



**Request for City Council Committee Action
From the Department of Public Works**

Date: September 12, 2005
To: Honorable Sandra Colvin Roy, Chair Transportation & Public Works Committee
Referral to: Honorable Barbara Johnson, Chair Ways & Means/Budget Committee

**Subject: Performance Testing Agreements for Ultrafiltration Equipment
Procurement for Membrane Filtration Plant in Fridley**

Recommendation:

Authorize execution of agreements with up to five qualified equipment manufacturers to conduct performance testing of ultrafiltration membrane pilot-scale systems. Stipend for testing will be \$10,000 per system. Funds are available within the project budget (Water 7400/ 950/ 9515/ C5200024).

Previous Directives:

- On August 11, 2000, the City Council authorized the development of similar agreements for an earlier phase of the ultrafiltration project for the Columbia Heights plant.
- Several actions related to the Membrane Filtration Plant in Columbia Heights.
- On September 26, 2003, the City Council authorized the development of agreements with previous equipment manufacturers to conduct performance testing of ultrafiltration membrane pilot-scale systems for the Membrane Filtration Plant at Fridley, with a budget of for stipends of up to \$250,000.

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Approved by:

Klara A. Fabry, P.E., City Engineer, Director of Public Works

Presenters: Dale A. Folen, P.E., Professional Engineer, Engineering Services

Financial Impact (Check those that apply)

No financial impact - or - Action is within current department budget.
(If checked, go directly to Background/Supporting Information)

Action requires an appropriation increase to the Capital Budget

Action requires an appropriation increase to the Operating Budget

Action provides increased revenue for appropriation increase

Action requires use of contingency or reserves

Other financial impact (Explain):

Request provided to the Budget Office when provided to the Committee Coordinator

Background/Supporting Information:

The City of Minneapolis Capital Improvement Plan includes building a new 95 million gallon per day (mgd) Water Treatment Plant using Ultrafiltration Membranes as the treatment technology. This proposed plant, called the Fridley Membrane Filtration Plant (FMFP) will be connected to the existing Fridley Filtration Plant (FFP) which was mostly constructed in 1925.

Public Works, with the technical assistance of consultants, conducted a treatment feasibility study for the entire water supply and treatment system. The team recommended the construction of two new membrane filtration plants, one at Columbia Heights Filtration Plant (CHFP) site, and the second near the existing Fridley Filtration Plant (FFP) site. The recommendation was reviewed by a Value Engineering study (conducted by experts from six top environmental engineering consults), and a Citizen's Advisory Committee (including Minneapolis residents, state health experts, and suburban customers). All concurred with the selection of the proposed membrane filtration technology.

The project is being done in phases. Phase One was performance testing and Procurement of membrane equipment for the Membrane Filtration Plant at Columbia Heights (CHMFP). Phase Two was the design and construction of the CHMFP building and piping system to house and operate the UF equipment. These phases are being completed in 2005.

Phase Three (current project) is the procurement of membrane equipment for FMFP at Fridley. This phase includes about 6 to 9 months of performance testing to evaluate membrane capacity, operational efficiency, life-cycle costs, and design parameters of each manufacturer's membrane system.

Two previous performance testing steps have been conducted. During the first step, starting in 2003, some unexpected circumstances occurred in one pilot unit that impaired the integrity of the bidding and testing work. Two other manufacturers had a total of three pilot-scale units on site, and these had varying results, but none had conclusively passed all of the test criteria when the testing effort was halted. A second performance testing step began in 2004 after several security measures were added to the pilot testing site. In that effort, three manufacturers each provided one pilot unit each, but all three units failed at least one of the pass/fail testing criteria.

A future phase in the overall plan includes design and construction of the FMFP building system. The overall plan also includes evaluation of treatment enhancements to optimize membrane life span such as the addition of a granular activated carbon treatment system. The primary objective of the overall plan is to meet future regulations by providing physical removal of pathogenic microorganisms.

Current Request

Project manuals (specifications and testing protocol) are currently being revised to solicit a third step of performance testing. The manufacturers will submit Technical Information Packages and Bids in response to the new Project Manuals in the coming months. The (cost) Bids will remain sealed until after the completion of the performance testing in June 2006.

The Technical Information Packages will be reviewed by Public Works and consultants to evaluate the qualifications of each system. We request authorization to execute up to five agreements with qualified equipment manufacturers to conduct performance testing. Each system will need to successfully complete the specified testing protocol to receive the stipend.

(No Additional Information Attached)

C: David Ybarra, Assistant Director, Purchasing