

**GENESEE COUNTY DRAIN COMMISSION
APPLICATION FOR A WATER WITHDRAWAL FROM LAKE HURON**

**PERMIT DECISION
And
RESPONSE TO PUBLIC COMMENTS**

August 28, 2009

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EXECUTIVE SUMMARY

GENESEE COUNTY DRAIN COMMISSION APPLICATION FOR A WATER WITHDRAWAL FROM LAKE HURON

On February 12, 2009, the Department of Environmental Quality (DEQ) received from the Genesee County Drain Commission (GCDC) a permit application submitted under Section 32723 of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (NREPA). The permit application included a request that the DEQ begin the required evaluation and public notice under Part 327, Great Lakes Preservation, of NREPA for a proposed water withdrawal from Lake Huron.

Section 32723(4) of Part 327 requires that the DEQ provide for a public comment period of not less than 45 days before a permit application is acted upon. The DEQ invited public comment on the permit application via press release, public notice and website posting. The DEQ issued the press release on the permit application on May 27, 2009, and posted the public notice on the DEQ internet website the following day. A copy of the public notice was transmitted to the GCDC on May 28, 2009 for posting at the entrance to their premises and at the shoreline parcel where a "shore well and pumping station" are to be constructed. The press release and public notice announced the public comment period and requested that comment be submitted to the DEQ by July 15, 2009.

After considering the information submitted relevant to the factors used in determining the acceptability of a permit application and the comments received, the DEQ determined that the proposed GCDC withdrawal is in compliance with the applicable standards and should be issued.

On August 28, 2009, the DEQ rendered a decision in favor of issuing the permit concluding the GCDC proposed withdrawal would not likely cause an adverse resource impact and that all other factors in rendering a permit decision had been met.

This document includes the basis of decision for issuance of a permit to the GCDC for the future withdrawal of 85 MGD from Lake Huron. Responses are provided to comments received on the permit application during the public comment period that including concerns relating to the permit process, the environmental impact of the proposed water withdrawal, the legality of the proposed water use, and the applicability of laws and regulations to the proposed withdrawal.

Many of the early comments were critical of the public notice and comment period duration regarding the permit application. The DEQ is limited in its ability to provide public comment by a Part 327 statutorily required time frame for responding to the permit application. The DEQ recognizes that this is the first application for a permit to withdraw water from a Great Lake that is subject to the standards of Part 327, the Great Lakes Charter process, the standards-of-decision in the Great Lakes-St. Lawrence River Basin Water Resources Compact, and the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement. Therefore, the DEQ reviewed additional comments received after the public comment period for consideration in application and functionality of the administrative process on this and future permit applications.

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I. BACKGROUND

Proposed Withdrawal

The proposed 85 million gallons per day (MGD) water withdrawal is from a Lake Huron water intake. The permit applicant, Genesee County Drain Commission (GCDC), proposes to use the withdrawal water for a community public water supply system, to be owned and operated by a collection of municipalities organized as the Karegnondi Water Authority (KWA). The proposed withdrawal will be via a Lake Huron water intake located approximately 3.5 miles offshore and a shore well and pumping facilities located in the south of section 31 and 32, Worth Township, T.9N, R.17E, Sanilac County, Michigan. The maximum proposed withdrawal of 85 MGD, corresponds to a maximum pumping rate of ~59,000 gallons per minute (gpm).

Public water supply is a use that the DEQ estimates to be 10 percent consumptive. While 90 percent of the water will remain in the Lake Huron watershed, the consumptive use estimate places the loss from the Great Lakes hydrologic system at 8.5 MGD.

II. STATUTORY STANDARD

A person who proposes to develop a new withdrawal 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 proposing a withdrawal from the surface waters of the state is required to apply for a permit 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,
- Amount and rate of withdrawal,
- 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 proposed preventative measures where relevant. In addition, the applicant is required to submit an application fee in the amount of \$2000.00

Administrative Requirements

MCL 324.32723 requires the department to determine whether a permit application is administratively complete. The DEQ has 30 days to make this determination, unless the applicant is notified of deficiencies in the application requiring additional information. Once an application is determined to be administratively complete, the DEQ is required to provide a public comment period of not less than 45 days and render a decision on the permit application within 120 days from the completeness determination.

