per year.[99] The City of Austin, Texas, estimates that a 2.6 person household, with all available fixtures connected, could save forty to ninety gallons per household per day.[100] To encourage the use of graywater systems, the City of San Francisco offers a grant program, called Laundry-to-Landscape and a rebate program for residential graywater permits.[101] It has also developed a Graywater Design Manual for Outdoor Irrigation, which provides homeowners with a step-by-step process to install a graywater system.[102]

Waukesha also ignores the use of green infrastructure as a water reuse and conservation strategy. Green infrastructure refers to the use of more natural systems, such as wetlands, street trees, and other types of vegetation to store and treat stormwater instead of the "hard infrastructure" that is traditionally used, such as pipes, pumps, and storage tunnels.[103] Green infrastructure is one of the core elements identified by USEPA in its "Planning for Sustainability: A Handbook for Water and Wastewater Utilities."[104]

Finally, inefficient irrigation practices can cause observed water loss of twenty to fifty percent of outdoor water use. The WCP contemplates a number of programs to improve the efficiency of irrigation systems, including the distribution of rain gauges or sensors to high water users with large lots or high peak seasonal use; providing an irrigation technology or sprinkler head replacement rebate; or the requirement of annual irrigation inspections for customers with large irrigated areas; or rebates for commercial and industrial customers to capture condensate and reuse it for non-potable purposes such as landscape irrigation.[105] However, none of these programs are included in the 2012-2016 WCP.

---

[98] California Water Code Section 14876, *available at* http://law.onecle.com/california/water/14876.html.
[99] Alliance for Water Efficiency, "Graywater Introduction," *available at* http://www.allianceforwaterefficiency.org/graywater-introduction.aspx.
[100] Austin Water, "Residential Gray Water Collection & Use in Austin, Texas," undated, http://www.austintexas.gov/sites/default/files/files/Water/Conservation/Gray_Water_FAQ_09-09-2013.pdf.
[101] San Francisco Water Power Sewer, "Graywater," *available at* http://sfwater.org/index.aspx?page=100.
[102] City of San Francisco, "San Francisco Graywater Design Manual," June 2012, *available at* http://sfwater.org/modules/showdocument.aspx?documentid=55.
[103] *See, generally*. U.S. Environmental Protection Agency, "Green Infrastructure," *available at* http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm#tabs-2.
[104] U.S. Environmental Protection Agency, "Planning for Sustainability: A Handbook for Water and Wastewater Utilities," February, 2012, p. 5, *available at* http://water.epa.gov/infrastructure/sustain/upload/EPA-s-Planning-for-Sustainability-Handbook.pdf.
[105] Application, Vol. 3, see Section 7.

VII. WAUKESHA HAS NOT SHOWN THAT THE PROPOSED DIVERSION MEETS THE RETURN FLOW PROVISIONS REQUIRED BY THE COMPACT'S STANDARD OF REVIEW AND DECISION AND WISCONSIN LAW (DNR Wastewater Return Flow to the Great Lakes Basin Related Criteria R1-R5)

The Compact and Wisconsin law condition the approval of a diversion to a community within a straddling county on an applicant's demonstration that its proposal meets several criteria related to the return flow of wastewater to the Great Lakes Basin. Generally, the applicant must demonstrate that:

- the proposal maximizes the basin water returned to the basin and minimizes return flow water coming from outside the basin;
- all withdrawn water will be returned to the Basin, less an allowance for consumptive use. No water from outside the basin may be used to satisfy this requirement, except under limited circumstances;
- the return location is as close as practicable to the place where the water is withdrawn;
- if the water is returned to a Great Lake through a tributary, the physical, chemical, and biological integrity of the receiving water must be protected and sustained; and
- the return flow will not cause any significant individual or cumulative adverse impacts to the quantity or quality of the waters of the basin.[106]

DNR has determined that Waukesha's return flow proposal meets all of the above criteria. However, neither DNR nor Waukesha has demonstrated that the water quality of the Root River will be protected. DNR has not established the final effluent limitations for several pollutants of concern, nor has it established that Waukesha can comply with the draft recommended limits. This limits DNR's ability to assess the expected environmental impact of Waukesha's discharge. Moreover, DNR concluded in its FEIS that Waukesha's return flow will likely have negative impacts on the water quality and aquatic life of the Root River. But without ever fully analyzing the degree and significance of these negative impacts, DNR makes the unsupported conclusion that the identified impacts are nonetheless "minimal."[107] Until DNR conducts a fully informed analysis, there is no way for the agency or the public to determine whether Waukesha's return flow proposal meets the requirements of the Compact and State law.

A. DNR Cannot Adequately Assess The Impacts Of Waukesha's Return Flow On The Root River Without Finalizing The Various Wastewater Discharge Requirements That Will Apply To Waukesha's Discharge

The DNR's Technical Review and corresponding environmental analyses of Waukesha's return flow proposal are largely based on "draft" effluent limits, ranges of limits (e.g. the phosphorus limit may be between 0.039 and .0.06 mg/L), and several "recommended" approaches that DNR

[106] Compact, art. 4, §§ 4.9.3.b., 4.9.4.c.; Wis. Stat. §§ 281.346(4)(e)1.c, 281.346(4)(f)3. & 4.
[107] Technical Review at 98.

may or may not ultimately incorporate into a final WPDES permit for the Waukesha wastewater treatment plant ("WWTP").[108] The issuance of a WPDES permit is an iterative process that often results in changes to draft limits and initial recommendations in response to new information, public input, comments from the applicant, and in some cases, court orders. Without going through the permit issuance process, DNR cannot reasonably evaluate the impact of the proposed return flow discharge on the Root River, nor can it adequately determine whether the proposal meets the requirements of the Great Lakes Compact and Wisconsin law.

