Wisconsin Water Table—Compact Implementation Committee

Clean Wisconsin ▪ Midwest Environmental Advocates
Milwaukee Riverkeeper ▪ River Alliance of Wisconsin
Sixteenth Street Community Health Center
Waukesha County Environmental Action League

Questions and Issues Raised by Waukesha's Proposed Lake Michigan Diversion Plan

I. Questions related to water supply sustainability

In order to make reasoned decisions on what impact water supply alternatives may have on the long term sustainability of the Great Lakes, policy makers need to have fully detailed information on the alternatives.

1. What water supply alternatives has Waukesha considered in addition to a Lake Michigan diversion? Please provide, for each alternative, what information was obtained, and what studies were used or commissioned in the alternatives analysis. Would you be willing to provide original source materials to the public and to our organizations?

2. Was an alternative considered that included a combination of water supply options that blends shallow and deep aquifer water with reuse and recycling of wastewater, and aggressive conservation measures? Why or why not? If so considered, why was this alternative rejected?

3. If the Waukesha Water Utility receives approval for a Lake Michigan diversion, does the Utility plan to shut down all deep and shallow aquifer wells and use of groundwater? If not, what wells would be maintained and why? What amount of water would continue to be pumped from the shallow and deep aquifers?

4. If Waukesha were to change over from groundwater supplies to Lake Michigan water, what impact would this have regarding recharge of the deep aquifer? (time and amount)? What additional impacts to the deep aquifer can be expected if communities east of the divide and other straddling communities currently on groundwater were to switch to Lake Michigan water?

5. Please compare the costs of continuing to use the deep water aquifer as Waukesha's sole water source (include energy, chemical and other costs associated with pumping and treating water) with the costs of purchasing, pumping, and returning Lake Michigan water (include energy, construction and other costs associated with pumping water to and from Lake Michigan.).

6. What are the long term economic and environmental costs and benefits of returning flow to the Lake Michigan Basin via:
    a. the Root River?
    b. the Menomonee River via Underwood Creek?
    c. piped directly to Lake Michigan?
    d. returned through the MMSD system?

7. How many short-term construction jobs would be created by building a pipeline to return water to Lake Michigan under any of the above scenarios including Underwood Creek? How many long-term, family-sustaining jobs would be created to operate and maintain the system?

8. How many shallow aquifer wells have been constructed to date? Where are they located, how much does each produce, and what were the capital costs of each to construct? How many more are under construction now and how many more are planned? Again, where are these wells planned for, how much is each projected to produce, and what are the anticipated construction costs of each?

II. Questions relating to scope of Waukesha's request for a diversion of Lake Michigan water

1. Have the City of Waukesha and the Waukesha Water Utility had discussions, either formal or informal, with other local jurisdictions about joining in the diversion request now or in the future? If so, please identify them.

2. What is the current capacity of Waukesha's wastewater treatment processing plant—how many MGD of wastewater can be treated? What is the volume of water treated by the Waukesha Water Treatment Plant in each of the last three years? Are there plans to expand the current capacity? If so, by how much and over what timeframe?

3. What is the land area and population currently being served by the Waukesha Water Utility? What is the average water volume in MGD provided to this current customer base per year: 2000 - 2008? What is the maximum MGD water supply capacity?

4. What is the projected land area and population that is proposed to be served by a Lake Michigan diversion and what is the average MGD volume of water that is projected to be supplied to this customer base? What are the assumptions for these projections?

5. Is there a difference between the land area and population to be served by a Lake Michigan diversion and the current land area and population served by the Waukesha Wastewater treatment facility? If so, what is it, and please explain?

6. Would the City of Waukesha consider limiting the geographical area that is proposed to be served by a Lake Michigan diversion to the current geographical area served by the Waukesha Water Utility in 2008? Why or why not?

7. What is the planned route for water if Great Lakes water is supplied via the City of Milwaukee's Water Works? How large would the pipe(s) be and how many miles of pipe need to be laid? What would be the economic and environmental impacts and costs for that infrastructure? If water were diverted from Lake Michigan through Milwaukee Water Works' existing infrastructure and any new construction, how long before the new water supply system could be fully operational?

8. Will Waukesha attempt to sell water obtained from a Lake Michigan diversion to other communities outside the Lake Michigan basin?

9. If "reliable capacity", defined as system capacity when the largest single component is not available for service, is the standard applied that justifies a diversion request amount of 20 – 24 MGD (three times as much as the average MGD currently used), how is it justified to shift from a multiple source (multiple shallow and deep aquifer wells) to a single source (Lake Michigan) that presumably is funneled through a single pumping station between MWW and the City of Waukesha? Or are multiple redundant pumping stations and pipelines being planned and at what cost?

