

**CITY OF GROSSE POINTE PARK
APPLICATION FOR LARGE QUANTITY WATER WITHDRAWAL**

PERMIT DECISION

December 2, 2015

**Great Lakes Shorelands Unit
Surface Water Assessment Section
Water Resources Division
Michigan Department of Environmental Quality
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EXECUTIVE SUMMARY

CITY OF GROSSE POINTE PARK APPLICATION FOR LARGE QUANTITY WATER WITHDRAWAL

On August 4, 2015, the Department of Environmental Quality (DEQ) received from the City of Grosse Pointe Park a water withdrawal permit application submitted under Part 327, Great Lakes Preservation, of the Natural Resources and Environmental Protection Act (NREPA), 1994 PA 451, as amended. The permit application was for a proposed large quantity water withdrawal of up to 3.9 million gallons per day from Lake St. Clair, for Grosse Pointe Park to establish a new source for its public water supply system.

In accordance with Part 327, the DEQ provided a public comment period of 45 days before the permit application was acted upon. The DEQ announced the permit application and invited public comment on the draft permit via public notice and Internet posting beginning on October 5, 2015. A copy of the public notice was transmitted to Grosse Pointe Park and to other units of government for postings accessible to the public. Public comments were accepted by DEQ until November 19, 2015.

On December 2, 2015, the DEQ rendered a decision in favor of permit issuance. It was concluded that with the addition of specified permit conditions, all requirements for approval under Michigan Compiled Law (MCL) 324.32723(6) have been met. This document includes the basis of the decision for issuance of a large quantity water withdrawal permit to Grosse Pointe Park for a water withdrawal of up to 3.9 million gallons per day (MGD) from Lake St. Clair.

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I. BACKGROUND

Proposed Withdrawal

The proposed large quantity water withdrawal is for up to 3.9 million gallons per day from Lake St. Clair for Grosse Pointe Park to establish a new source for its public water supply system. Grosse Pointe Park currently receives its water from the City of Detroit Water and Sewerage Department (DWSD) water supply system as a wholesale customer. Grosse Pointe Park intends to disconnect from the DWSD system following completion of this Lake St. Clair intake and new water treatment plant.

II. STATUTORY STANDARD

A person who proposes to develop new or increased withdrawal capacity of 2 MGD or more from the waters of the state to supply a common distribution system is required to obtain a water withdrawal permit prior to making the withdrawal (MCL 324.32723[1]).

Application Submittal

A person required to apply for a water withdrawal permit shall do so by submitting an application for the withdrawal to the DEQ containing the following information (MCL 324.32723[2]):

- Capacity of equipment used to make the withdrawal.
- Location of the withdrawal.
- Withdrawal source, including depth and geologic stratum if the source is groundwater.
- Amount and rate of withdrawal, and whether the withdrawal will be intermittent.
- Intended maximum monthly and annual volumes and rates, if different from the capacity of equipment used to make the withdrawal.
- Relevant information related to seasonal use.
- Description of how the water will be used and location, amount and rate of return flow.
- Any other information the person would like the DEQ to consider.

The application is required to include an evaluation of existing hydrological and hydrogeological conditions and a detailed description of any proposed preventative measures where relevant. The applicant must certify they will be in compliance with the environmentally sound and economically feasible water conservation measures (WCM) applicable to the water use sector, or to the specific proposed withdrawal. The application must also include a description of how the withdrawal will be implemented such that all criteria of Section 4.11, Decision-Making Standard of the Great Lakes – St. Lawrence River Basin Water Resources Compact (Compact) will be met. The application must be accompanied by an application fee of \$2000.

Administrative Requirements

A Part 327 water withdrawal permit application is considered to be administratively complete effective 30 days after receipt by the DEQ, unless the applicant is notified by the DEQ in writing of deficiencies in the application requiring additional information. The DEQ is required to provide a public comment period of not less than 45 days prior to acting on an application, and shall render a decision within 120 days of receipt of an administratively complete application.

The DEQ received an administratively complete water withdrawal permit application from Grosse Pointe Park on August 4, 2015. On October 5, 2015 the DEQ had completed a draft permit and sent a letter and public notice document to Grosse Pointe Park notifying them of the 45-day public comment period and the requirement to post the notice at a nearby point that is accessible to the public.

The DEQ announced the permit application and invited public comment on the draft permit via notice in the DEQ Environmental Calendars published October 5, October 19, November 2, and November 16, 2015. Comments were accepted by the DEQ until November 19, 2015.

The consumptive use estimate of the proposed withdrawal does not exceed the 5 MGD threshold established in the Compact for proposals requiring prior notice and consultation with the other Great Lakes states and provinces. Accordingly, management and regulation of the withdrawal is at the discretion of Michigan, and no notification was made to the states party to the Compact, or to the provinces party to the international Great Lakes – St. Lawrence River Basin Water Resources Agreement.

