



Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street
Chicago, IL 60611

Legislation Text

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TRANSMITTAL LETTER FOR BOARD MEETING OF OCTOBER 7, 2010

COMMITTEE ON ENGINEERING

Mr. Richard Lanyon, Executive Director

Report on decommissioning the Lemont Water Reclamation Plant and conveying wastewater from the Lemont Basin to the Stickney Water Reclamation Plant

Dear Sir:

The following report provides a brief history of recent events related to the Lemont Water Reclamation Plant (WRP) and current efforts to decommission the Lemont WRP and convey wastewater from the Lemont Basin to the Stickney WRP for treatment.

In order to determine the future plans for the Lemont WRP, which included accommodating projected future population growth in Lemont Basin, the Engineering Department (Engineering) hired a consultant in 2001 to prepare the Lemont Basin and WRP Study. At the Board meeting of July 14, 2005, Engineering reported on the conclusion of the study. The selected alternative involved expanding the treatment capacity of the Lemont WRP. Subsequently, in October 2006, Engineering retained the firm of CH2M Hill, Inc. to provide design services for the expansion of the Lemont WRP. CH2M Hill's scope of work included a Project Definition Task to be performed at the onset of the project. This task provided an opportunity to compare various plant expansion alternatives prior to commencing preliminary design.

At the request of the Maintenance and Operations Department (M&O), an alternative for installing an unmanned pumping station in lieu of the plant was also developed and compared along with the plant expansion options. After reviewing the life cycle costs of the alternatives with M&O, the selected alternative was to decommission the Lemont WRP and construct an unmanned pumping station on the site to convey the wastewater to the another District plant for treatment. The Board of Commissioners was notified of this latest plan via memorandums dated July 26, 2010 and August 9, 2010. Under this scenario, the District would, in the long term, reduce expenditures from the Corporate Fund. In a letter dated September 28, 2007, M&O formally notified the Illinois Environmental Protection Agency (IEPA) of this new plan.

Engineering and M&O then worked with CH2M Hill to develop a design scheme for this concept. Developing a cost-effective scheme proved to be challenging. Surface bedrock at the site makes excavation difficult and expensive. Wet-weather peaking factors of seven to eight times dry weather flow from the Village of Lemont's (Village) separate sewer area interceptors, a result of excessive infiltration and inflow, requires special consideration for flow equalization. The scheme has to be in compliance with the state's combined sewer overflow (CSO) regulations. This required presentation of several alternatives to the IEPA and subsequent revision of those schemes.

On September 17, 2009, the District received a violation notice from the IEPA for discharges into the Chicago Sanitary and Ship Canal from the Lemont WRP overflow point identified in the NPDES permit as outfall 002. This outfall has for several years been a matter of contention between the IEPA and the District. Prior to 2001, the Lemont NPDES permit identified outfall 002 as an emergency high level overflow. The District believed that

designation was correct in that outfall 002 served to protect the plant from flooding during extreme wet weather flow events. In 2001 with the NPDES permit renewal review process, the IEPA took the position that due to the frequency of overflows, and since the treatment plant received flow from the combined sewer portion of the Village, discharges from outfall 002 are considered CSOs that must comply with state CSO regulations. The IEPA simultaneously issued a violation notice to the Village related to its two CSOs, and directed the District to work with the Village to develop long-term control plans (LTCPs) to reduce, eliminate, or treat our respective CSO discharges.

On September 15, 2010, in response to the violation notice, the District submitted a formal LTCP to the IEPA, which included a description of the District's proposed facilities, as well as implementation schedules for the facilities. The submitted LTCP is briefly described as follows:

- Construct a pumping station and force mains to convey all flows from the sanitary sewer system, as well as all dry weather flows and the first flush of storm flows from the combined sewer system, to an interceptor in the Stickney Service Area. Flows will then be treated at the Stickney WRP. Two force mains will convey average and peak flows 11 miles to the connection point.
- Increase the size of the 18-inch interceptor sewer entering the plant site from the Village's combined sewer area. Construct a flow control device on the new interceptor to divert flows from the Village's combined sewer area in excess of the dry weather volume to a wet-weather treatment facility. The wet-weather treatment facility will consist of primary treatment followed by disinfection, be sized to treat up to ten times the volume of dry weather flow (approximately 6.8 MGD), and will discharge into the Chicago Sanitary and Ship Canal via a new outfall. (By permit, the District is obligated to provide primary treatment and disinfection for up to ten times the dry weather flow volume from the Village's combined sewer area.)
- Construct an equalization reservoir to buffer the peak wet-weather flows from the Village's separate sewer area into the pumping station. A five million gallon equalization reservoir will be mined on the site, lined, and covered for odor control.
- Decommission the existing Lemont WRP.

The schematics of the current flow scheme and proposed flow scheme are attached. Note that the Village's two outfalls are located along Stephen Street and are designated as "Lemont CSO 002" and "Lemont CSO 003" in Figures 1 and 2.

The Village's LTCP is to continue to separate the sewers in its combined sewer area as funds become available. Beyond that, the Village is taking the position that the CSOs experienced at its two discharge points will be eliminated or reduced once the District increases the capacity of the 18-inch interceptor. The IEPA is requiring the Village to model its collection system and provide evidence that its CSOs will not discharge more than four times per year in accordance with the Federal CSO Policy.

In addition, in response to questions from the IEPA, the District's LTCP demonstrates that the flows from the Lemont Basin are extremely small relative to the treatment capacity of the Stickney WRP and the storage volume of the TARP tunnels and planned McCook Reservoir and, therefore, will have an insignificant impact on these facilities. The District is currently awaiting the IEPA's response to the LTCP. Upon receipt of the IEPA's formal acceptance of the LTCP, engineering design of the aforementioned facilities will begin.

It is planned that the District's proposed facilities will be constructed under three separate contracts. The following are budgetary cost estimates for the contracts. It should be noted that the project definitions are only conceptual in nature. The actual design has yet to begin, and unforeseen issues, such as difficult geology or

right-of-way conflicts, may affect the final cost. The budgetary cost of each of the projects is as follows:

Pumping Station and Force Mains:	\$52,000,000.00
Interceptor and Wet Weather Treatment Facility:	\$10,000,000.00
Equalization Reservoir:	\$15,000,000.00

Authority to add these projects to the Engineering Department's Capital Improvements Program and the Capital Improvements Bond Fund was granted by the Board on August 12, 2010.

Finally, Engineering's agreement with CH2M Hill was originally intended for the design of a plant expansion. The plan for the future of the Lemont WRP has changed considerably. Therefore, CH2M Hill's scope of work requires extensive modifications. Since the current agreement with CH2M Hill is four years old, and much of the funds have been expended, it is in the best interest of both parties to enter into a new agreement which properly defines the new scope of work. It is also in the District's best interest to continue to retain CH2M Hill to do the engineering design work on the three new projects as they have the detailed knowledge of the site and proposed facilities and would, therefore, provide the most expeditious design. Engineering is negotiating with CH2M Hill to develop the new agreement for design of the three aforementioned projects. A request to enter into a new agreement with CH2M Hill will be made to the Board of Commissioners in the near future.

Respectfully Submitted, Kenneth A. Kits, Director of Engineering, TEK:ECB

Attachment