Of particular importance, the City of Waukesha has already called into question the DNR's determination that Waukesha would be a "new discharger" to the Root River.[109] Whether or not Waukesha meets the regulatory definition of a new discharger is of central importance to both the WPDES permitting process and DNR's review of Waukesha's diversion application. Several of the draft effluent limits referred to in the Technical Review, as well as the requirement that the return flow discharge comply with Wisconsin's antidegredation procedures, are premised on the fact that Waukesha's return flow would constitute a new discharge.[110] The final WPDES permit for the Waukesha WWTP, and accordingly, DNR's evaluation of the environmental impacts of the return flow, would look dramatically different if this finding were reversed.

Similarly, because Waukesha will be a new discharger of phosphorus to an already impaired waterway, DNR has determined that it must impose phosphorus effluent limits that are "well below" the phosphorus water quality criteria at the point of Waukesha's proposed discharge.[111] DNR has not, however, actually established a final phosphorus effluent limit. Instead, DNR has identified a potential range of limits that Waukesha may be required to meet: 0.039-0.06 mg/L.[112] There is a dramatic difference in both treatment costs and phosphorus loading from this range of potential effluent limits.[113] DNR should have established the final limit before submitting Waukesha's application for Regional review so that it could have fully evaluated the impact of Waukesha's discharge on the Root River.

The Root River is also listed as impaired for total suspended solids ("TSS") at the point of Waukesha's proposed discharge,[114] but DNR has not established that the recommended limits will be sufficiently protective of the water quality of the Root River. The Technical Review

---

[108] *See generally* Technical Review at 79-95.
[109] *See* Draft Memorandum, Antidegradation Evaluation for the City of Waukesha Application for a Lake Michigan Water Diversion with Return Flow, CH2MHILL, May 25, 2015 (stating that "it could be argued that the return flow does not meet" Wisconsin's definition of a new discharge).
[110] *See, e.g.*, Technical Review, pp. 83, 88-94.
[111] Technical Review at 83.
[112] *Id.*
[113] Cheryl Nenn. Ms. Nenn has a M.S. of Natural Resources and Environment from the University of Michigan. Ms. Nenn consulted on environmental projects for the U.S. Forest Service and Wisconsin DOT wetland mitigation sites; provided forestry and wildlife management planning for private landowners for the Michigan DNR and Department of Agriculture; and helped manage forest restoration, reforestation, and erosion control projects for the City of New York, Department of Parks and Recreation. Milwaukee Riverkeeper, http://milwaukeeriverkeeper.org/about/. Ms. Nenn serves on the Technical Advisory Committees for the Southeastern Wisconsin Regional Planning Commission's ("SEWRPC's") Regional Water Quality Management Plan and the Milwaukee River Estuary Area of Concern Remedial Action Plan.
[114] *Id.*

indicates that Waukesha will likely be required to meet TSS limits of 5 mg/l for summer months and 10 mg/l for winter months, but fails to provide any information about how DNR arrived at these limits.[115] DNR did not include any analysis or explanation of whether this new TSS discharge to the Root River complies with Clean Water Act requirements for new discharges of a listed pollutant into an already-impaired waterway.

Without addressing these issues, it is not possible for DNR to assess the true environmental impact of Waukesha's return flow on the Root River, and thus, DNR cannot determine whether Waukesha's proposal meets the requirements of the Great Lakes Compact and Wisconsin state law.

B. Waukesha Has Not Shown That It Is Feasible To Meet The "Draft" Effluent Limitations Prior To Discharging To The Root River

Much of DNR's analysis of the impact of Waukesha's return flow on the Root River is premised on the assumption that the Waukesha wastewater treatment plant will be able to meet its effluent limits immediately upon discharging. At least with respect to two pollutants, phosphorus and chlorides, neither DNR nor Waukesha has shown that it is feasible to achieve the proposed effluent limits.

DNR bases its finding that it is feasible for Waukesha to meet a phosphorus effluent limit in the range of 0.039 mg/L to 0.06 mg/L on "several documented studies that illustrate treatment options to meet low phosphorus concentrations are available."[116] The studies that DNR references, of which there are three, do not entirely support the DNR's conclusion. In one case, only five of the sixteen facilities that were evaluated could meet the effluent limits that may apply to Waukesha's return flow.[117] Moreover, the authors of one of the other studies caution against using the information from the study to draw conclusions about the ability to meet the effluent limits over the long-term:

> "It has been demonstrated that the Blue PRO process can achieve monthly average effluent total phosphorus levels as low as 0.009 mg/L to 0.036 mg/L in certain plants. *However, further full scale data is needed to determine how consistently these levels could be achieved and assess the ability of this and other competing technologies to address fluctuations in influent phosphorus flow and loading due to diurnal or seasonal conditions.*"[118]

Similarly, Waukesha's evaluation of its own facilities calls into question whether it is feasible to consistently meet such stringent effluent limitations. As DNR notes in the draft Technical Review, Waukesha recently completed a Phosphorus Operational Report demonstrating that the

