

SERVICE DATE
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Public Service Commission of Wisconsin
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PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of the City of Sheboygan, as a Water Public Utility, for Authority to Construct a Raw Water Intake Pipeline, Shore Well and Pumping Station, in the City of Sheboygan, Sheboygan County, Wisconsin

5370-CW-117

FINAL DECISION

Introduction

On April 9, 2021, the Commission received an application from the City of Sheboygan, as a water public utility (applicant), pursuant to Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 184. The applicant seeks authority to construct a raw water intake pipeline, shore well, and pumping station, in the City of Sheboygan, at an estimated total cost of \$46,000,000. The Commission issued a Notice of Investigation on September 2, 2021. No hearing was required nor held. No major concerns were brought to the attention of Commission staff.

The application is GRANTED, subject to conditions.

Findings of Fact

1. The applicant is a public utility as defined under Wis. Stat. § 196.01(5)(a) and provides water service to approximately 18,931 customers in Sheboygan County.
2. This project consists of constructing a raw water intake pipeline, shore well, and pumping station, at an estimated total cost of \$46,000,000.
3. The type of project and the estimated cost of this project require Commission review and approval under Wis. Stat. § 196.49 and Wis. Admin Code ch. PSC 184.
4. No person requested a hearing in this investigation.
5. The applicant reported water operating revenues of \$8,695,189 in 2020.

6. Based on the applicant's PSC Annual Report, between 2016 and 2020, water sales declined by 9.42 percent, and average gallons per residential customer declined by 2.80 percent.

7. The proposed project is necessary to provide adequate and reliable service for present and future customers.

8. Completion of this project will not substantially impair the efficiency of the service provided by the applicant.

9. Completion of this project will not provide facilities unreasonably in excess of the applicant's probable future requirements.

10. When this project is completed, the additional cost-of-service of this project will be proportionate to the increase in value or available quantity of service.

11. No significant environmental consequences are associated with the project.

12. No significant risk of flooding is associated with this project.

13. The construction of the proposed project will not affect any historic properties.

14. The construction of the proposed project will not affect any endangered or threatened species.

15. Authorization of the project is in the public interest.

Conclusions of Law

1. The Commission has authority under Wis. Stat. §§ 1.11, 44.40, 196.02, 196.025, 196.395, and 196.49, and Wis. Admin. Code chs. PSC 4 and 184 to issue a Final Decision and Certificate authorizing the applicant to construct the proposed facilities at an estimated total cost of \$46,000,000.

2. The Commission has authority under Wis. Stat. § 15.02(4) to delegate to the Administrator of the Division of Water Utility Regulation and Analysis those functions vested by law as enumerated above. It has delegated the authority to the Administrator of the Division of Water Utility Regulation and Analysis to issue a Final Decision and Certificate for the proposed project.

3. The estimated gross cost of this project exceeds the minimum threshold of applicant projects requiring Commission review and approval under Wis. Stat. § 196.49 and Wis. Admin. Code ch. 184.

4. The Commission may impose any term, condition, or requirement necessary to protect the public interest pursuant to Wis. Stat. §§ 196.02, 196.395, and 196.49.

5. The application is a Type III action under Wis. Admin. Code § PSC 4.10(3) and requires neither an environmental impact statement (EIS) nor an environmental assessment (EA).

Opinion

Project Description and Purpose

The applicant provides water service to its customers in the City of Sheboygan in Sheboygan County. The applicant's existing water system consists of two surface water intakes, six elevated storage tanks and reservoirs, and 208 miles of water main. The applicant proposes to construct a new 60-inch raw water prestressed concrete cylinder pipe (PCCP) intake with a length of 6,500 feet that would extend into Lake Michigan to a depth of approximately 50 feet. The project also includes a second, 54-inch PCCP raw water intake that would be stubbed out at a length of 400 feet. Additional project features include: a new shore well and raw water pump station housed in a 4,000 square foot building, a screen system, four low lift pumps (two pumps

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rated at 10,500 gpm and two pumps rated at 6,600 gpm) with variable frequency drives, two 400 kW emergency generators, chemical feed equipment, 20-inch and 36-inch ductile iron connector pipe, and shoreline protection. The applicant estimated that the project will cost \$46,000,000.

