

**STATE OF ILLINOIS
DEPARTMENT OF NATURAL RESOURCES**

IN THE MATTER OF

**LAKE MICHIGAN WATER
ALLOCATION PROCEEDING
FOR THE VILLAGE OF VOLO,
LAKE COUNTY**

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No. LMO-09-09

**FINAL ADMINISTRATIVE DECISION ON AN APPLICATION
BY THE VILLAGE OF VOLO
FOR A LAKE MICHIGAN WATER ALLOCATION**

By the Illinois Department of Natural Resources:

I. Legal Authority

This matter comes before the Illinois Department of Natural Resources, Office of Water Resources, ("Department") pursuant to its statutory authority under the Level of Lake Michigan Act, 615 ILCS 50, and its regulatory requirements set forth in its administrative rules for the Allocation of Water from Lake Michigan, 17 Ill.Admin.Code 3730.

II. Procedural Background

The Village of Volo ("Applicant") has filed with the Illinois Department of Natural Resources, Office of Water Resources, ("Department") an application for a Lake Michigan Water Allocation Permit. Pre-hearing conferences were held on October 1, 2009 and January 14, 2010.

A Public Hearing was held at the James R. Thompson Center in Chicago commencing at 10:00 a.m. on March 12, 2010. Public notice was effectuated pursuant to Section 3730.206 of the Department's Administrative Rules for Allocation of Water from Lake Michigan. Appearing on behalf of the Department were Daniel Injerd, Manager of the Department's Lake Michigan Management Section, and James Casey, Civil Engineer in the Department's Lake Michigan

Management Section. Appearing on behalf of the Applicant were Nancy Harbottle, Village Attorney, Burnell Russell, Village President, Elmer Reed, P.E., Village Engineer, Al Maiden, Village Planner, Ken Buchardt, Village Administrator, and Francis Tiefert, P.E., of Applied Technologies, consulting engineer for Applicant. No other party intervened in this proceeding.

The documentary evidence presented in support of the Applicant's Petition, as well as the oral testimony presented by the Applicant at the March 12, 2010 Public Hearing (including certain oral testimony presented at the LMO-09-01 Public Hearing, LMO-09-01 Tr. 30-43), make up the evidentiary record of this proceeding. Applicant filed the testimony of Burnell Russell as Exhibit 1, the testimony of Elmer Reed as Exhibit 2, the professional qualifications of Mr. Reed as Exhibit 2-A, the experience and background of Manhard Consulting, Ltd, as Exhibit 2-B, the Village's Public Water Supply Master Plan as Exhibit 2-C, the testimony of Frank Tiefert as Exhibit 3, the professional qualifications of Mr. Tiefert as Exhibit 3-A, the experience of Applied Technologies as Exhibit 3-B, Applicant's original Application for Lake Michigan water dated April 2010 as Exhibit 3-C, supplemental testimony of Frank Tiefert as Exhibit 4-A, revised Application Form as Exhibit 4-B, a Notice of the subject Lake Michigan Water Allocation Proceeding and accompanying Affidavit of Service as Exhibit 5, the 2030 Village of Volo Comprehensive Plan as Exhibit 6-A, a Village Resolution approving the Northern Lake County Lake Michigan Water Planning Group Memorandum of Understanding as Exhibit 6-B, an aerial photograph showing Applicant's future water service area as Exhibit 6-C, a Memorandum of Understanding for the Northern Lake County Lake Michigan Water Planning Group as Exhibit 6-D, an Urban Land Institute Letter in support of Village's application as Exhibit 6-E, and Resolutions in support for allocation of Lake Michigan water to members of the Water Planning Group and intent to obtain Lake Michigan water from members of same as Exhibits 6-F(1) through 6-F(9) respectively. Additionally, documentation showing the publication of the Pre-Hearing Conference Notice in the Chicago Tribune and Daily Herald were admitted, marked Exhibits A and B respectively. A court reporter's transcript was prepared memorializing the testimony of the Applicant at the March 12, 2010 Public Hearing. Finally, pursuant to Section 3730.211(a) (5) of the Department's Administrative Rules for Allocation of Water from Lake Michigan, the record of this proceeding was reopened by the Hearing Officer on December 9, 2010, for the purpose of taking official notice of fact. (See Notice of Intent of Hearing

Officer to Take Official Notice of Certain Facts.) No party objected to the taking of such official notice. This evidentiary record is that upon which the Department bases its findings and conclusions, and that upon which this Order is entered.

