



## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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April 10, 2009

Steven H. Schultz, P.E.  
Ruekert-Mielke  
W233 N2080 Ridgeview Parkway  
Waukesha, WI 53188-1020

Subject: City of New Berlin Diversion Application

Dear Mr. Schultz:

We have additional questions and requests relating to two main areas of the City of New Berlin's Diversion Application: 1) The actual area to be served and the amount of water needed (the diversion amount) within that area; and 2) verifying the amount and understanding the components of the return water.

We need you to verify the exact area to be provided Lake Michigan water if the diversion were approved. Map 1 from the diversion application delineates an area (Proposed Great Lakes Water Service Area) that is larger than the area (Proposed Expanded Lake Water Service Area) depicted in Figure 2-1 of the Water Supply Service Area Plan (WSSAP). The area in the application seems to correspond to the Milwaukee Metropolitan Sewerage District (MMSD) 2020 planning area, rather than the current approved service area boundary. The Department has been assuming that the area depicted in the WSSAP is the correct area - i.e. the area to be provided Lake Michigan water under the diversion application, if approved, is the current New Berlin sanitary sewer service area. Please verify the appropriate area to be provided Lake Michigan water and also verify that the projected water pumpage amounts provided in Table B-1 of your March 9, 2009 letter reflect the needs of the smaller area, rather than the larger area depicted in Map 1 of the diversion application.

In trying to assess whether the city is minimizing the amount of water from outside the Great Lakes basin that will be returned to the source watershed—as required under Wis. Stat. §281.346(4)(c) 2.c—it has been difficult to get a firm understanding of the amount of inflow and infiltration (I/I) that enters the sanitary sewer system. For example, in comparing the amounts of water pumpage and daily sewage flow as provided in Table B-1 of your March 9, 2009 letter, for 2008, an excess of 2.419 mgd (1.425 mgd from In-Basin sources and 0.994 mgd from Out-of-Basin sources) was sent through the sewer system. While it is stated on the bottom of page 19 of the application that "The majority of sewer flow over and above water use is infiltration and inflow", it is not clear what portion of the 2.419 mgd excess sewer flow is considered to be I/I. Further, on page 20 of the application it is stated that 38% of the I/I is from outside of the basin and that this amounted to an average of 420,000 gpd. Based on those numbers, the total I/I would be about 1.1 mgd, significantly less than the excess sewer flow from Table B-1. Finally, a later discussion in the application document (page 5 of the section titled *Application Discussion Document*) indicates the amount of I/I is over 693 million gallons per year or about 1.9

mgd. In short, please verify the total amount of I/I in New Berlin's sanitary sewer system and how that amount is distributed in terms of areas within the Great Lakes Basin and outside of the Basin. Please also provide a clear and concise discussion of what measures are actually being implemented to minimize I/I, particularly from outside of the Basin. Thus far the information provided essentially consists of excerpts from annual inspection reports and there appears to be little in terms of actual plans to reduce I/I.

Finally, on the bottom of page 20 in Volume 1 of the Application, there is a brief discussion concerning the City's plans to account for water delivered to either side of the basin divide. It is unclear if metering at certain points within the delivery system will continue to be part of the monitoring system or if the city will rely solely on quarterly readings of customers' meters; therefore, please clarify this. This same discussion seems to indicate that sewer flow (return flow) will be a derived value rather than a measured value. New Berlin should explain how the water use data will be "adjusted annually for I/I estimates" and how this will lead to reliable estimates of in-basin and out-of-basin sewer flows. A system for actual measurement of return flow also needs to be implemented to provide actual flow data and verify this estimation technique. New Berlin should provide plan sheets indicating the location of flow measuring devices within the water distribution system and the sanitary sewer system.

If you have questions regarding these issues, please contact Larry Lynch (608) 267-7553.

Sincerely,



Eric K. Ebersberger  
Water Use Section Chief

Cc: Mayor Jack Chiovatero  
Todd Ambs, AD/8  
Larry Lynch, DG/5  
George Mickelson, DG/5  
Judy Ohm, LS/8  
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