The DEQ received the original permit application from the GCDC on February 12, 2009. The information was submitted in accordance with Part 327, and "proposals subject to prior notice and consultation" of The Great Lakes Charter, Principles for the Management of Great Lakes Water Resources (The Charter). On March 4, 2009 the DEQ requested additional information to better fulfill the information requirements of The Charter essential to the administrative

process. Upon receipt of the additional information the DEQ sent a letter to the GCDC dated April 24, 2009 notifying them of the completeness of the application package.

The DEQ invited public comment on the permit application via press release, public notice and website posting. The press release was issued on May 27, 2009, and the posting of the public notice on the DEQ internet website on May 28, 2009. The GCDC was provided a copy of the public notice on May 28, 2009 for posting at the entrance to their premises and at the shoreline parcel where the proposed shore well and pumping station are to be constructed. The press release and public notice announced the 45-day public comment period and requested that comments be submitted to the DEQ by July 15, 2009.

The consumptive use estimate of 8.5 MGD exceeds the 5 MGD threshold established in the Charter for proposed withdrawals requiring Prior Notice and Consultation with the other Great Lakes states and provinces. In the spirit of the companion legislation adopted by the state of Michigan in conjunction with the Great Lakes-St. Lawrence River Basin Water Resources Compact (Compact), and pursuant to the Great Lakes-St. Lawrence River Basin Sustainable Water Resources Agreement (Agreement), the DEQ's Office of the Great Lakes provided notice of the proposed withdrawal on May 26, 2009. The complete application packet was transmitted to the other Great Lakes states, the Canadian provinces of Ontario and Quebec, and the Great Lakes first nation and federally recognized tribes, with a request that comments be provided by July 20, 2009 in order for the DEQ to meet the statutory obligations of Part 327.

Conditions Required for Issuance of a Permit

The DEQ is required to 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 insure there is no individual or cumulative adverse resource impact (ARI). Cumulative impacts are to be evaluated based upon available information gathered by the DEQ;
- The withdrawal will be implemented in compliance with all applicable local, state, and federal laws, as well as all legally binding regional interstate and international agreements;
- The proposed use is reasonable;
- The permit applicant certifies compliance with the environmentally sound and economically feasible water conservation measures for the applicable water use sector; and
- The proposed withdrawal does not violate public or private rights and limitations imposed by Michigan water law or other common law duties.

Parallel requirements for approval are spelled out in Section 4.11, Decision Making Standard, of the Compact. Section 4.11(5) of the Compact provides greater specificity on reasonable use conditions and requires the parties to consider efficient use of the water; efficient use of existing water supplies; the balance between economic and social development and environmental protection as they relate to other planned withdrawals and uses sharing the same source; supply potential; the degree and duration of likely adverse impacts and the restoration of hydrologic conditions.

III. DECISION MAKING PROCESS

Consumptive Use Considerations

The consumptive use calculation was based upon a consumptive use coefficient of 10 percent. The DEQ relied primarily upon the United State Geological Survey publication “Consumptive Water-Use Coefficients for the Great Lakes Basin and Climatically Similar Areas,” Scientific Investigation Report 2007-5197. There is a relatively narrow range of coefficients for public water supplies in comparison with many of the other types of uses. Further, it is generally conceded the range is 10 to 15 percent as identified in Table 3-1, Consumptive-use coefficient used by Great Lakes jurisdictions, by water use category of the report. Upon review of the aforementioned report, the DEQ ultimately decided that 10 percent was the best estimate of consumptive use. This is the published 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. Based upon the 10 percent coefficient for consumptive use, the proposed withdrawal is projected to have a maximum consumptive use of 8.5 MGD.

Adverse Resource Impacts

Section 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.” Section 32701(1)(a)(vii) defines an adverse resource impact (ARI) for a surface water body as “decreasing the level of a lake or pond with a surface area of 5 acres or more through a direct withdrawal from the lake or pond in a manner that would impair or destroy the lake or pond or the uses made of the lake or pond, including the ability of the lake or pond to support characteristic fish populations, or such that the ability of the lake or pond to support characteristic fish populations is functionally impaired.” For flowing streams and rivers an ARI is defined as decreasing the flow by part of the index flow such that the ability of the stream to support the characteristic fish population is functionally impaired.