III. Issue Presented

The first issue presented in this proceeding is whether the Applicant can be allowed any Lake Michigan Water Allocation.

The second issue presented in this proceeding is whether the Applicant should be issued its particular requested Lake Michigan Water Allocation.

IV. Evidentiary Record

There is sufficient Lake Michigan water available to meet the request of the Applicant and the requests of all of the applicants intending to create a Municipal Joint Action Water Agency (Lake County, Village of Antioch, Village of Fox Lake, Village of Hawthorne Woods, Village of Lake Villa, Village of Lake Zurich, Village of Lindenhurst, Village of Long Grove, Village of Volo and Village of Wauconda) consistent with Section 3 of the Level of Lake Michigan Act, 615 ILCS 50/3. (Notice of Intent of Hearing Officer to Take Official Notice of Certain Facts.)

Applicant has applied for a Lake Michigan Water Allocation Permit for purposes of providing water for the Applicant's municipal water system. (Tr. 33; Ex. 1, p. 1; Ex. 2, pp. 1, 4; Ex. 2-C map; Ex. 3-C, p. 2-1, Appendix A map) Applicant's proposed start date for a Lake Michigan Water Allocation is 2015 going out to the Department's current 2030 permitting horizon. (Tr. 26-28; Ex. 2, p. 5; Ex. 4-A, p. 1) Applicant is pursuing Lake Michigan water jointly as a part of the following group of northeastern Illinois local governments making up the Northern Lake County Lake Michigan Water Planning Group: the Village of Antioch, Village of Fox Lake, Lake County, Village of Lake Villa, Village of Lake Zurich, Village of Lindenhurst, Village of Long Grove, Village of Volo and the Village of Wauconda. (Ex. 1, pp. 2-3; Ex. 3; Ex. 6-B; Ex. 6-D; Exs. 6-F (1) through (9))

Applicant's water system is supplied by 5 deep aquifer wells. Private shallow wells are used in the older part of the Village not on the Village's water supply system. (Ex. 1, p. 4; Ex. 2, p. 1; Ex.

3-C, p. 3-1) Applicant is concerned over the stress on water supply in both the shallow and deep aquifers. (Ex. 1, p. 4; Ex. 2, pp. 1-2; Ex. 3-C, pp. 3-1 – 3-2) Applicant's deep well groundwater contains barium and radium that Applicant treats via ion exchange. This causes significant problems and expense to Applicant in terms of disposing of the wastewater produced by its treatment system. Applicant is unable to expel its treatment wastewater into its sewer system and, instead, transports it to a disposal site in Wisconsin. (Tr. 29; Ex. 1, p. 5; Ex. 2, p. 1; Ex. 3-C, p. 3-1)

Applicant provided a cost evaluation study for two alternative sources of water supply – Lake Michigan Water Alternative and Ground Water Alternative. (Ex. 3-C, Section 6) The Lake Michigan Water Alternative includes the Applicant's share of the cost of the multi-community water supply system and the costs for improvements to Applicant's local water distribution system. (*id.*) The Ground Water Alternative includes only local water distribution costs such as new wells, storage and a treatment plant to produce Lake Michigan quality equivalent water. (*id.*) For purposes of groundwater treatment, Applicant projected continued use of Applicant's ion exchange treatment system, disinfected using sodium hypochlorite, with polyphosphates and fluoride added as needed. (*id.*) Applicant's cost evaluation first used present net worth to compare the two alternatives, concluding the total present net worth for the Lake Michigan Water Alternative to be \$37,746,000 and for the Ground Water Alternative to be \$41,551,000. (*id.*) Applicant's cost evaluation also used estimated water rates to compare the two alternatives, concluding the estimated water rate for the Lake Michigan Water Alternative to be \$5.94 per 1,000 gallons and for the Ground Water Alternative to be \$6.17 per 1,000 gallons. (*id.*) Regarding the costs used in the foregoing calculations, Peter Kolb, Lake County Director of Public Works, testified that, based on his knowledge of the ongoing negotiations between the Lake County Public Water District and the Northern Lake County Lake Michigan Water Planning Group, such cost amounts are appropriate. (LMO-09-01 Public Hearing Tr. 30-35) Additionally, Applicant's President Burnell Russell testified that, in his opinion, Lake Michigan water is Applicant's most cost-effective source of long term water supply. (Ex. 1, p. 3) Applicant will discontinue use of deep aquifer groundwater should it receive a Lake Michigan Water Allocation. (Tr. 39; Ex. 2, p. 7)