Project Need

The applicant provides retail water service to customers in the City of Sheboygan and wholesale water service to the Village of Kohler and the City of Sheboygan Falls. The applicant withdraws raw water from Lake Michigan through two intakes, collects the water at an existing shore well, pumps the water to a water treatment plant, and sends the treated water into the distribution system. The two existing lake intakes include a 30-inch steel intake installed in 1909 that extends 5,200 feet from shore and a 36-inch concrete intake installed in 1959 that extends 2,100 feet from shore. The 1909 lake intake draws 12 million gallons per day (mgd) of lake water and is past its useful life. The applicant plans to retire this intake within the next five years due to its age and its susceptibility to frazil ice formation. The 1959 intake has a capacity of 22 mgd, is 62 years old, and may last several more decades. The applicant stated that good engineering practice requires a water system to have at least two lake intakes to provide redundancy during maintenance and emergencies. Therefore, the applicant proposed to construct a new 60-inch lake intake to replace the 1909 intake and to maintain the existing 1959 intake as a backup. The applicant also proposed to construct a new 54-inch stub out for a second lake intake that would someday replace the 1959 intake.

Both existing intakes discharge into a shore well built in 1887. An existing low lift pump station, built in 1929, pumps water from the shore well to the water treatment plant. The applicant planned to keep both the existing shore well and pump station in service as long as the

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existing 1959 lake intake continues to be in service. However in the applicant's most recent Sanitary Survey Report, the Wisconsin Department of Natural Resources (DNR) identified that the low lift pumps, motors, and controls are below Lake Michigan's water level. The DNR stated that this is a non-conforming feature that the applicant needs to correct. Therefore, the applicant proposed to construct a new shore well and low lift pump station with new vertical turbine pumps that will be located approximately 12 feet above current lake levels. The new shore well would draw water from the proposed 60-inch intake and the 54-inch stub out once it is extended into the lake at some future date. The applicant expects that the proposed new shore well and pump station would address the DNR's non-conforming feature.

Alternatives

The applicant evaluated six alternatives to address the need for a new lake intake, shore well, and pump station. The first and selected alternative entailed the construction of new lake intakes with the following components: a 60-inch raw water PCCP intake with a length of 6,500 feet, a second 54-inch PCCP raw water intake stubbed out at a length of 400 feet, a new shore well with pump station, four low lift pumps with variable frequency drives, 4,000 square foot building, screen system, two 400-kW emergency generators, chemical feed equipment, 20-inch and 36-inch ductile iron connector pipe, and shoreline protection. The applicant estimated the total cost of this selected option to be \$46,000,000. The applicant determined the size of the proposed intakes, shore well, pump station, and pump equipment using a 50-year water demand study prepared by its consultant, AECOM. ([PSC REF# 408818](#).) The study computed maximum-day demands under low, moderate, and high scenarios. The results were 15.6 mgd, 30.8 mgd, and 36.0 mgd, respectively. Given the critical nature of the existing intakes, their age,

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and the potential for frazil ice plugging, the applicant chose to size the new 60-inch intake to convey the high scenario maximum-day demand of 36.0 mgd.