[115] Technical Review at 84.
[116] *Id.*
[117] *See Advanced Wastewater Treatment to Achieve Low Concentration of Phosphorus,* EPA 910-R-07-002, April 2007.
[118] *See Emerging Technologies for Wastewater Treatment and In-Plant Wet Weather Management,* EPA 832-R-011, March 2013, at 2-6.

facility was able to achieve a phosphorus concentration of 0.03 mg/L to 0.05 mg/L over a 3-month period.[119] The DNR omits the ultimate finding of the report, however, which is that achieving an effluent concentration limit for phosphorus of ***0.075 mg/L*** "represents a very challenging level for wastewater facilities to meet with current technology and operation."[120] Waukesha's report goes on to state that "even with source reduction and treatment optimization, the City of Waukesha treatment system is insufficient to consistently meet [a limit of 0.075 mg/L]," and therefore indicates that the facility needs an additional six years to explore and implement alternatives before it can come into compliance with the 0.075 mg/L limit.[121]

With respect to chlorides, the Waukesha WWTP is currently operating pursuant to a water quality standards variance that allows the facility to discharge up to 690 mg/L of chlorides on a weekly average. The WWTP's average chloride concentration in its effluent over the last several years is 518 mg/L. These concentrations are significantly higher than the expected 400 mg/l limit that DNR has recommended for the return flow to the Root River. Waukesha has acknowledged that in order to meet its new limit it would have to reduce chloride loading from both residential and industrial/commercial customers by at least sixty percent.[122] The FEIS claims that lake water is less hard, so the need for salt would be decreased dramatically.[123] However, it is unclear whether residents will get off their softeners or whether the chloride reductions are achievable. DNR's Technical Review states that "additional efforts" beyond those that Waukesha has currently agreed to undertake will be needed to meet the proposed chloride limit. However, neither DNR nor Waukesha has demonstrated that it is actually feasible for Waukesha to meet the proposed limit, or whether it may be eligible for another water quality standards variance.

C. Waukesha Has Failed To Demonstrate That There Will Not Be Any Significant Adverse Impacts To The Water Quality Of The Root River

DNR has preliminarily determined that the return flow will not have any significant impacts to the water quality of the Root River. This finding is not supported by the data or the city or DNR's analysis, and is in direct contrast to DNR's own statements in the Technical Review and FEIS.

DNR's ultimate conclusion is that "the Department expects minimal, if any, impacts from the return flow to the water quality of the Root River."[124] However, in several instances the FEIS concludes that the return flow ***will*** likely have negative impacts on the water quality and aquatic life of the Root River, as follows:

- "The addition of phosphorus loading to the Root River from the return flow may increase the planktonic algal, periphyton and aquatic plant communities in the river and estuary.

[119] Technical Review at 84.
[120] City of Waukesha WWTP Phosphorus Operational Evaluation Report, Strand and Associates, June 2014, p. 1.
[121] *Id.*
[122] Application Vol. 4, at Appendix A, Facility Plan Amendment—City of Waukesha Wastewater Treatment Plant Improvements for Returning Water Withdrawn from Lake Michigan.
[123] Technical Review 87-88.
[124] *Id.* at 98.

An increase in the communities could increase the range of diurnal dissolved oxygen swings within portions of the Root River wherever the biological community is utilizing the increased phosphorus. Turbidity increases due to planktonic algae growth may also occur."[125]

- "Biological community effects may be seen further downstream in the Root River and in the Root River estuary."[126]
- "There could be potential impacts to the Root River with the proposed return flow due to an increased toxicity risk to the biota resulting from the current elevated chlorides levels in the Root River combined with the additional chloride loading from the Applicant's return flow effluent."[127]
- "The addition of chlorides, and possibly pharmaceuticals, could have a negative effect on the Root River fishery and estuary."[128]
- "Chlorides contained in the proposed discharge would likely have a negative effect on the fish community of the Root River. Current chloride levels in the Root River exceed both chronic and acute toxicity. Adding effluent flow from Waukesha could exacerbate chloride issues in the Root River, resulting in a negative effect on the fish community."[129]
- "In addition, some pharmaceuticals are known to pass through wastewater treatment plants. Accordingly, there is a risk of pharmaceuticals exposure to resident fish within the Root River. Pharmaceutical exposure from treated effluent have been shown to alter sex ratios in some fish species."[130]

DNR never explains how it determined that these expected adverse impacts are or are not significant.

For example, DNR characterizes the risk of exposure to viruses and pharmaceuticals as "slight" without pointing to any information or analyses to support that statement. In reaching its conclusions, DNR ignored and completely failed to address the comments of several scientists and experts in the field that clearly point to the public health risks and environmental degradation to be borne by Racine residents and visitors if the city of Waukesha were to begin discharging treated wastewater, in the quantities predicted, into the Root River, especially during the summer months when the river's flow would be comprised predominantly of Waukesha's wastewater:

- "Estimates from this EIS cite as much as 80-90% of the Root River flow during low flow periods could be treated wastewater….Adding such a high proportion of wastewater creates a serious health risk."[131]
- "Treated wastewater has residual pathogens but virtually no indicators. Treated wastewater is reported as the most potent source of pathogens for a given amount of