Part 327 establishes specific flow reduction as constituting an ARI for some stream types. No specific flow reductions are established for the Great Lakes or their connecting channels. In that case, a comparison of the proposed withdrawal to the water availability from the GL or connecting channel from which the withdrawal originates is one means of assessing the likelihood of an ARI. The proposed withdrawal of 85 MGD corresponds to a daily withdrawal of 1.136×10^7 cubic feet per day (ft^3/day) or 4.148×10^9 cubic feet per year (ft^3/year). The area of Lake Huron and Lake Michigan, which hydraulically act as a single source at the same elevation, possess a combined surface area of 45,300 square miles, or 1.263×10^{12} ft^2 . Based upon a consumptive use of 10 percent a withdrawal of 4.148×10^9 cubic feet per year (ft^3/year) would result in a projected loss of water from the Great Lakes Basin of 4.148×10^8 ft^3/year . Assuming no recharge to lakes Michigan and Huron the consumptive use loss is projected to cause a reduction in lake levels of 0.0003284 feet (0.004 inches or 0.01 centimeter). Accordingly, the DEQ concludes the impact of the proposed 85 MGD withdrawal on lake levels and the corresponding impact to the characteristic fish population would not result in an ARI as defined in Part 327.

A comparison of the proposed withdrawal to flows immediately down stream of the proposed intake in the St. Clair River provides another reasonable measure of water availability and the potential for impact. The United States Geological Survey has published average flows for the St. Clair River in excess of 183,000 cubic feet per second, corresponding to a daily flow of ~118,268 MGD. When consideration is given to return flows and consumptive use, the water theoretically lost from Lake Huron of 8.5 MGD corresponds to 0.0072 percent of the total flow.

The DEQ concludes from this comparison that the proposed withdrawal would be insufficient to cause an ARI as defined in Part 327.

Applicable Local, State and Federal Laws

To be approved, the proposed 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. Section 32726 governing local ordinances, specifically prohibits a local unit of government from enacting, or enforcing an ordinance that regulates a large quantity withdrawal. The information contained within the permit application indicates the withdrawal would be implemented in compliance with applicable state and federal laws (Part 327) and applicable international agreements. 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 insure the waters of the Great Lakes remain navigable. Nothing related to the GCDC proposed withdrawal volumes would be in violation of the treaty.

Reasonable Use

Part 327 requires that a proposed use be reasonable. As noted above the specific criteria for consideration the efficient use of the water and the efficient use of existing water supplies; a consideration of the balance between economic development, social development and environmental protect, supply potential; the degree and duration of likely adverse impacts and the restoration of hydrologic conditions. These considerations are consistent with Michigan's test for determining a reasonable use as set forth in Michigan Citizen for Water Conservation V. Nestle Waters of North America, Inc. [Michigan Citizens for Water Conservation v Nestlé Waters N America Inc, 269 Mich App 25; 709 NW2d 174 (2005)]. The considerations are addressed as follows:

Efficient Use of the Water: This requirement is directly tied to the user's commitment to Environmentally Sound and Economically Feasible Water Conservation Measures. (Conservation Measures) In the application the GCDC identified the Conservation Measures applicable to the public water supply sector that they are currently employing. A more comprehensive discussion is provided in the section entitled Conservation Measures on page 6.

Efficient Use of Existing Water Supplies: The language of the Compact specifies efficient use as a consideration when an increased withdrawal is proposed. The Compact language is intended to assure that water from various sources is being efficiently used by a large quantity user before they are granted approval for an increased withdrawal. Since the GCDC proposal is for a new withdrawal, this criterion does not apply.

Balance between Economic Development; Social Development and Environmental Protection: Reasonableness of a water use as it relates to the balance between economic development, social development and environmental protection is an important consideration in the acceptability of a proposed withdrawal.

Creation of a water authority and construction of the pipeline and treatment plants would enhance economic development in a variety of ways. During the 5-year construction period there project would provide an estimated \$100 million in skilled trades work, \$200 million in manufacturing of pipe and other equipment and 30 million in engineering and design services. Once on line the new pipeline and associated facilities is estimated to create over 50 new jobs necessary to the operation and maintenance treatment facilities, the Great Lakes intake, pipeline, and pump stations. Improving system reliability, as discussed below will also encourage economic development in the affected communities.

From a social standpoint, the proposed withdrawal and related facilities would benefit the area by enhancing the health, safety and security of area residents. The DEQ, Water Bureau (WB)

has identified deficiencies in the GCDC system primarily related to reliability. Significant effort will be placed on improving current system reliability in the design of system components associated with the proposed withdrawal. These efforts will meet with the requirements of the Safe Drinking Water Act. With the construction of new facilities the GCDC would also be improving system reliability for surrounding public water supply systems by offering emergency inter-connects and entering into mutual aid agreements.