Conditions Required for Issuance of a Permit

The DEQ shall issue a permit for a water withdrawal if all of the following conditions are met (MCL 324.32723[6]):

- All water withdrawn, less any consumptive use, is returned to the source watershed.
- The withdrawal is implemented to ensure there is no individual or cumulative adverse resource impact based upon an evaluation of available information by the DEQ.
- The withdrawal will be implemented in compliance with all applicable local, state, and federal laws, as well as legally binding regional interstate and international agreements.
- The proposed use is reasonable under common law principles.
- The permit applicant certifies compliance with the environmentally sound and economically feasible water conservation measures applicable to the water use sector.
- The proposed withdrawal does not violate public or private rights and limitations imposed by Michigan water law or other common law duties.

A permit issued under MCL 324.32723 is considered to satisfy parallel conditions given in Section 4.11, Decision Making Standard, of the Compact. Subsection 4.11(5) of the Compact provides several criteria that are used to weigh the reasonable use considerations of a proposed withdrawal with greater specificity. The following criteria must be addressed in a withdrawal proposal in order to satisfy that consideration:

- Planned efficient use of the proposed withdrawal and avoidance or minimization of waste;
- Efficient use of existing water supplies if the proposal is for an increase of an existing withdrawal;
- The balance between economic and social development and environmental protection as they relate to other existing or planned withdrawals and uses sharing the same water source;
- The supply potential of the water source and interconnected water sources, including the quantity, quality, and reliability of safe yield;
- The probable degree and duration of any adverse impacts expected to be caused under foreseeable conditions by the proposed withdrawal to the waters of the Great Lakes Basin or to other uses of water;
- The proposed plans and arrangements for avoidance or mitigation of such adverse impacts, and the restoration of hydrologic conditions and functions, if necessary.

III. DECISION MAKING PROCESS

Returning Water to the Source Watershed

All water withdrawn, less any consumptive use, must be returned to the source watershed. The source watershed is the watershed of that Great Lake from which the proposed withdrawal originates (MCL 324.32701[1][kk]). The water source for the proposed withdrawal is Lake St. Clair, which is within the source watershed of Lake Erie. All water withdrawn, less the amount estimated for consumptive use, will be discharged within the Lake Erie watershed either directly or through the DWSD Wastewater Treatment Plant. Thus all water withdrawn, less the consumptive use, is returned to the source watershed.

Adverse Resource Impact

Subsection 32721(1) of Part 327 prohibits a person from making a new or increased large quantity withdrawal from the waters of the state that causes an adverse resource impact (ARI). Subsection 32701(1)(a) defines an ARI as decreasing the flow of a river or stream by explicit percentages of flow such that its ability to support characteristic fish populations is functionally impaired, or decreasing the level of a lake or pond through a direct withdrawal that would impair the uses made of the lake or pond, including its ability to support characteristic fish populations. Subsection 4.11(2) of the Compact similarly requires that a proposed withdrawal will be implemented so as to ensure it will result in no significant individual or cumulative adverse impacts to the quantity or quality of the waters and water dependent natural resources of the Great Lakes Basin.

The Grosse Pointe Park permit application included a calculation of the predicted decrease in the water level of Lake St. Clair as a result of the withdrawal. The return flow of water that is not consumed is to the Detroit River via the DWSD Wastewater Treatment Plant, and therefore the entire withdrawal is considered to be lost from Lake St. Clair for the purposes of this calculation. Although Lake St. Clair is far from a closed basin lake (a lake with no inlets or outlets) for which a volume-drawdown calculation is simple, the same approach was used as if it were a closed basin. This approach errs on the side of caution, as it likely produces a conservative estimate of over-predicted drawdown. At the maximum withdrawal rate of 3.9 MGD, the proposed withdrawal equates to an annual loss of water from Lake St. Clair of approximately 1,423,500,000 gallons, or 1.903×10^8 ft³. The surface area of Lake St. Clair is approximately 430 square miles, or 1.199×10^{10} square feet. Therefore, this volume of water loss is projected to decrease the level of Lake St. Clair by approximately 0.01587 feet per year (0.19 inches or 0.4837 centimeters). The DEQ determined this impact of the proposed withdrawal is not likely to result in individual or cumulative ARI based on other known withdrawals, nor will it result in any significant individual or cumulative adverse impacts to the quantity and quality of the waters and water dependent natural resources of the Great Lakes Basin.

Consumptive Use Considerations

The consumptive use calculation at the maximum proposed withdrawal rate is 0.39 MGD based upon an estimated consumptive use rate of 10 percent. To estimate the consumptive use rate, Grosse Pointe Park relied primarily upon the United States Geological Survey publication "Consumptive Water-Use Coefficients for the Great Lakes Basin and Climatically Similar Areas" Scientific Investigation Report 2007-5197. The published coefficient value for the public water supply sector in Table 3-2, Total water use by category for the Great Lakes Basin, by year, from the Great Lakes Commission annual reports, 1998-2002 ranges from 10 to 11 percent.