[125] FEIS at 184.
[126] *Id.*
[127] *Id.* at 186.
[128] *Id.* at 189.
[129] *Id.* at 190.
[130] *Id.* at 191
[131] Sandra McLellan, Waukesha Diversion Comments, (Aug. 27, 2015) para.5

fecal indicator concentration, and acceptable risk can be exceeded when indicators are at recommended limits."[132]

- "It was projected that 80-90% of summer baseflow would be comprised of treated effluent. As such there will be no appreciable dilutional effects…"[133]
- "Current treatment techniques do not remove other contaminants of concern, e.g. pharmaceuticals."[134]
- "There is no way to ensure that no adverse impacts are occurring to the downstream reaches of the Root River and nearshore waters of Lake Michigan without a comprehensive monitoring plan in place and there seems to be no commitment to do so."[135]

Beyond the inconsistencies identified above, there are several other areas where the DNR's conclusions are either unsupported or specifically contradicted by the information in the record. Those areas are discussed in more detail below.

1. Phosphorus and TSS

Both DNR and EPA agree that the Waukesha's return flow discharge could result in a "significant lowering of water quality" for some pollutants, namely phosphorus and TSS.[136] This is in direct contrast to the DNR's finding in the Technical Review that Waukesha's proposal will not cause any significant individual or cumulative impacts to the water quality of the State.

DNR implies that this potential lowering of water quality is permissible because "the Applicant proposes a new discharge in order to correct a public health problem i.e. radium in its current drinking water supply).[137] This justification, however, is not consistent with the Compact's requirements. Although there is an exception to the prohibition of significantly lowering the water quality of waters under Wisconsin's antidegredation rules,[138] there is no such exception in the Compact. The Compact plainly and unequivocally requires Waukesha to demonstrate that its return flow will not result in "any significant individual or cumulative adverse impacts to the water quantity or quality of the Waters or Water Dependent Natural Resources of the Basin" – without exception.[139]

2. Habitat

---

[132] *Id*.
[133] Dr. Julie Kinzelman, Waukesha Diversion Comments, (Aug 28, 2015) at 2
[134] *Id*.
[135] *Id*. at 3
[136] Technical Review at 84.
[137] *Id*.
[138] *See generally* Wis. Admin. Code § NR 207. Waukesha has not demonstrated that it meets the standard for an exception to the prohibition of significantly lowering the water quality of a waterbody set out in NR 207, which among other things requires the city to demonstrate that there are no pollution control alternatives or alternative discharge locations. *See* Wis. Admin. Code §§ NR 207.04 and .05.
[139] Compact art. 4 § 4.9.4.d.

Waukesha claimed that the return flow will benefit the fishery in the Root River and the Great Lakes and will not adversely impact the geomorphic stability of the river.[140] These claims are flawed because they are not based on site-specific analyses of impacts downstream of the proposed return flow outfall. Waukesha did not evaluate the impacts of return flow on in-stream habitat in the Root River by analyzing the river itself. Rather, Waukesha based its evaluation of these impacts primarily on desktop analyses.

In Appendix K to Volume 4 of Waukesha's application, the city evaluated the flow change at only two spots on the Root River: the proposed return flow outfall and a location about 150 feet downstream of the Root River Steelhead Facility.[141] In the Technical Review, DNR used the same two monitoring locations. Data from these two monitoring stations cannot be used to support Waukesha's claims regarding the impacts of return flow through the length of the Root River downstream of the proposed outfall.

For instance, Appendix K's evaluation is insufficient to draw conclusions regarding the area between 60th and 43rd streets on the Root River, where there are a number of meanders.[142] The section between 60th and 43rd streets is a high risk area in terms of sheer stress concerns because the area is particularly curvy and has a lot of fine sediment accumulations.[143] With the proposed return flow's increases in base flow, such fine sediments in the Root River would be mobilized and cause adverse impacts on water quality, the fishery, and sheer stress.[144]

In fact, neither DNR nor Waukesha has provided any information about the potential for the proposed return flow to increase the TSS loading in the Root River due to streambank erosion. This is of especial concern because the Root River is on the 303(d) list for TSS and also because during extremely low flows (the 7Q10 flow), the returned effluent will constitute eighty to ninety percent of the river,[145] making it an effluent-dominated stream. Given the volume of water that Waukesha will be discharging to the Root River, it is likely that bank erosion and scour will cause movement of sediment downstream, which could further impair water quality and wildlife habitat, affecting viability of fish and other aquatic life.[146] DNR must conduct an analysis of sheer stress, erosion potential, and downstream sediment transport for the proposed return flow location prior to any discharge. DNR should also consider mitigation measures, such as distributing discharge points or installing pre-treatment wetlands to reduce sediment transport.

3. Flooding

[140] Application, Vol. 4, at 22-24, Appendix E.
[141] Application, Vol. 4, at 22, Appendix K.
[142] Cheryl Nenn.
[143] Cheryl Nenn.
[144] Cheryl Nenn.
[145] DNR's FEIS estimates that Waukesha's return flow would comprise between 50 and 66 percent of the Root River flow during low flow periods. The difference between eighty and ninety percent and fifty to sixty-six percent can be accounted for by DNR's use of different flow statistics to calculate low flow conditions of the Root River(namely, the Q90 and Aug Q50). It's more common to use the 7Q10 to estimate low flows and, in fact, DNR commonly uses the 7Q10 in making wastewater permitting decisions. See infra p. 26 for further explanation.
[146] Cheryl Nenn.