Applicant provided information on its projected future water demand. Applicant forecasts its 2010 population to be 2,290 increasing to 13,686 in 2030. (Ex. 3-C, p. 5-1; Ex. 4-A, p. 2)

Applicant's projected 2030 population figure is consistent with the current Chicago Metropolitan Agency for Planning forecast. (Tr. 26-28, 37-38; Ex. 1, p. 2; Ex. 2, pp. 5-6; Ex. 3-C, p. 5-1) Applicant projected its future water demand (residential, commercial, industrial and public uses) as a function of its future population by multiplying yearly population projections by average per capita per day water demand. (Ex. 3-C, p. 5-1) Applicant's original per capita per day water demand was proposed to begin at 108 gallons per capita per day ("gpcpd") in 2007, increase to 142 gpcpd in 2014 and decrease to 131 gpcpd by 2030. (Ex. 3-C, p. 5-1) After communications with Applicant's largest commercial water user regarding future water demand, Applicant has revised its projected water use downward to 92 gpcpd in 2010, decreasing to 90 gpcpd in 2015, and increasing to 103 gpcpd in 2030. (Ex. 2, p. 5; Ex. 4-A, p. 2) Using the foregoing per capita per day water demand approach, Applicant's projected water demand begins at 0.21 million gallons per day ("mgd") in 2010, increases to 0.40 mgd in 2015 and further increases to 1.41 mgd in 2030. (Ex. 4-A, p. 2) The foregoing water demand projections are a reduction from Applicant's original projections. (See Ex. 3-C, p. 5-1)

According to the information provided, Applicant's water distribution system had a 2009 unaccounted for flow above the Department's 8% regulatory unaccounted for flow standard. (Ex. 1, p. 3-1; Ex. 7, p. 7) Applicant agrees to adopt necessary conservation ordinances. (Ex. 2, p. 7)

V. Findings and Conclusions

The first issue presented is whether the Applicant can be allowed any Lake Michigan Water Allocation. The determination of this issue is based on whether Illinois' current total Lake Michigan water diversion amounts allow for sufficient potential additional water diversion to grant Applicant's requested diversion amount. The record indicates that there is sufficient Lake Michigan water available to meet the request of the Applicant and the requests of all of the applicants intending to create a Municipal Joint Action Water Agency (Lake County, Village of Antioch, Village of Fox Lake, Village of Hawthorne Woods, Village of Lake Villa, Village of Lake Zurich, Village of Lindenhurst, Village of Long Grove, Village of Volo and Village of Wauconda) consistent with Section 3 of the Level of Lake Michigan Act, 615 ILCS 50/3. Therefore, the Department finds that Illinois' total current Lake Michigan water diversion amounts allow for sufficient potential additional

water diversion to grant Applicant's requested diversion amount.

The second issue presented in this proceeding is whether the Applicant should be issued its particular requested Lake Michigan Water Allocation. The Department allocates Lake Michigan water pursuant to categories identified in Section 3730.303 of the Department's Lake Michigan Water Allocation Rules. Category 1A is given the highest priority. To qualify for inclusion in Category 1A, an applicant must demonstrate that Lake Michigan water is its most economical source of supply.