Lastly, given the net effect of the withdrawal on the water resources as described above, these economic and social benefits to the area would be obtained without a perceptible impact on the environment.

Supply Potential: Supply potential consideration requires the DEQ look at the impact of the withdrawal on the quantity, quality, reliability, and safe yield of hydrologically interconnected water sources. The proposed withdrawal does not present any known or anticipated threat to the quantity or quality of Lake Huron as a water source. Also, the proposed withdrawal would have no impact on the reliability or the safe yield of the source as it relates to others using Lake Huron or hydrologically connected sources, such as the St. Clair/Detroit river systems.

Degree and Duration of Likely Adverse Impacts: The DEQ concluded the proposed withdrawal would not cause an ARI.

Restoration of Hydrologic Conditions: The water withdrawn by the GCDC, less consumptive use, would all be returned to the source watershed via treated wastewater discharges to the Flint River. The consumptive use losses for inside Great Lakes Basin uses are considered reasonable. Under Part 327 the restoration of hydrologic conditions does not apply to the proposed withdrawal.

Conservation Measures

For permit applications received on or after January 1, 2009, the applicant must self-certify that they are in compliance with Conservation Measures. More specifically they must certify that they are in compliance with the Conservation Measures developed by the applicable water user's sector or developed for the water use associated with that specific withdrawal (MCL 324.32723[6(e)]).

The GCDC has certified that they are in compliance with the accepted practices as developed and submitted to the DEQ for the public water supply sector by the Michigan Section of the American Water Works Association and set a goal of a less than 5 percent system wide water loss. GCDC further certifies to the promotion of educational programs related to lawn sprinkling and other outside uses, and the implementation of programs to promote water re-use and other water conservation measures by commercial and industrial facilities. The GCDC also practices "flat rate water billing," meaning large users do not pay proportionally less as their water use goes up. All water uses served by the GCDC are metered and billing is commensurate with the metered water usage. Lastly, the GCDC employs a local ordinance restricting outdoor water use during periods of peak use.

Public or Private Rights, Limitations and Common Law

The issuance of a permit on the proposed withdrawal must not violate public or private rights or interfere with 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 principle that certain natural resources, which in this case is Lake Huron, are preserved for public use, and that the state is required to maintain the resource for the public's reasonable use. The issuance of a permit for the proposed withdrawal would not interfere with the public's access to Lake Huron, the public interest in Lake Huron as a natural resource, or maintenance of Lake Huron for drinking and recreational purposes.

VI. PUBLIC PARTICIPATION PROCESS

The DEQ invited public comment on the permit application via press release, public notice and website posting. The press release was issued on May 27, 2009, and the posting of the public notice on the DEQ internet website on May 28, 2009. The web posting included the permit application packet for the proposed withdrawal and the public notice announcement. The press release and public notice announced the public comment period and requested comments be submitted to the DEQ by July 15, 2009.

The Office of the Great Lakes provided notice of the proposed withdrawal on May 26, 2009, to the other Great Lakes states, provinces and federally recognized tribes and first nations. The notice included a request that comments be provided by July 20, 2009.

The remainder of this document summarizes the comments received based on the proposed 85 MGD withdrawal by the GCDC and the DEQ response to the comments on the basis of applicable rule, policy, and procedure in administration of the permit application and review process under Part 327, Great Lakes Preservation, of NREPA.

General Comments

Many of the comments were specific to ongoing negotiations between the GCDC and the City of Detroit relative to the continued provisions for water supply service from the Detroit Water and Sewer Department (DWSD).

It was expressed by some commenters that the GCDC proposal underestimates the reliability of the DWSD public water supply system noting that DWSD possesses sufficient capacity and has an approved proposal to provide the GCDC the desired redundancy. Conversely, it was claimed the request for redundancy was made in 1965 with reciprocal commitment to construct the necessary infrastructure over the past 30 years.

A comment was made that constructing a new intake does not appropriately address deficiencies in either the GCDC or DWSD systems. As an example, there was a reference to ongoing system losses for the GCDC and DWSD of 5 percent versus 20 percent of water pumped.

Multiple comments were received with regards to the impact on water rates for DWSD customers if the KWA member municipalities were to withdraw from the DWSD system. Rate increases for the remaining DWSD customers was estimated at approximately 6 percent. A counter argument was made that the loss of a customer should not affect remaining customer rates as costs are presumably based on "cost of service."