Relying on Appendix K, Waukesha claims that "[r]eturn flow to the Root River would be small compared to the 100-year return period flood flows," and the 10-year return period flow.[147] However, as noted above, the scope of Appendix K's analysis was limited to two spots in the Root River: (1) immediately downstream of the 60th Street Bridge, and (2) 150 feet downstream of the Root River Steelhead Egg Harvesting Facility in Racine.[148] This analysis does not suffice to demonstrate that the return flow to the Root River will not lead to any localized flooding and would not cause related adverse environmental, property, and economic impacts.

In fact, routing additional return flow through the Root River may exacerbate the river's existing tendency to flood.[149] The Root River experienced major floods in 2008 and 2010.[150]

4. Bacteria

The Technical Review omits information that is critical to developing an understanding of how Waukesha's proposed discharge will impact the Root and Fox Rivers. For example, there is no information provided about how often Waukesha has sanitary sewer overflows, and what the expected impact of any overflows would be on these surface waters and Lake Michigan. Waukesha's application contains only a passing mention of overflows, stating that:

> "There will be no risk of overflows or opportunities for partially treated or untreated wastewater in return flow because the water will be fully treated at the City's WWTP before being pumped to the Root River."[151]

There is no information in the record, however, to support this statement. Waukesha has not submitted facility plans or any other information to show that sanitary sewer overflows will not be directed to the Root River. It does not appear that DNR has evaluated the veracity of this claim. Neither the Technical Review nor FEIS mention the potential (or lack thereof) for overflows or bypasses. The FEIS should have included a discussion of the impact of overflows on the water quality of affected surface waters.

5. Viruses and Pathogens

In the FEIS, DNR acknowledges that "there is a risk to human health from this added return flow" due to residual pathogens in Waukesha's treated wastewater. Moreover, DNR indicates that the extent of the risk is unknown because the "concentrations of pathogens in wastewater are unknown."[152] The proposed wastewater discharge to the Root River will add approximately 11

---

[147] Application, Vol. 4, at 26, Appendix K, at 1.
[148] *Id.*
[149] *See* Waukesha Diversion Comments, the Great Lakes and St. Lawrence Cities Initiatives, Great Lakes Mayors Criticize Waukesha's Lake Michigan Diversion Plan, Want Tough Scrutiny (Dec. 3, 2013) (Appendix tab 8), http://thepoliticalenvironment.blogspot.com/2013/12/great-lakes-mayors-criticize-waukeshas.html.
[150] *Id.*; *See* Don Behm, Waukesha's Root River Water Plan: Better Fishing or Worse Flooding?, MILWAUKEE WISCONSIN JOURNAL SENTINEL (Nov. 13, 2013), http://www.jsonline.com/news/waukesha/waukeshas-root-riverwater-plan-better-fishing-or-worse-flooding-b99140148z1-231752221.html.
[151] Application, Vol.4 at 1.
[152] FEIS at 188.

cubic feet per second ("cfs") to 16 cfs to the Root River. The Root River's baseflow from July through October averages under 30 cfs with summer monthly averages frequently less than 10 cfs.[153] Thus, the Root River at the point of discharge will be effluent dominated during low flow conditions, and at times the return flow may constitute up to eighty to ninety percent of the river's flow using the 7-Q10 flows.[154] Under these conditions, there could be a significant public health risk to recreational users of the Root River.

In the response to comments on the draft EIS, WDNR provided supplementary flow information to address a comment that, based on the 7-Q10 flows of the Root River, Waukesha's return flow would make up around eighty to ninety percent of river flow during low flow months. DNR conducted an analysis using Q90 and August Q50 flow duration exceedance percentiles, as opposed to 7-Q10 flows, to calculate the percent contribution from the proposed return flow.[155] Using these new numbers, DNR concluded that Waukesha's treated effluent would now constitute roughly fifty to sixty-six percent of stream flows during low flow,[156] the implication being that there is a less significant public health risk than if Waukesha's treated effluent comprised eighty to ninety percent of the flow.

DNR's new analysis does not demonstrate that there is in fact less of a risk, it simply reframes how the agency defines "low flow" to give off the *perception* of a lower risk. The 7-Q10 is a single low flow probability index (looking at frequency or recurrence probability), where 7-Q10 represents the lowest average discharge or flow over a period of 7 days expected to occur every 10 years. This metric is most frequently used by DNR for watershed planning and when setting effluent limits for streams and rivers.[157] The technical review reinforces using the 7-Q10: "The department calculated draft water quality-based effluent limits (WQBELs) based on current applicable water quality standards under Chapters NR 102, 103, 104, 105, 106, 207, 210 and 217, Wis. Adm. Code, to assess whether the Applicant could 'meet applicable water quality discharge standards. The United States Geological Survey (USGS) provided the low flow conditions for the Root River (7-Q10 and 7-Q2) to aid in calculating draft WQBELs."[158]

The Q90 and Q50 are not based on the probability or frequency of an event, but are instead flow duration exceedance percentiles. Thus, this is a different method of assessing or modeling flows. Statistically, the August Q50 is the median flow of a stream in August, and using that to estimate effects at low flow from Waukesha's return flow is not as protective as the 7-Q10 as it is skewed toward higher flows in the river. In addition, it is not what is used when DNR is setting effluent limitations. The Q90 is the low flow such that ninety percent of the flows exceed this flow rate (ten percent are lower). Since DNR uses the 7-Q10 to set effluent limits, it seems inappropriate to use the Q50 and Q90 metrics to minimize impacts of Waukesha's return flow.

