BRIEFING PAPER
GREAT LAKES WATER AUTHORITY WATER RESOURCES RECOVERY FACILITY
AMERICAN IRON AND STEEL WAIVER

Issue:

The Great Lakes Water Authority (GLWA) Water Resources Recovery Facility (WRRF) (aka Detroit Wastewater Treatment Plant [WWTP]) is required by their National Pollutant Discharge Elimination System (NPDES) permit to disinfect all wet weather flow that is routed to the WRRF. This can be up to and above 11 billion gallons per year. This disinfection project is required to be completed by April 1, 2019, and a part of the project requires installation of six butterfly valves in order to adequately disinfect this flow. These valves do not contain American made steel. The body, disc, stem, and seat of these valves are from China or India, though the valve actuators are made in Europe and final assembly is in Texas. There is no American made alternative for these valves. Disinfection of this flow is critical to the GLWA and the State of Michigan. It is the last needed step to ensure that all flows treated by the GLWA WWRF meet Michigan water quality standards and protect public health. The valves need to be ordered by April 23, 2018, so that they can be assembled and so that the final compliance date of April 1, 2019, can be met (though there have been recent discussion that might allow construction to continue during deliberations about the waiver). If there are further delays, the GLWA may not meet the required compliance date in their NPDES permit, and there will be continued concerns with public health. It is our understanding that technical United States Environmental Protection Agency staff has signed off on this waiver and it is now awaiting approval by the Administrator.

Background and Responses to Specific Questions:

The GLWA WRRF is arguably the largest single site WWTP in North America. This WRRF treats around 260 billion gallons of wastewater per year. Though it disinfects all dry weather flow, 11 billion gallons per year of wet weather flow is not disinfected. This flow occurs in wet weather from the partially combined collection system. NPDES permits have for 20 years required disinfection of this flow, but technical and/or financial issues have precluded completion of this project. At one time, a 20-foot diameter effluent discharge tunnel was required to be constructed to complete this project. The tunnel collapsed during construction and the project was stopped. At other times, the city of Detroit's financial condition caused the projects to be terminated. A few years ago, a new option was developed to disinfect this flow with the existing infrastructure at the WRRF. The innovative design costs less money and was permitted in the GLWA's NPDES permit. This latest project is now at issue. The GLWA consultants for this project have determined that there is no other reliable alternative for these six valves, sized at 8 and 18 inches. These valves are underground and will have to reliably work to ensure adequate disinfection of all flow.

- **What is the part? A general description of part and required waiver**. *The specific parts are six butterfly valves (8 inch and 18 inch). These valves are critical for the delivery of disinfectant in order to treat the wet weather discharge. This project is funded by the State Revolving Loan Fund program that asks for use of American made iron and steel. In order to not use American steel, a waiver is required. The waiver needs to be approved by the EPA Administrator. This current waiver request has been approved through the state, EPA program staff, and it now sits with the Administrator.*

- **Steps taken by GLWA to prove that no alternative manufactures exist within the United States. Also, additional steps of due diligence on behalf of GLWA to prove that all resources have been exhausted**. *The engineering/construction team engaged three different vendors of similar type valves that could meet the needs and specifications of the project. It was found that none of these manufacturers could provide a valve that would meet AIS certification. As well, GLWA engaged local mechanical subcontractors and more vendors to search for AIS compliant valves, and no one was able to provide CDM Smith an AIS certified valve. CDM (the engineering consultant) believes that they did everything in their power to search for a compliant valve, but were unable to find one. In addition, the CDM Smith design team did research and ran numbers using a plastic valve in place of these valves, and found that the plastic would wear and the life of the valve wouldn't meet the needs of GLWA and the project as a whole.*

- **General background on the enforceable document. Specifically, who needed to do what and why? Also, any associated timelines attributed to the waiver indicating the urgency of the request**. *The GLWA has and order and a NPDES permit and both are enforceable documents. The NPDES permit specifies effluent discharge requirements and other conditions to meet federal and state requirements and to protect water quality of the Detroit River. In addition the NPDES permit specifies the remainder of the combined sewer overflow correction requirements for the city of Detroit. The actual requirement to complete the disinfection project of the wet weather flow is contained in the NPDES permit, and it is required to be completed by April 1, 2019. This is a critical project to protect public health and meet Michigan water quality standards. The disinfection project at the WRRF is a complicated construction project. One component is the butterfly valves that are needed to deliver the needed disinfectant. In order to complete the project by April 1, 2019, the permittee must order the needed valves by April 23, 2018, since several months are needed to fabricate the valves.*

- **Public health risks – specifically, the population at risk, the source of exposure and its associated risks**. *Discharge from the GLWA WRRF is to the Rouge River and Detroit River. The Detroit River is a critical Great Lakes connecting channel in the Lake Huron to Erie corridor, and it is one of the premier fisheries in the Midwest. The population at risk includes boaters, anglers, and recreational users like water and jet skiers. There are also downstream drinking water intakes, and downstream beaches along the Michigan shoreline in Lake Erie. The wet weather discharge that is not currently disinfected will not protect public health or meet Michigan water quality standards. These important bacteriological requirements need to be met to ensure that public health is protected.*

- **Cost – both of the part itself and the social cost of not obtaining the necessary part**. *The 6 butterfly valves cost approximately $60,000. The actual social cost is immeasurable since it is the requirement of the state to ensure raw sewage discharge to its surface waters in order to protect public health and meet water quality standards. To show the importance of this project, in 2016 there was about 10.7 billion gallons of untreated discharge from combined sewers in Michigan, and 7.5 billion gallons of this was due to this wet weather discharge from the GLWA WRRF. This single project will result in a significant reduction in discharge of raw sewage to surface waters of the state.*

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