Conservation Measures

As a condition of permit approval the applicant must self-certify that he or she is in compliance with the WCM associated with the applicable water use sector or with measures developed for the specific withdrawal. WCM for the public water supply sector have been developed by the Michigan Section of the American Water Works Association and have been adopted by the DEQ. Grosse Pointe Park has certified they will incorporate these WCM and will remain in compliance with them in the operation and maintenance of its proposed withdrawal.

Reasonable Use

As a condition of permit issuance, a proposed use must be deemed reasonable under common law principles of Michigan water law and as required in the Compact. The specific criteria for consideration of reasonable use are outlined and addressed below. The DEQ determined the proposed withdrawal is reasonable.

Efficiency of the Proposed Water Use: This requirement is tied to the user's commitment to WCM in the future operation of the withdrawal. Grosse Pointe Park certified they will be in compliance with the WCM applicable to the public water supply sector, which adequately address a commitment to avoidance or minimization of the waste of water.

Efficient Use of Existing Water Supplies: Efficient use of existing water supplies and withdrawal capacity is an essential consideration when an increase to an existing withdrawal is proposed. It is intended to ensure that water is being efficiently used by a large quantity user before they are granted approval for an increased withdrawal. The proposed withdrawal is not for an increased water use, but rather is a new withdrawal source.

Balance between Economic Development, Social Development and Environmental Protection: The reasonableness of a water use relates to the balance between economic development, social development, and environmental protection and is an important consideration in the acceptability of a proposed withdrawal. Grosse Pointe Park's permit application states that the existing balance between economic and social development, and environmental protection would not be changed in any significant way under this proposed withdrawal and use, and thus the proposed withdrawal is reasonable on these grounds.

Supply Potential of the Water Source: The impact of the proposed withdrawal on the quantity, quality, reliability, and safe yield of hydrologically interconnected water sources is considered in the review process. The proposed withdrawal is predicted to have a -0.19 inch/year impact to the level of Lake St. Clair under extremely conservative conditions. There are no other anticipated impacts to the quality, reliability, or safe yield of the hydrologically interconnected water sources.

Degree and Duration of Likely Adverse Impacts: The probable degree of any adverse impacts to the quantity or quality of the waters and water dependent natural resources of the Great Lakes Basin, or to other uses of water expected to be caused by the proposed withdrawal must be considered. The withdrawal is not expected to cause adverse impacts to the waters or water dependent natural resources of the Great Lakes Basin.

Restoration of Hydrologic Conditions and Functions: If a withdrawal proposal includes measures for restoration of hydrologic conditions and functions of the source watershed they may also be considered in the review process. The withdrawal proposal did not include measures for restoration of hydrologic conditions and functions of the source watershed.

Applicable Local, State and Federal Laws

A withdrawal must be in compliance with all applicable local, state, and federal laws as well as legally binding interstate and international agreements, including the Boundary Waters Treaty of 1909 to be approved. The Boundary Waters Treaty of 1909 was agreed to by the U.S. and Canada to provide a mechanism for the resolution of disputes over waters bordering the two countries and to ensure the waters of the Great Lakes remain navigable. A condition of the water withdrawal permit will require the permittee to maintain compliance with all applicable local, state, and federal laws including but not limited to obtaining required permits.

Public or Private Rights, Limitations and Common Law

The issuance of a permit for the proposed withdrawal must not violate public or private rights or the public trust doctrine, or exceed limitations imposed on the use of the resource by Michigan water law or other common law decisions. Specifically, the DEQ must ascertain if the issuance of the permit would interfere with the public's use of the water resources, or with the state's ability to maintain the resources for the public's reasonable use. The DEQ has determined the proposed withdrawal would not violate public or private rights to the use of Lake St. Clair or other Michigan common law duties, and will not exceed any limitations imposed by Michigan water law. The issuance of this permit does not in any way authorize any violation of public or private rights, property rights, or common law water rights.

IV. PUBLIC PARTICIPATION PROCESS

The DEQ announced the permit application and invited public comment on the draft permit via notice in the DEQ Environmental Calendars published October 5, October 19, November 2, and November 16, 2015. Comments were accepted by the DEQ until November 19, 2015. The notice included an Internet link to the permit application packet and a draft permit made available on the DEQ Web site. The applicant was also required to post the public notice at a nearby point that is accessible to the public. The public notice announced the 45-day public comment period beginning on October 5, and concluding November 19, 2015.

No comments were received.

V. SUMMARY OF DEQ POSITION

The DEQ concludes that with the addition of specified permit conditions, the proposed withdrawal meets all criteria for a water withdrawal permit under Part 327 and that a permit may be issued. The authorized withdrawal capacity is 3.9 MGD from Lake St. Clair.