



Feasibility Report for Water Service To The City of Franklin

January 8, 2018

Introduction

This report is prepared in accordance with City of Milwaukee Resolution File 171291, "Resolution directing the Milwaukee Water Works, the Legislative Reference Bureau and the Department of City Development to prepare analyses relating to a water service agreement and requesting submission of a report by the City of Franklin", which was adopted in December 2017. The Milwaukee Water Works (MWW) is directed to address these aspects of providing water to Franklin: "increased revenue, cost of production, effect on the City's water rates, impact on capacity utilization and any required capital costs, and other information the Water Works deems relevant to the Council's consideration".

Background

The City of Franklin (Franklin) is located south of Milwaukee. The Franklin city limits are generally defined as West College Avenue, West Eight Mile Road, South 27th Street, and South 124th Street. Although Franklin and Milwaukee do not share a common municipal border, the Village of Hales Corners and the City of Greenfield do share a border and are part of the MWW retail service area. Franklin is 100% within the Great Lakes Basin.

Franklin currently is a wholesale customer of the City of Oak Creek. Their 30-year contract expires on April 4, 2024. Through a letter to the City of Milwaukee Commissioner of Public Works, dated January 20, 2017, the Franklin Board of Water Commissioners requested acknowledgement that the City of Milwaukee is interested in providing wholesale water service to Franklin in 2024.

Per the 2010 census, the population of Franklin was 35,451. The Franklin Water Utility (FWU) provides water service to approximately 27,500 residents. Approximately 7,640 residents are served by private water systems using wells. The MWW currently supplies water to approximately 1,750 residents in Franklin. In 2035, the population is projected to be 43,730. In 2070, the population (ultimate) is projected to be 50,660.

Milwaukee Water Works' Ability to Meet Water Service Request

Franklin's 2016 actual, and 2035 and 2070 projected water use are presented in Table 1 below. The 2016 actual water use was obtained from the annual report submitted to the Wisconsin Public Service Commission (PSC). The 2035 and 2017 projected water use were obtained from a report prepared by Kaempfer & Associates for the City of Franklin, dated March 15, 2016. The report was transmitted to the Commissioner of Public Works on January 20, 2017.

Table 1. Franklin's Water Use Projections

	2016 Actual	2035 Projected	2070 Ultimate Projected
Total Pumpage (million gallons per year)	976	1,533	1,862
Average Day Demand (million gallons per day)	2.7	4.2	5.1
Maximum Day Demand (million gallons per day)	4.8	9.2	11.3
Per Capita Water Use (gallons per person per day)	97	114	110

Considerations in assessing MWW's ability to meet Franklin's water service request include water treatment capacity, water distribution capacity, and infrastructure available to connect the two water systems. The volume to be supplied and hydraulic grade line (pressure) available at connection point(s) are factors in this analysis. The service area to receive the water is not a factor because it is the facilities of FWU that deliver the water to the service area, not the facilities of MWW.

Treatment: MWW has excess capacity at its two water treatment plants. The Linnwood Plant and the Howard Avenue Plant have treatment capacities of 275 and 105 million gallons per day (mgd), respectively, for a total of 380 mgd. In 2016, the average daily pumpage was 97 mgd, and the maximum day pumpage was 130 mgd.

In Franklin's application, the ultimate projected average daily demand is 5.1 mgd, and the maximum day pumpage is 11.3 mgd.

There is sufficient treatment capacity to supply these additional projected water volumes. There are no improvements required to the MWW water treatment infrastructure to treat the additional projected volumes.

Distribution and Interconnection: MWW distributes treated water from three major pumping stations and nine additional booster pumping stations to form six different pressure districts over the entire water service area. The largest pressure district is the Riverside district, which covers approximately 90 square miles and is fed from both water treatment plants. Per a meeting held with the City of Franklin, Kaempfer & Associates, and the MWW in May 2017, Franklin is investigating a connection to Milwaukee's water system (Riverside district) at West Grange Avenue and South 35th Street. The Franklin supply main would connect to a large transmission main in West Grange Avenue and extend south through the City of Greenfield to Franklin. The concept includes multiple pumping stations to be located in Franklin. The supply main and pumping stations would be owned, operated, and maintained by Franklin.

Milwaukee's existing wholesale customers have at least two connection points to the Milwaukee system to provide added reliability. Franklin's storage capacity and emergency connections will be investigated to determine if they provide the desired level of reliability without the need for a second connection. A future (second) connection to MWW's system on the west side of Franklin is also a possibility.

The 54” transmission water main in West Grange Avenue would provide sufficient capacity at South 35th Street to meet Franklin’s projected needs through 2070. There are no improvements required to the MWW water distribution infrastructure to supply the additional projected volumes.