With respect to this issue, Applicant completed a cost evaluation for two alternative sources of water supply potentially available to it – Lake Michigan Water Alternative and Ground Water Alternative. The Department finds that the comparison of the Lake Michigan Water Alternative to the Ground Water Alternative is sufficient for determining the most economical source of supply. Pursuant to its cost evaluation study, Applicant determined that the Lake Michigan Water Alternative was more economical than the Ground Water Alternative using both a total present net worth analysis and an estimated future water rates analysis. Applicant concluded the total present net worth for the Lake Michigan Water Alternative to be \$37,746,000 and for the Ground Water Alternative to be \$41,551,000. Applicant concluded the estimated water rate for the Lake Michigan Water Alternative to be \$5.94 per 1,000 gallons and for the Ground Water Alternative to be \$6.17 per 1,000 gallons. The Department finds that Applicant's cost evaluation study is sufficient in methodology and in identifying reasonable costs for use therein. Accordingly, the Department concludes that Applicant has sufficiently demonstrated that Lake Michigan is the most economical source of supply and meets the requirements of Category 1A. The Department notes that this determination will also result in reducing withdrawals from the Cambrian-Ordovician deep aquifer.

The next issue in the Department's analysis becomes determining the amount of an appropriate water allocation to Applicant. Applicant projected its future water demand as a function of its future population by multiplying yearly population projections by average per capita per day water demand. The Department finds that this is an acceptable methodology for determining future water demand. Applicant forecasts its 2010 population to be 2,290 increasing to 13,686 in 2030, which is consistent with the current Chicago Metropolitan Agency for Planning forecast. The Department finds Applicant's population projection acceptable.

Applicant next proposes that its per capita per day water demand begin at 92 gallons per capita per day ("gpcpd") in 2010 increasing to 103 gpcpd by 2030. The 2010 proposed 92 gpcpd starting point is significantly less than Applicant's original 108 gpcpd request. Additionally, Applicant revised downward its projection in response to communications with its largest commercial water user. Based on the foregoing, the Department finds that Applicant's proposed 92 gallons per capita per day starting point is acceptable. Using the foregoing per capita per day water demand approach, Applicant's projected water demand begins at 0.21 million gallons per day ("mgd") in 2010, increases to 0.40 mgd in 2015 and further increases to 1.41 mgd in 2030. The Department agrees with Applicant's proposed per capita per day water demand 2010 starting point, and, therefore, also with Applicant's projected water demand based on same.

As per Department policy, if Applicant's water use projections are determined in the future to be inaccurate, the Department will adjust Applicant's water allocation amount to reflect circumstances as accurately as possible.

Finally, the Department finds that Applicant has or will appropriately enact necessary conservation ordinances and is or will be in compliance with the Department's regulatory requirement for unaccounted for flow.

Based upon the foregoing, the Department concludes that a Lake Michigan Water Allocation Permit should be issued in the amounts and under the conditions of the following Order.

ORDER

The Village of Volo is hereby issued a Lake Michigan Water Allocation Permit in the amounts as set forth below. All allocation quantities are shown in million gallons per day (mgd). As a Lake Michigan Water Allocation Permittee, the Village of Volo is required to comply with the Department's Administrative Rules for the Allocation of Water from Lake Michigan. The Village of Volo will specifically report to the Department regarding its compliance with the water conservation practices mandated by Section 3703.307 of the Rules within 90 days of this Order. The Village of Volo will also specifically complete all reporting requirements mandated by Section 3730.309 of the Rules.

<u>YEAR</u>	<u>ALLOCATION</u>
2015	0.400
2016	0.450
2017	0.502
2018	0.561
2019	0.622
2020	0.678
2021	0.751
2022	0.816
2023	0.900
2024	0.967
2025	1.044
2026	1.112
2027	1.191
2028	1.260
2029	1.341
2030	1.410

This Decision on an application by the Village of Volo for a Lake Michigan Water Allocation constitutes the Illinois Department of Natural Resources' final administrative decision within the meaning of the Administrative Review Act and shall be effective as of the date set forth below.

RECOMMENDED:

Robert G. Mool

Robert G. Mool
Hearing Officer

APPROVED:



Marc Miller
Director
Illinois Department of Natural Resources

Dated this 14th day of January 2011.

PROOF OF SERVICE

I hereby certify that the foregoing DECISION was served by mailing a copy, postage prepaid, to the following on this, the 19th day of January, 2011, to:

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