[153] U.S. Geologic Survey, River Gauge Data, *available at* http://waterdata.usgs.gov/usa/nwis/uv?04087233 (last accessed Aug. 27, 2015).
[154] Technical Review at 86.
[155] FEIS at 183.
[156] *Id*.
[157] Technical Review at 81, note 203.
[158] *Id*.

There is no data provided to allow for comparison between the 7Q10, Q90, or Q50 approaches in the FEIS. Furthermore, it is unclear how DNR has determined that there will not be a significant lowering of water quality of the Root River when such a significant amount of the flow during low flow periods will consist of Waukesha's treated effluent, regardless of the flow model used. In addition, by its own admission, the agency has not evaluated the potential levels of viruses and pathogens in Waukesha's discharge.

6. Invasive Species

Waukesha claims that the return flow through the Root River will satisfy the Compact requirement of preventing the introduction of invasive species into the Great Lakes basin.[159] In the very next sentence, however, Waukesha states only that it will use best practices to *reduce* the potential of introducing or spreading invasive species and viruses.[160] *Reducing* the potential for invasive species does not equate to *preventing* invasive species.

In addition, Waukesha does not commit to use any particular practices. It only states that "[p]ractices … *will be considered*[,] includ[ing] washing equipment and timber mats before entering wetlands or watercourses, removing aquatic vegetation from equipment leaving waterways, steam cleaning and disinfecting equipment used in waterways where invasive species may exist, using noninvasive construction techniques, and others."[161] Moreover, Waukesha has provided no evidence showing that the practices it will consider using are effective in preventing the introduction and spread of invasive species.

The Application asserts that the WWTP is an advanced facility with biological treatment systems and its disinfection procedures would remove and inactivate viruses.[162] Although Appendix A Facility Plan Amendment explains the WWTP's ultraviolet light disinfection system and the flow path through disinfection procedure,[163] these do not sufficiently show that the level of treatment will not allow transfer of invasive species through the water distribution system.

In sum, the Application should have provided better documentation showing that Waukesha commits to particular practices, that those practices are effective, and how Waukesha's WWTP disinfestation procedure meets DNR water quality standards.

VIII. WAUKESHA HAS NOT SHOWN THAT THE PROPOSED DIVERSION WILL RESULT IN NO SIGNIFICANT OR CUMULATIVE ADVERSE IMPACTS, AS REQUIRED BY THE COMPACT'S STANDARD OF REVIEW AND DECISION AND WISCONSIN LAW (DNR Impact Assessment Related Criterion IA2)

[159] Application Vol. 4, at 37.
[160] *Id.*
[161] *Id.* (emphasis added).
[162] *Id.*
[163] *Id.* at Appendix A Facility Plan Amendment—City of Waukesha Wastewater Treatment Plant Improvements for Returning Water Withdrawn from Lake Michigan (2013).

The Compact requires an approved diversion to "be implemented so as to ensure that it will result in no significant individual or cumulative adverse impacts to the quantity or quality of the Waters and Water Dependent Natural Resources of the Basin."[164] However, the FEIS contains only a cursory review of cumulative effects of the proposed diversion on Lake Michigan or on the Root River.[165] DNR's cumulative effects evaluation recognizes that the proposed diversion will have negative and long-term effects on the resources of the Great lakes Basin. Yet, with almost no explanation, DNR jumps to the conclusion that "[t]he proposed diversion would not result in significant adverse direct impacts or cumulative impacts."[166] DNR does not provide any support or explanation for how it determined whether certain impacts are significant or not. Instead, it appears that DNR simply dismisses all negative impacts that could result from the prosed diversion as minimal.

The FEIS essentially states that the proposed Great Lakes diversion will not have cumulative effects on Lake Michigan because the water will all be returned, and that if the discharge will meet effluent limits, then there are unlikely to be "significant" impacts, but only "minimal" impacts. This does not address future diversions or their likely cumulative impact on Lake Michigan water quality, for example, nor does it address the cumulative effects to the Lake or Root River from discharges over time and changes to geomorphology.

Likewise, the FEIS does not address cumulative effects on water quality and biota of the Root River. It does imply that "impacts" to the Root River would be minimal if water quality-based effluent limitations ("WQBELs") are met, as follows: "The proposed Root River return flow would be subject to WQBELs for TSS. TSS levels under the permit would likely be very low, therefore the Root River should experience little to no impacts from this return flow."[167]

The FEIS also states as follows:

"The proposed additional flow to the Root River during low-flow periods may positively impact the Root River fish community. Phosphorus may both negatively and positively impact the fish community of the Root River and estuary. Temperature impacts to the Root River would likely be minimal, and the addition of chlorides, and possibly pharmaceuticals, would likely negatively affect the fish of the Root River and possibly have a slightly negative effect on the fish community in the Root River estuary and possibly the near shore areas of Lake Michigan"[168]

However, the FEIS provides little explanation of what a "minimal" impact is or how it made the determination that impacts would be "minimal." Nor is there any discussion of whether or how the return flow, in combination with other projects and conditions (*e.g.*, climate change, increasing development, *etc.*) could pose cumulative risks to the watershed over time.