All costs for new facilities (ie. meter vault, supply main) within the MWW service area would be negotiated with Franklin. Our working assumption is that Franklin would incur any capital costs. As further engineering details emerge, factors to be considered in the calculation of any MWW share of capital costs would be relative to the proposed water rate and any benefit that could be demonstrated would positively impact our existing system and customers.

Economic Impact on the Milwaukee Water Works

The financial operations of MWW are regulated by the Public Service Commission of Wisconsin (PSC), which sets water rates on the basis of full cost recovery plus a rate of return. Operation and maintenance expenses that MWW would incur relative to treatment and distribution of additional volumes of water for FWU would be fully recovered in the rates for water sold to FWU. These additional costs would include water treatment chemicals, increased facility maintenance, and electricity for pumping the water.

Effective October 30, 2014, the PSC approved unique rate structures for each wholesale customer of MWW. It is not possible to know what rate structure would have been set for Franklin. However, we can make some predictions based on FWU’s 2016 water use.

FWU’s 2016 water use of 2.7 mgd corresponds to an annual water use of 976 mgd per year. In terms of volume, this is nearly identical to the volume of water purchased by two of MWW’s existing wholesale customers, City of New Berlin and Village of Menomonee Falls. Volumetric rates charged to these two customers are \$1.16 per Ccf and \$1.15 per Ccf, respectively.

Table 2. Estimated annual revenues from sale of water to Franklin using 2017 Menomonee Falls rate.

	2016 Use (actual)	2035 Use (projected)
Million Gallons per Day	2.7	4.2
Million Gallons per Year	976	1,518
Estimated Rate*	\$1.15 per Ccf	\$2.02 per Ccf
Service Charge	\$13,031	\$22,850
Volumetric Charge	\$1,537,688	\$4,200,913
Estimated Annual Revenue	\$1,550,719	\$4,223,763

*Includes an escalation factor of 3% annually

Additional water purchased by wholesale customers has a positive financial impact on MWW. This revenue directly lessens the rate burden of Milwaukee residents and businesses by spreading the utility’s costs over a wider base. These non-Milwaukee ratepayers contribute to the MWW payment in lieu of taxes (PILOT) to the City of Milwaukee general fund, to the utility’s payments to the general fund for services purchased from other City departments, to the utility’s fixed costs, debt service, and Capital Improvement Program.

The precise amount of benefit to Milwaukee ratepayers cannot be calculated. The PSC has explained that the only way to accurately calculate the savings to Milwaukee customers would be to perform two complete rate case analyses, one with the revenues and associated costs accounted for, and the other

without. This would require significant effort and expense and is not practical. However, MWW has developed a methodology to estimate the benefit which is illustrated in Table 3.

Table 3. Overall annual benefit to existing utility customers, estimated using 2017 rates.

Actual Franklin 2016 Use of 2.7 mgd	
Estimated Annual Revenue	\$1,550,719
Incremental Costs	\$175,000
Net Revenue (Benefit)	\$1,375,719
2016 MWW Revenue from Water Sales	\$88,701,595
Impact to Utility Revenue	1.55%

While existing customers will not see a reduction in their bills, the additional revenue would serve to hold down future rate increases. Future water usage increases by Franklin, coupled with future MWW water rate increases would proportionately increase the amount of the benefit. An explanation of the methodology used in Table 3 is as follows:

MWW calculated the new costs of electricity and chemicals for treating and pumping the additional water that would be sold to Franklin and considered them to be “incremental costs”. The “incremental costs” are subtracted from the total annual revenue in Table 2 to derive an annual “net revenue” or benefit. The net revenue is then divided by existing utility revenue to estimate how much the new wholesale customer revenue compares to existing customer water sales. Note: This method does not account for additional maintenance on or “wear and tear” of facilities due to the extra water being treated and delivered because that cannot be calculated at this time.

Summary

MWW has adequate treatment, pumping and distribution capacity to supply the additional water volumes projected by Franklin.

The additional sale of water would have a positive impact on the underutilized capacity of the MWW system, and would help serve to mitigate the utility’s decline in water sales. The attached chart illustrates the utility’s 20-year consumption trend, including for purposes of discussion, the volume of water used in 2016 by Waukesha and Franklin. Had FWU been a customer in 2016, the additional water usage would have been equivalent to regaining 2.5 years of declining consumption.

Lastly, Common Council policy requires an intergovernmental payment to be negotiated with wholesale water purchasers. Recent payments have ranged from \$1 million to \$2.5 million, depending on the volume of water sold and other factors in the negotiation. If this sale were to be negotiated, it would include a payment that could be used toward the replacement of lead service lines, similar to the payment recently negotiated with Waukesha.

Prepared by Jennifer Gonda, Milwaukee Water Works, January 8, 2018