III. Questions related to Waukesha's conservation measures

1. What water conservation measures have been implemented to date and what have the savings directly tied to these measures been? What are the next steps being taken to conserve water? When will these be implemented?

2. What were the average daily and annual water volume amounts supplied to the Waukesha Water Utility's customers in the years 1995, 2000 and 2005? What were the top 20 major water users for those years (other than residential users)?

3. The Water Utility estimates that with water conservation measures, it will not use more water in future years than what it is currently using. What actions will the WWU take if water use estimates are exceeded? Will additional diversion requests be made? Would a current request be expanded?

4. If Waukesha obtains Lake Michigan water, will it continue its water conservation programs? How will the water conservation program be monitored?

IV. Questions relating to Return Flow

1. Waukesha proposes to send Lake Michigan water to the Fox River and the Mississippi River basin if water flows in the receiving streams (e.g. Underwood Creek) are high. It further proposes to "make up" for this lost return flow by including infiltration and inflow (I & I) and waste water from the Mississippi River

basin in calculating the return flow volume to Lake Michigan. What data is the city of Waukesha depending on to assume that inflow and infiltration will help meet return flow "volume" requirements to a Lake Michigan tributary via a proposed diversion application that would send wastewater down the Fox River during high flow events? More importantly, how does this proposed approach conform with the legal requirements of the Great Lakes Compact?

2. What is the basis for the assertion that there is a 20% increase in treated wastewater effluent from groundwater leaking into conveyance pipes (infiltration)? Is the Waukesha Wastewater Treatment Plant currently discharging into the Fox River 20% more water than it pumps from the deep water aquifer for its water supply? Is there data to back this up?

3. If I & I occurs between the wastewater sources and the wastewater treatment facility, then isn't it also likely that sewage is leaking out? How would this be measured? What is the incentive to repair leaky pipes if I & I is being counted on to meet return flow?

4. How would return flow to Lake Michigan be monitored? Over what interval? Daily? Monthly? Yearly? A 5-year average? How will this be regulated to protect the resources on both side of the divide?

5. Drought Condition Concerns:
   a. If I & I is to be used to offset/compensate for the Lake Michigan water sent down the Fox and into the Mississippi River during periods of high flow, what will happen during drought years when little to no I/I is available?

   b. Might there be a scenario where downstream Fox River communities compete with one another (or with return flow communities) for water for drinking water supply or recreation during drier summer months? What steps would be taken to prevent this from happening? When and what factors will be considered when making decisions about where to send the return flow? Will impacts on aquatic and natural resources of the receiving streams be considered in this scenario?

6. Flooding Condition Concerns:
   a. Given the recent years' extreme flooding conditions in southeastern Wisconsin, (closing I-94 for weeks in 2008) there will undoubtedly be pressure, at times of future flooding from the Fox, to pass water through to Underwood Creek or another return flow stream. What will be done to prevent this from happening?

   b. What happens when both the Fox and Underwood Creek are at or exceeding flood stage, as happened in 2008 as well as 1997-1998?

c. MMSD has spent over one hundred million dollars on flood management in the Milwaukee County Grounds and western Milwaukee areas. Wauwatosa has spent tens of millions of dollars to prevent flooding of their downtown area along the Menomonee River and acquired and demolished dozens of flood-prone homes. There are still flood-prone structures in the downtown that future MMSD projects may address or the City will have to address. How will this proposed increase in return flow to Underwood Creek protect or affect those past and future investments?

d. The City of Wauwatosa must meet certain FEMA rules with respect to managing peak flow stages. Isn't increasing the flow in Underwood Creek by approximately 39% going to increase this flood stage?

e. Who will assume liability from adverse impacts from return flow, including problems associated with safety from increased flows, flooding issues, potential basement back-ups, etc?

f. What is the planned route for piping the return flow to Lake Michigan? How long would the pipes be? What are the projected economic and environmental impacts and costs for construction? Maintenance and operation? How long until the project is expected to be fully operational? Who would maintain it?

V. Issue of Radium in the Drinking water and Waukesha's continuing Use of the Deep Sandstone Aquifer:

1. The Water Utility frequently states that it has spent approximately $13 million for "radium compliance". Please itemize what has been done (and when) with the $13 million that has been spent to date.

2. As of March 7, 2007, the City and Utility had received "in excess of $2 million" in federal funds for radium compliance. Have additional federal funds been received or promised? When and how much? Please itemize when and for what those funds were used?