There was a claim that the cost of the intake structure, transmission line, and separate treatment facilities for the KWA would be much greater than provided in the preliminary estimates. Conversely, The GCDC claims that all potential KWA members are aware of the cost estimates. The intake and pipeline costs are estimated at 75 percent of costs, including plans for redundancy while the treatment costs will be 25 percent of costs. GCDC also noted that separate studies on the cost of various water supply alternatives should have no bearing on the permit decision.

Response to Comments: The DEQ does not consider any comments on the relative position of the DWSD and GCDC water supply system to be legally relevant to a decision as to whether or not a permit should be issued to the GCDC for the proposed 85 MGD withdrawal from Lake Huron. Part 327 specifically requires the DEQ to issue a permit if on the basis of the submitted material the proposed water withdrawal meets the decision making criteria. The DEQ is specifically precluded from using part 327 to "...diminish or create any existing authority of municipalities to require persons to connect to municipal water supply systems as authorized by law" (MCL 324.32726).

Any addition or loss of a major customer of a regional public water system has the likelihood of affecting water rates – clearly a major addition or loss affects both the revenues and costs of operation. Water rates and the basis for establishing water rates are not an issue under Part 327. It is appropriately an issue for water service contract negotiations between the regional water system and its customers. To do otherwise invites unwanted intervention of the state into local decision making. There is nothing in Part 327 or any provisions of the Agreement and Compact that would either mandate connection to a regional water system or bind a customer permanently to a regional water system.

Applicability of Law and Regulations

Comments criticized the GCDC's application under Part 327. As a community public water supply the commenter believes the application would have been more appropriately made under the Michigan Safe Drinking Water Act, Act 399, as amended and rules. A submittal of plans and specifications under Act 399 would have provided greater clarity as to the reasonableness of the water use and the applicant's intent relative to applicable Conservation Measures.

Other comments cited the application of requirements in the Compact and expressed the opinion that the GCDC proposal did not meet the applicable standards. Most frequently referenced were the standards identified in *Section 4.11, Decision Making Standard* and *Section 4.12, Applicability* of the Compact. Relative to the former, comments suggested the proposed use is not reasonable based on efficient use of existing water supplies, balance between economic and social development, environmental protection, use of same source by multiple users, and the probable degree of adverse impacts. Relative to the latter requirements, it was implied that the Compact provides the Originating Party (i.e. Michigan) with the power to apply a much more stringent standard.

Response to Comments: Part 327 and the companion amendments to Act 399 do not provide any restrictions as to who may apply for a permit to make a large quantity water withdrawal nor specify how one must go about obtaining a permit. GCDC stated that they submitted their request for approval through Part 327 in large part to obtain the appropriate authorization of the withdrawal before investing a significant amount of money in developing plans and specification for the water works systems. Conformity with the Decision Making Standard of the Compact is, in part, the basis for the DEQ's decision on the permit application.

New Withdrawal and Consumptive Use

A number of comments focused on the fact that approval of the GCDC proposal would not result in a decrease in Detroit's ability to pump water and solicit new customers to maintain their current rate of use. As a result commenters concluded that the GCDC proposal should be treated as a new withdrawal. A corollary to this criticism was the observation that the total water withdrawal from the Great Lakes Basin would increase and that approval of the proposal would encourage other users to pursue similar use of Great Lakes waters. Some comments questioned the water use projections by the GCDC for the years 2014 to 2039. GCDC projected water use to increase by 42 percent. There was also concern that projected demand was 78.7 MGD, yet the request is for 85 MGD. There were requests that the proposed new withdrawal should be considered unacceptable unless the Detroit withdrawal was reduced by a corresponding amount.

Concern was also expressed over an increase in consumptive use. The fact that there would be an increase in use would result in additional consumptive use loss from the Great Lakes Basin. Numerous comments, particularly from other states questioned the use of 10 percent as the consumptive use coefficient indicating it should be higher. USGS publications cite consumptive use on public water supply systems in the range of 10 to 15 percent.

Response to Comments: Comments on the increased use must be addressed within the context of public water supply system operation, in particular when the increase in use is based upon population projections over a period of years. GCDC conducted a study to obtain the projected use of 78.7 MGD by 2039 based upon population and water use trends for the area currently served by the GCDC system. The GCDC explains that the request for 85 MGD provides a slight buffer over that which would be needed to account for water use in KWA member water treatment plants for such things as filter backwash. Additional buffer is provided to account for system losses. The GCDC as previously noted has set a goal of 5 percent for system losses. The DEQ determined the 85 MGD request is appropriate relative to the projected use, system operation and system water losses.