Under the selected alternative, the existing 1959 intake would serve as a backup supply. Keeping the 30-inch existing intake in service for another five years gives the applicant time to make sure that the new intakes and lift station are operating properly. When this project is complete, the applicant would have only two lake intakes: the proposed 60-inch lake intake and the existing 1959 36-inch backup intake. The proposed 60-inch intake would result in lower intake velocities and thus reduce the turbulence that promotes frazil ice formation. The applicant anticipates this arrangement would eliminate the need for the special winter operations schedule at the water treatment plant that currently results in longer daytime pumping and higher electricity costs. The new lake intake would draw water at a greater distance from shore and at a greater depth than the existing intakes, which should result in less turbid water at the water treatment plant. The applicant anticipates the higher quality water would reduce the need for treatment chemicals such as aluminum sulfate and sodium hypochlorite, resulting in reductions in sludge formation and disposal costs. The proposed vertical turbine motors would be 12 feet above the current lake level, which meets DNR requirements. The applicant does not anticipate the need for any additional staff as a result of this project. The bid documents would include seven bid alternatives for the lake intake part of the project. The bid alternatives include 60-inch and 54-inch intake diameters, PCCP and steel intake materials, and 6,500 and 5,500-foot intake lengths. The applicant anticipates that the most expensive bid alternative would entail a 60-inch raw water PCCP intake with a length of 6,500 feet.

The second alternative was the “No Action” alternative. The applicant did not select this alternative because it would not address the advanced age of the existing intakes, shore well, and pump station. In addition, it would not address the non-conforming features the DNR identified.

The third alternative considered connecting the applicant’s system to a nearby water system. Connecting to a neighboring municipal water system is not a reasonable alternative, because the nearest utilities are much smaller than the applicant. Based on the 2020 PSC Annual Report, the applicant had 18,931 customers using 3.2 billion gallons. In comparison, the Sheboygan Sanitary District No. 3, which is the nearest utility that does not already purchase its water from the applicant, has three wells and serves 1,986 customers and does not have the capacity to serve the applicant during an emergency.

The fourth alternative considered constructing a water supply pipeline to connect the applicant’s system with the Manitowoc Public Utilities (MPU) system. Given that the MPU system is located 25 miles away, the applicant determined that the cost of constructing a conveyance pipeline between the two systems, along with the cost to expand MPU’s lake intake and water treatment plant, would be approximately \$75 million.

The fifth alternative considered implementing conservation measures. This option does not mitigate the need to replace the aging lake intakes, shore well, and pump stations.

The final alternative considered decreasing the applicant’s non-revenue water. On its own, this alternative would not provide a viable solution, as, according to the applicant’s 2020 PSC Annual Report, the applicant’s real water loss totaled 332,670,000 gallons, or 0.91 mgd. This alternative also does not mitigate the need to replace the aging lake intakes, shore well, and pump stations.

Environmental Review

This is a Type III action under Wis. Admin Code § PSC 4.10(3). No unusual circumstances suggesting the likelihood of significant environmental effects on the human environment have come to the Commission's attention. Neither an environmental impact statement under Wis. Stat. § 1.11 nor an environmental assessment is required.

Project Cost, Construction Schedule, Rate Impact

The total estimated cost of this project is \$46,000,000. The applicant plans to fund this project with a \$1,400,000 Federal Emergency Management Agency Building Resilient Infrastructure and Communities (FEMA BRIC) grant to pay for the shoreline protection elements of the project, \$500,000 in principal forgiveness, and \$44,100,000 in a loan from DNR's Safe Drinking Water Loan Program. The applicant expects the project to construct the project from April 2022 to June 2024. Commission staff estimates that implementation of this project would result in the need to increase rates by 49 percent. The Commission provides the estimated rate impact for general information. The actual amount of any rate increase would be determined at the time the applicant submits an application for a rate increase. The amount of any increase would depend on several factors including, but not limited to, project financing, growth in customer demand, inflation, actual project costs, and the requested rate of return.

Some utility construction projects require approval from the DNR. The Commission's review of construction projects and the DNR's review are complementary, with the DNR ensuring the project will provide public health and safety, and the Commission ensuring the project is reasonable in cost and necessary to meet the applicant's probable future requirements.