Similarly, Waukesha did not demonstrate that changes in water depth and habitat available for fisheries in the Fox River would cause no significant adverse impact. It merely asserted an

[164] Compact, art. 4, § 4.9(4)(d). *See also* Wis. Stat. § 281.346(4)(e)1.e. & (f)5.
[165] FEIS at 220-223.
[166] FEIS at 220.
[167] *Id*. at 185.
[168] *Id*. at 218.

expectation that such changes would cause no significant adverse impact.[169] In fact, in the FEIS, DNR states that flows to Fox River under Alternative 6 would shrink to 3-5 cfs from currently 15-16 cfs.[170] Using the ELOHA model, DNR estimates that this is likely to have significant impacts on fisheries and other aquatic life such as mussels and aquatic macroinvertebrates.[171] As Waukesha improves its sewer system, discharge to the Fox River is expected to decrease, which could lower water levels even further. DNR does not appear to have evaluated the potential reduction of return flow to the Fox River with infiltration and inflow improvements that the applicant has committed to, or the impacts to water quality and habitat under the best- and worst-case scenarios.

IX. BECAUSE DNR HAS FAILED TO INCLUDE CRITICAL ANALYSIS AND INFORMATION IN THE PRELIMINARY FINAL ENVIRONMENTAL IMPACT STATEMENT, THE AGENCY HAS FAILED TO COMPLY WITH THE WISCONSIN ENVIRONMENTAL PROTECTION ACT

DNR's preliminary Final Environmental Impact Statement ("FEIS") is inadequate, particularly with respect to its insufficient consideration of a reasonable alternative and its failure to provide for appropriate public participation.

The U.S. Supreme Court has articulated two primary purposes of an EIS.[172] First, the EIS ensures that the reviewing agency, in this case, DNR, in reaching its decision, will have available and will carefully consider detailed information concerning environmental impacts that may be significant. Second, the EIS guarantees that the relevant information will be made available to the public at large, who also may play a role in the decision-making process and implementation of that decision. Because the Wisconsin Environmental Protection Act ("WEPA") was patterned after the National Environmental Policy Act ("NEPA"), Wisconsin courts view the construction of NEPA by the federal courts as persuasive authority in interpreting WEPA.[173]

Under the law, an EIS must be prepared with "objective good faith" and take a "hard look" at environmental consequences and alternatives. The EIS must contain "a reasonably thorough discussion of the significant aspects of the probable environmental consequences and must make a pragmatic judgment as to whether the EIS can foster both informed decision-making and informed public participation."[174] A court may overturn an agency's decision under the "hard look standard" if the agency failed entirely to consider an important aspect of the problem or if the decision does not rely on the factors that Congress intended the agency to consider.[175]

Finally, when preparing an EIS, the agency's analysis of alternatives is of particular importance, even deemed the "linchpin" of the document; as such, agencies are to rigorously explore and

[169] Application, Vol. 5, at 5-39.
[170] FEIS at 170.
[171] *Id.* at 171.
[172] *Department of Transp. V. Public Citizen*, 541 U.S. 752, 756-57, 124 S.Ct. 2204, 159 L.Ed.2d 60 (2004), citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350, 109 S.Ct. 1835, 104 L.Ed.2d 351 (1989).
[173] *Larsen v. Munz Corp.*, 482 N.W.2d 332, 342 (1992).
[174] *Natural Resource Defense Council, Inc. v. Evans*, 279 F. Supp. 2d 1129 (N.D. Cal. 2003).
[175] *Sierra Club v. U.S. Army Corps of Engineers*, 295 F.3d 1209, 1216 (11th Cir. 2002).

objectively evaluate "all reasonable alternatives."[176] The scope of alternatives that must be considered is dictated by regulations promulgated by the Council on Environmental Quality ("CEQ"), which are given "substantial deference" by courts "when interpreting NEPA."[177] The CEQ has described the alternatives analysis section as "the heart of the environmental impact statement," mandating that "in this section agencies shall: … Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated."[178]

Thus, in order for the state of Wisconsin to conduct a fair and proper assessment of the potential environmental effects of the diversion proposed by Waukesha, the FEIS must identify and rely upon important, up-to-date information and contingencies germane to this proposed taxpayer–funded project. DNR's FEIS, however, falls short of this basic standard by virtue of (i) the agency's *de facto* failure to examine an important and viable alternative and (ii) the extent of uncertainty remaining with respect to important aspects of Compact compliance, significantly undermining informed and meaningful public participation.

Neither Waukesha's application nor the FEIS adequately address critical components of the Compact. Most notably, neither adequately addresses the Compact's requirement that no reasonable water supply alternative exists to the proposed diversion. This requirement bears on DNR's obligation to consider alternatives to the proposed diversion.[179] DNR has failed to fulfill this obligation, because the FEIS fails to examine, as part of its alternatives analysis, water demand parameters or modeling predicated upon the City of Waukesha's *existing* water supply service area.

Notwithstanding repeated indications of the legal and technical infeasibility of the city's proposed water supply service area plan – see, *e.g.*, the Compact Coalition's letter to DNR dated April 30, 2015, and the "Non-Diversion Solution" released to the public by GZA GeoEnvironmental, Inc., in July 2015 – DNR has persisted in its refusal to consider, beyond a cursory mention, an analysis of water demands attributable to the City of Waukesha's current water supply service area.[180] Instead, the DNR has limited its alternatives analysis to the expanded water supply service area proposed by the City of Waukesha (pursuant to an outdated SEWRPC study), which encompasses an additional 17 square miles and portions of four neighboring communities. Unsurprisingly, this analysis points to greater water demands and a heightened risk of adverse environmental impacts.