3. If Waukesha continues to use the radium-contaminated wells for part of its water supply, how will it ensure that radium is not returned to the Lake Michigan basin?

4. In Waukesha's PowerPoint presentation Figure E2 only contains data through 1990. More recent data on aquifer levels is apparently available. Will you provide us with that information?

5. Would Waukesha consider financially supporting communities east of the Divide to go off the deep aquifer?

6. Waukesha appears to be able to reduce radium levels in its water supply through most of the year *(11* ***months).*** What would Waukesha need to do to comply with radium levels for the one month that it is out of compliance? What are the costs of complying with radium standards for that one additional month? Why is this option not being pursued?

VI. Underwood Creek and the Menomonee River impact:

1. Mercury and chloride concerns:
    a. Will the Waukesha POTW act to eliminate or reduce mercury from its waste water discharge or is the current level of mercury to be passed through Underwood Creek and into Lake Michigan?
    b. MMSD and the DNR are attempting to eliminate mercury and chloride from waters in the region and Wauwatosa has adopted programs to reduce chloride use in its communities. The Waukesha POTW currently has been given a variance for mercury and chloride emissions in its wastewater treatment permit. Will the Waukesha WWTP voluntarily forego its variances and meet the more stringent standards for mercury and chloride discharge, to match those of the "new" receiving waters in Underwood Creek, the Menomonee River and Lake Michigan? Why or why not?

2. Are total loading of nutrients and other pollutants to Underwood Creek and Lake Michigan being considered in the permitting process?

3. What effluent limits would Waukesha need to meet to discharge to a restored Underwood Creek that fully meets the fishable and swimmable goals of the Clean Water Act? Who will be monitoring the effects of this effluent on downstream waterways?

4. What impacts might increased flows of Waukesha wastewater in Underwood Creek have on creek restoration efforts underway now or being planned by MMSD, the city of Wauwatosa, Milwaukee County Parks, and others? How would returning flow to Underwood Creek affect the ability of parties to remove concrete channelization in the future?

5. Do the assumptions used about Underwood Creek's capacity to absorb more flow take into consideration extreme runoff events of the kind seen in recent years?

6. What are the impacts of the treated wastewater on water quality of Underwood Creek, which is currently a variance water? Will monitoring be conducted to ensure that this effluent is not having a negative effect on downstream receiving waters?

7. Does Underwood Creek, as a receiving water, contain the same base flow available in the Fox River to dilute pollutants to acceptable levels that ensure compliance with water quality standards?

8. What data does Waukesha have showing the concentration or loading of each regulated pollutant in the receiving stream prior to addition of Waukesha's effluent?

9. How would the proposed discharge of wastewater impact existing efforts to create a Watershed Restoration Plan, including existing efforts to model pollutant source loading, for the Menomonee River?

10. Underwood Creek is one of the flashiest streams in Wisconsin, and as such, poses a tremendous safety risk for local residents and fishermen. What are the impacts of the return flow on safety, especially during high flow events?

11. It is estimated that returning Waukesha's diversion water would increase the daily flow of Underwood Creek by 39%.
    a. What steps will Waukesha take to prevent erosion?
    b. Who will pay for inevitable erosion damage/repair work?
    c. Riparian landowners are currently responsible to pay for maintenance costs/repair of banks? Will Waukesha be obligated to pay for these costs as well if erosion can be tied to increased flows?
    d. Who will be obligated for possible increased costs of removing concrete channel in the future due to increased flows?

VII. Impact on the Fox River

What are the economic and environmental impacts on the Fox River of shifting all of Waukesha's wastewater from that river to a Lake Michigan tributary and/or for sporadically sending flow down the Fox River during times of heavy rain when Underwood Creek is at high flow?

VIII. Public and local government involvement

1. How will the general public and local governments be involved in reviewing and commenting on the various water supply alternatives being considered by Waukesha?

2. As of January 5th, 2009, what communities have the City of Waukesha or its Water Utility had discussions with? What others do you intend to have discussions with? If one or more of these communities object to the full or a part of the plan, how will their concerns be factored into a decision?

3. Have local governments (including local governments in Illinois) formally been advised of Waukesha's diversion plan?

4. What local government approval will Waukesha need to build and operate both the water supply and return flow systems?

5. Has Waukesha met with Milwaukee Water Works about obtaining drinking water from the City of Milwaukee? Who will pay the costs of the construction, operation and maintenance of this infrastructure?

6. Has Waukesha requested the Southeastern Wisconsin Watersheds Trust provide an independent review of the impact the proposed return flow discharge would have on local waterways?