Conclusion

The project, as conditioned herein, complies with Wis. Stat. § 196.49(3)(b). The project will not substantially impair the efficiency of the applicant's service. The proposed new water intake will result in lower intake velocities and thus reduce the turbulence that promotes frazil ice formation, resulting in reductions in daytime pumping and electricity costs. The new lake intake will draw water at a greater distance from shore and at a greater depth than the existing intakes. It is reasonable to expect these changes to result in less turbid water at the water treatment plant, reductions in treatment chemical requirements, and less sludge formation and resulting disposal costs. These changes will help improve the efficiency of the applicant's operations.

Completion of this project will not provide facilities unreasonably in excess of the applicant's probable future requirements. The applicant's consultant, AECOM, performed a 50-year water demand study to size the proposed intake which included low, moderate, and high maximum-day demand projections. The applicant designed the 60-inch intake for 36 mgd capacity. Given the critical nature of the intakes, the potential for frazil ice plugging, and the age of the two existing intakes, it is reasonable to build one new intake and to keep the existing 36 mgd for backup capacity. By keeping the 30-inch existing intake in service for another five years, it gives the utility time to make sure that the new intakes and lift station are operating properly. The existing low lift station and shore well will remain in service as backups.

When placed in service, the project will increase the value of the applicant's available quantity of service in proportion to addition to the applicant's cost of service. The DNR's most recent Sanitary Survey Report for the applicant's system identified that the low lift pumps,

motors, and controls are below Lake Michigan's water level and stated that the applicant needs to correct this non-conforming feature. It is reasonable to conclude that the applicant's proposal to construct a new low lift pump station with new vertical turbine pumps approximately 12 feet above current lake levels would help address the non-conforming feature and improve reliability of the applicant's system.

Certificate

The City of Sheboygan, as a water public utility, is authorized to construct the facilities proposed in its April 9, 2021 application, at a total cost of \$46,000,000, subject to the conditions in this Final Decision.

Order

1. The applicant's application for authority to construct facilities in Sheboygan County, at an estimated total cost of \$46,000,000, is granted.
2. This authorization is for the specific project as described in the application, at the stated project cost. Should the scope, design, or location of the project change significantly, or if it is discovered or identified that the project cost, including *force majeure* costs, may exceed the estimated cost by more than 10 percent, the applicant shall promptly notify the Commission as soon as it becomes aware of the possible change or cost increase and provide a reason for the change.
3. The applicant shall obtain all necessary federal, state, and local permits prior to commencement of construction.
4. If the applicant does not begin on-site physical construction within two years of the effective date of this Final Decision, the certificate authorizing the project shall become void

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unless the applicant: (a) files a written request for an extension of time with the Commission before the date on which the certificate becomes void; and (b) is granted an extension by the Commission.

5. If the applicant has not begun on-site physical construction and has not filed a written request for an extension before the date the certificate becomes void, the applicant shall inform the Commission of those facts in writing within 20 working days after the date on which the certificate becomes void.

6. The applicant shall submit to the Commission the final actual costs segregated by the Commission's uniform system of accounts within one year after the in-service date. For those accounts where actual costs deviate significantly from those authorized, the final cost report shall itemize and explain the reasons for any such deviations.

7. This Final Decision takes effect one day after the date of service.

8. Jurisdiction is retained.

Dated at Madison, Wisconsin, September 27, 2021.

For the Commission:

A handwritten signature in black ink, appearing to read "Denise L. Schmidt". The signature is written in a cursive, flowing style.

Denise L. Schmidt
Administrator
Division of Water Utility Regulation and Analysis

DLS:spk:krl DL:01830801

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN
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**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

PETITION FOR REHEARING

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of the date of service of this decision, as provided in Wis. Stat. § 227.49. The date of service is shown on the first page. If there is no date on the first page, the date of service is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

PETITION FOR JUDICIAL REVIEW

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of the date of service of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of the date of service of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission serves its original decision.¹ The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: March 27, 2013

¹ See *Currier v. Wisconsin Dep't of Revenue*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.