The DEQ has projected an increase in consumptive use of 8.5 MGD because the GCDC proposal is a new withdrawal. The GCDC proposed withdrawal does not affect the baseline capacity of the DWSD system or DWSD's future use of their existing baseline capacity. In the short term, the combined use of water for both the DWSD and GCDC systems will not significantly increase, because GCDC presently receives their water from DWSD. The proposed withdrawal was evaluated by the DEQ on the basis of DWSD maintaining their existing baseline capacity and evaluating the impact of a new 85 MGD withdrawal by GCDC from Lake Huron.

The consumptive use coefficient of 10 percent was obtained from *Table 3-2. Total water use by category for the Great Lakes Basin, by year, from the Great Lakes Commission annual reports, 1998-2002* in the USGS publication Consumptive Water-Use Coefficients for the Great Lakes Basin and Climatically Similar Areas, Scientific Investigations Report 2007-5197. Consumptive use coefficients for public supply over the years cited (1998-2002) were 10 and 11 percent, with 10 percent cited as the consumptive use over the entire period in question. The DEQ deemed this reference to be the most reasonable estimate of consumptive use.

Conservation Measures

There were multiple criticisms of the GCDC's commitment to water conservation. Specifically, that the GCDC identified no measures aimed at water use reduction noting that water conservation on new systems should be aggressive. Comments cited the published water conservation measures applicable to the public water supply sector noting that the GCDC has not made a commitment to each and every conservation measure. Specifically, their description of conservation measures did not include measures that promote water use conservation and the reduction of system leaks. Lastly, none of GCDC proposed wholesale or municipal customers provided information on compliance with Conservation Measures.

Commenters also expressed concern that the conservation measures identified by the GCDC were not consistent with the requirements of the Agreement and/or Compact. Plans for water use reduction or conservation were characterized as inadequate as nothing was mentioned relative to targeting system leaks and the promotion of efficient water use, in particular those leaks mentioned for the Detroit system. It was expressed that no new withdrawals should be approved until Detroit's leak problems are addressed. Some indicate there should be no approval of the withdrawal without a "water master plan" including impacts of current conservation and efficient use measures that have reduced total use and consumption. Commenters questioned whether there would be a continuation of conservation efforts made to date or whether there efforts would be improved upon. It was noted that a projected increase in population does not necessarily correspond to a projected increase in use, if one assumes more efficient use and conservation. Some commented that additional documentation is needed on water conservation measures including clear goals, targets and means of assessment.

Response to Comments: After January 1, 2009 permit applicant's are required to "self-certify" that they are in compliance with conservation measures developed by the applicable water

user's sector or developed for the water use associated with that specific withdrawal. The GCDC certified to the promotion of educational programs related to lawn sprinkling and other outside water uses, implementation of programs to promote water re-use and promotion of other water conservation measures by commercial and industrial facilities, and has set a goal of a less than 5 percent for system wide water losses. The GCDC practices "flat rate water billing," meters all water uses and bills commensurate with the metered water usage. The GCDC employs a local ordinance restriction on outdoor water use during periods of peak use.

The DEQ acknowledges the GCDC has not certified as to employing each and every water conservation measure identified for the public water supply sector, and notes there is not a requirement in Part 327 that they do so. The DEQ does commit to working with public water supplies to further water conservation efforts and will do so with the GCDC. Relative to the GCDC customers, the GCDC is making application on behalf of member communities of the KWA. All KWA members would participate in the implementation of the identified conservation measures. References to fixing deficiencies in the DWSD system are not germane to the GCDC permit application.

Reasonableness of Proposed Withdrawal

A number of comments were received relative to the reasonableness of the proposed withdrawal noting that any proposal must be considered on the basis of its purpose, suitability of use to location, the extent and amount of harm, benefits, necessity and manner of use, and other factors. The Agreement and Compact also require consideration of the economic and social value relative to potential environmental impacts and other factors. Generally, comments on the reasonableness of the proposed withdrawal focused on:

- The environmental harm that might be caused by the return of treated wastewater, and
- The necessity and amount of the withdrawal given the availability of Detroit system.