DNR's failure to undertake an evaluation of a viable reasonable alternative renders the FEIS inadequate. Indeed, the U.S. Court of Appeals for the Ninth Circuit held an EIS inadequate on

[176] *Dubois v. U.S. Dep't of Agriculture*, 102 F.3d 1273, 1268-87 (1st Cir. 1996).
[177] *Habitat Educ. Ctr., Inc. v. U.S. Forest Serv.*, 673 F.3d 518, 527 (7th Cir. 2012).
[178] 40 C.F.R. § 1502.14(a).
[179] Wis. Stat. § 1.11(2)(c)3.
[180] FEIS at 7 ("The department does not consider this alternative viable because it does not meet the Agreement/Compact criteria to meet all applicable state laws. State law requires the Applicant to consider the delineated water supply service area in developing a projected water demand. This alternative only considers the existing service area, not the delineated service area … .").

this very basis, reasoning that "the existence of a viable but unexamined alternative renders an environmental impact statement inadequate."[181]

Moreover, too much uncertainly still remains regarding critical "factors that Congress intended the agency to consider" pertaining to compliance with the Compact, especially those related to the reasonableness of the amount of Lake Michigan water requested by the City of Waukesha and the feasibility of the city's proposed water supply service area. As such, significant information shortfalls remain in Waukesha's application and the FEIS. For one, no showing has been made as to the feasibility of providing Waukesha municipal water to any of the households or portions of the communities included in the proposed expanded water supply service area. Also, incomplete information has been provided relating to the inadequacy of the existing water supplies relied upon by households within the expanded water supply service area. Likewise, neither the Waukesha's application nor the FEIS have made the requisite showing regarding what, if any, conservation efforts have been accomplished by any of those households or the communities in the expanded water supply service area. These deficiencies have legal consequences; indeed, as plainly articulated in a federal appellate court ruling issued last year, an agency cannot hide behind outdated or incomplete information in formulating or relying upon an EIS.[182]

Because these and other persistent information shortfalls pertain to a "linchpin" component of the Great Lakes Compact – that is, the "no reasonable water supply alternative" criterion – Wisconsin's public, and the public of the region at large, has been deprived of the opportunity to conduct a meaningful evaluation of the potential environmental impacts of Waukesha's proposed diversion.

Consistent with the law governing the EIS process, the Compact provides that each Party or the Council, in order to ensure "adequate public participation," shall implement procedures that "[a]ssure public accessibility to all documents relevant to an Application …"[183] Relying on this directive, the CIC has sent a series of letters spanning the past six years notifying DNR of information gaps relating to Waukesha's diversion application and need for rule-making concerning the Compact's public participation process. The following letters, in particular, challenge the extent of pivotal information still unclear or withheld from the public and the rule-making yet to be accomplished:

1. To date, DNR has issued no final determination on the City of Waukesha's proposed water supply service area, an area potentially adding 17 square miles to the city's existing 22 square mile service area, including households and communities non-compliant with key Compact requirements (water conservation and inadequate water supplies), rendering a critical aspect of the city's application incomplete and unfinished for purposes of public input during the public comment period ending August 28, 2015.

[181] *Oregon Natural Desert Ass'n v. Bureau of Land Management*, 625 F.3d 1092, 1100 (9th Cir. 2008).
[182] *See WildEarth Guardians v. United States Dep't of Agriculture*, ___ F.3d ___, 2015 WL 4604142 (9th Cir., Aug. 3, 2015).
[183] Compact, art. 6, § 6.2.

- See Coalition letter dated August 12, 2015, identifying the public participation implications of DNR's decision to delay approval of the operative water supply service area ("WSSA") and to proceed without requisite rule-making, attached at Appendix tab 9;

- See Coalition letter to Waukesha Mayor Nelson, dated September 19, 2009, identifying "the need for a more comprehensive evaluation of Waukesha's water supply options and potential service area mindful of the Compact's 'no reasonable alternative' provision," Appendix tab 10;

- See Coalition member Waukesha County Environmental Action League letter dated March 26, 2010, questioning the feasibility and likelihood of the projected water supply service area expansion proposed by the City of Waukesha, per the SEWRPC plan, "These far-flung areas would require enormous investments in infrastructure to bring city services to this largely rural area," Appendix tab 11.

As previously stated, the public has had little to no opportunity to evaluate or comment on DNR's response to the formal report developed by GZA GeoEnvironmental, Inc., regarding a reasonable non-diversion alternative water supply option or "Non-Diversion Solution."

2. Wisconsin failed to complete necessary rule-making pertaining to public participation, water conservation, return flow and "water supply plans that are used to define the 'area' to be served by a proposed diversion," ***before*** its review of the City of Waukesha's diversion application.

    - See Memo directed to DNR Secretary Matt Frank, dated March 11, 2009, Appendix tab 13.

If DNR fails to address these significant shortfalls before finalizing the EIS, or limits the opportunity for public comment only to the instant inadequate FEIS, the public's legally guaranteed right to participate in the Compact's decision-making process will have been compromised to a degree that renders the state's EIS legally infirm under state and federal law.

X. CONCLUSION

For the foregoing reasons, the Compact Council must deny Waukesha's proposed diversion of water from Lake Michigan.