Specifically, on the issue of return flow there is a concern that points of discharge and downstream segments would be incapable of absorbing the projected 42 percent increase in discharge (based on future growth projection) without adverse impact. Commenter's claim numerous combined sewer overflows have occurred and requested verification that discharges are operating in compliance with existing laws.

Regarding the availability of the Detroit system, many comments made reference to the fact that the efficient use of existing systems is a required demonstration of reasonableness. There were claims the GCDC application should be rejected since the GCDC failed to rule out the option of using the existing DWSD system. Comments indicated that DWSW currently has the capacity to meet the needs of the GCDC and its customer municipalities, is already providing service to the proposed service area, and alleges to having made a commitment to providing reliability.

A few comments related to the economic and social value criteria of the Agreement and Compact, which requires consideration of the balance between economic development and social development and environmental protection on planned withdrawals from the same source

Response to Comments: There are four wastewater discharges by the City of Flushing, City of Flint, Genesee County's "Ragnone Plant" and the City of Lapeer. The four wastewater treatment plants are in the process of reducing infiltration and inflow from their collection systems. The National Pollutant Discharge Elimination System (NPDES) permits for the Flint and Genesee Ragnone plants discharges require treatment facility and collection system capacity analyses. The City of Lapeer proposes to rehabilitate their plant to increase the treatment capacity and accommodate an increase in population and service area. All are operating and are in compliance with the parameters stipulated by their respective NPDES permits. If the GCDC service area demands increase in the future, or if the service area expands, the DEQ will use the standard NPDES permit review/reissuance cycle (5-years) to

evaluate any impacts from increases in wastewater flow. That process will include public participation.

The efficient use of existing systems is an applicable consideration when a proposal for an increased withdrawal and consumptive use is before the DEQ for approval. That is to say, an existing system must demonstrate that it is not wasteful of its water before its request for an increase in use can be approved. Because this is a new withdrawal the requirement for efficient use of existing systems, specifically the efficient use of a system owned and operated by another party (DWSD), is not germane to the permit decision.

As a consideration on the reasonableness of a water use, social and economic development considerations must be balanced against environmental impact of the proposed withdrawal. The GCDC outlined the potential benefits including enhanced public safety, security and health that would be provided to area communities served by the proposed withdrawal. Many of the social benefits would arise as a direct outcome of the new intake, pipeline, shore well and treatment facilities correcting existing system deficiencies identified by the DEQ. The GCDC projects the proposed construction of facilities would provide a direct infusion of money, jobs and manufacturing opportunities to the area. The DEQ determined there would likely be no ARI to the commonly shared water source as the withdrawal is not of sufficient magnitude to perceptibly lower the levels of Lake Michigan and Lake Huron. Accordingly, the DEQ concludes the GCDC proposal meets the reasonableness criteria relative to social development, economic development, and environmental impact.

Adverse Impact and Requirements for Ecological Improvement

Comments pointed out that the Great Lakes states and provinces have agreed to protect, conserve, restore and improve the Great Lakes resources. Some additional analysis recommended that the DEQ ascertain if there might be a cumulative ARI and questioned why the DEQ has not required the submittal of proposed restorative measures as part of the application packet. Comment pointed out that the application packet included no information as to whether Detroit will reduce its water use, whether GCDC will remain a DWSD customer for backup, and whether DWSD will seek additional customers. Commenters indicated that if there is no net reduction in use cumulative impacts need to be addressed. Some believe what was referred to as a diversion could have a significant impact on the levels of the Great Lakes and set precedent for other large scale diversions. Eleven comments focused solely on the impact the withdrawal would have on lake levels.

Response to Comments: The DEQ has determined there would be no ARI caused by the impact of the proposed withdrawal, and no perceptible impact on the levels of the Great Lakes or connecting channels. Given the likely near term effect of the proposed withdrawal on the volume of the DWSD withdrawal, there is no identifiable issue of cumulative impacts. Part 327, ~~which is~~ the guiding legislation in the issuance of the permit, requires “preventative measures” be submitted as part of a permit application only when necessary to preclude an otherwise prohibited environmental impact. As a proposed new withdrawal, the DEQ evaluated the GCDC withdrawal without assuming there would necessarily be any change to DWSD capacity to withdraw water from the Great Lakes.

Diversion or Intra-Basin Transfer

A number of comments assumed that the proposed withdrawal constitutes a diversion, or intra-basin transfer, precluding DEQ approval under Part 327, the Agreement and Compact. Comments indicated the need for the GCDC to better identify the current and proposed service area. This was especially true in dealing with service to Shiawassee County as portions of the county are in both the Lake Michigan and Lake Huron watersheds. There was also concern that some of the service area and return flow might be to the St. Clair/Detroit River watershed, or discharged to the Lake Erie watershed resulting in an intra-basin transfer. There was concern

that approval of the withdrawal would set a dangerous precedent for the review of diversion and intra-basin transfers in the future.

Response to Comments: In accordance with Part 327, the Agreement and Compact, the DEQ has determined the proposed withdrawal would not constitute a diversion or intra-basin transfer. Portions of Shiawassee County lie in both the Lake Michigan and Lake Huron watersheds. However, Section 4.12.9 of the Compact states that Lake Michigan and Lake Huron are to be considered a single hydrologic unit and watershed. And therefore the transfer of water between Lake Michigan and Lake Huron watersheds is not considered a diversion under the Compact. None of the proposed service area lies within the watershed of the connecting channel or Lake Erie. Connecting channels are those waters and associated watershed that lie between any two of the Great Lakes. Section 4.12.7 of the Compact treats connecting channels as though they are part of both the Great Lake watersheds above and below the connecting channel.

In summary, within the applicable definitions of Part 327, the Agreement, and Compact the proposed withdrawal would not constitute a diversion or intra-basin transfer. It is a proposal potentially subject to Prior Notice and Consultation under the Charter because it is proposed as an in basin use with the only loss of Great Lakes waters due to the associated consumptive use.

Inadequate Information

A number of comments criticized the adequacy of the submitted information. Some suggested more information was needed on the movement of ground water and surface water to determine if the proposal will result in an intra-basin transfer or cause an adverse impact to the quantity and quality of Great Lakes basin waters. There were claims the proposal did not meet the requirements, spirit or intent of Agreement or Compact. The presumed inadequacy of information led to concern over consumptive use, service area information and water loss. There was also concern over inconsistencies in the information such as references to the new capacity of 85 MGD, a maximum capacity of 110 MGD and a firm capacity of 88 MGD. There were questions as to the relationship between the various cited capacities.

Others acknowledged the effort made to demonstrate consistency with the Agreement and/or Compact while noting information deficiencies. In a few instances commenter's requested information concurrent with a request for extension of the public comment period.

Response to Comments: A permit applicant under Part 327 is required to submit information including pumping capacity; location of withdrawal; withdrawal source; amount and rate of withdrawal; the maximum monthly and annual volumes and rates; relevant information related to seasonal use; a description of how the water will be used; the location, amount and rate of return flow; and an evaluation of existing hydrological and hydrogeological conditions. Other information may be provided at the discretion of the applicant with a description of preventative measures required where relevant.

Due to the magnitude of the withdrawal and its qualifying as a proposal potentially subject to Prior Notice and Consultation under the Charter, the DEQ requested the submittal of additional information. Extensive information was provided to meet information requirements in accordance with the Charter, the Agreement and Compact. The DEQ deemed the information sufficient and notified the GCDC of such on April 24, 2009.

Regarding the request for an extension of the public comment period, Part 327 contains a statutory limit on the time the DEQ may give to the consideration of a permit application. Once the applicant is notified of the completeness of application the DEQ has 120 days in which to render a decision. Given the time constraints and the adequacy of the application packet, the DEQ denied requests to grant an extension to the public comment period.

V. Summary of DEQ Position

The DEQ has determined the application for the GCDC proposed withdrawal of water from Lake Huron was submitted in accordance with the permit requirements of Part 327. Further, the proposed withdrawal is deemed not likely to cause an ARI and, as proposed, meets the intent of the Great Lakes Charter and the decision making standards of the Agreement and Compact. The DEQ based this determination on a review of the information and data pertinent to the factors used in making a decision on a permit application which included a thoughtful consideration of the comments received from the public, the other Great Lakes states, the Canadian provinces of Ontario and Quebec, and federally recognized tribes and first nations on the permit application, as made available for public review.

The authorized withdrawal capacity is 85 million gallons per day (maximum withdrawal in any single day). The DEQ will assure that capacity is not exceeded in the issuance of the required Michigan Safe Drinking Water Act construction permits (1976 P.A. 399, as amended). In addition, the DEQ will require as a condition of this Part 327 authorization that the participating members of the Karegnondi Water Authority be committed to a water conservation/water use efficiency program consistent with the water sector guidelines accepted by the state under Part 327, and posted on the DEQ website.