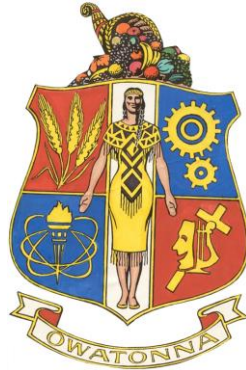


# THE CITY OF

Office of Public Works Director  
City Engineer



# OWATONNA

540 West Hills Circle  
Owatonna, MN 55060-4701  
Ph. (507) 774-7307  
FAX: (507) 444-4351

TO: HONORABLE MAYOR AND CITY COUNCIL  
FROM: KYLE SKOV, PUBLIC WORKS DIRECTOR AND CITY ENGINEER  
DATE: May 7, 2021  
SUBJECT: Statement of Intent – Suez – WWTP expansion

## **Purpose**

Approval of statement of intent with Suez WTS Systems USA, Inc. for development of plans and specifications for the WWTP expansion.

## **Background:**

Four equipment suppliers were invited to submit proposals for the WWTP expansion. The equipment to be supplied is the Membrane Bio Reactor (MBR) and associated piping. The expansion is designed around the equipment and therefore the supplier needed to be selected early in the project development.

## **Budget Impact:**

The cost for development of shop drawings is \$125,000.00.

## **Staff Recommendation:**

Staff recommends approval of this Statement of Intent.



May 7, 2021

7135 MADISON AVENUE W  
MINNEAPOLIS, MN 55427  
www.neroeng.com  
(612) 240-0524

**TO:**

City of Owatonna  
Attn: Kyle Skov  
540 West Hills Circle  
Owatonna, MN 55060

Re: Letter of Recommendation  
Owatonna WWTF Upgrades and Expansion Project  
Membrane Bioreactor System Pre-Selection

Dear Mr. Skov,

The membrane bioreactor (MBR) process was selected as the technology to be utilized for solids separation with the plant expansion. On behalf of the City, Nero Engineering solicited proposals for (MBR) cassettes and ancillary equipment. Four membrane manufacturers were contacted for their best design and cost proposals, which were Koch, Suez, Dupont and Fibracast. Koch, Suez and Dupont have been manufacturing MBR cassettes for over 20 years, but Fibracast is a relatively new manufacturer having been around for about 10 years with most of the plants constructed within the past 5 years.

The purpose of the MBR pre-selection process is to choose a MBR supplier for the unique and specific design requirements needed to develop construction documents. The bid price from the selected MBR supplier, as submitted in their proposal, will be written into the Construction Bid Documents as an Allowance. The low bid construction contractor (bid in 2022) will enter into an agreement with the MBR supplier for the specified scope for the specified amount in the Allowance. If the scope is slightly modified during the subsequent design, the scope will be negotiated with the MBR supplier and the bid price will be modified. No significant changes in the scope are expected.

The Request for Proposals (RFP) specified the design criteria for the MBR process, which primarily focused on the required flows and loadings as well as performance criteria the MBR process needs to meet. In addition to the flows and loadings, the RFP provided a preliminary (or concept) design and layout for the MBR process, which incorporated design criteria and ideas Nero developed with City staff. The RFP did allow the manufacturers to submit their own designs that would meet the flows, loadings and MBR performance.

The basis of selection for the proposals with their weighting are described below:

- System Design (40%) - proposed design layout, design safety (flux rates, spare space, redundancy, etc.), operations, equipment quality and extraordinary features (i.e., membrane integrity, membrane strength, etc.).
- Capital Costs (25%) - lump sum price to provide the membranes and associated equipment to operate the membranes. Prices were adjusted for bidding in February 2022 with the prime contractor utilizing construction price indexes. Alternates were allowed but not utilized for the basis of selection.
- Present Worth Costs (10%) - Annualized operations and maintenance costs (power consumption and clean-in-place (CIP) chemicals, annualized membrane replacement, construction costs (based upon tank volume).
- Warranties (10%) - warranties on general equipment and membranes. Also evaluated for manufacturer operational assistance after commissioning.
- Proposer Qualifications (10%) - company experience, references, technical support and training, remote support and service and long-term experience.
- Proposal Quality (5%) - proposal organization, completeness and accuracy.

Four proposals were received on April 26, 2021. The review and selection group included Nero, WWTF staff and Kyle Skov who met on April 29<sup>th</sup> to discuss, evaluate and score the proposals. Table 1 is a summary of the capital costs and present worth costs. As shown, Suez provided the lowest cost in both categories. Fibracast submitted a competitive capital cost proposal but their present worth costs were significantly higher than the others because they require constant air scouring and under more pressure. The other three membranes all use pulsed air scouring.

**Table 1- Summary of Proposal Costs**

	<b>DuPont</b>	<b>Fibracast</b>	<b>Suez</b>	<b>Koch</b>
Capital System Price (Adjusted)	<b>\$4,472,500</b>	<b>\$3,775,741</b>	<b>\$3,583,800</b>	<b>\$5,021,475</b>
Present Worth Costs	<b>\$5,354,851</b>	<b>\$6,748,297</b>	<b>\$4,455,207</b>	<b>\$5,028,038</b>
Total Present Worth	<b>\$9,827,351</b>	<b>\$10,524,038</b>	<b>\$8,039,007</b>	<b>\$10,049,513</b>

After thorough review of the proposals and lengthy discussions among our group, our team developed the final scoring as summarized Table 2. The capital costs and present worth costs are weighted scoring for each category based on the lowest costs. Because Suez had both the lowest capital and present worth costs, they received 35 from these two categories. Here are some additional comments and observations from the evaluation:

- Koch received a high score for the system design, primarily because the preliminary design was based upon Koch's system. Koch membranes do not have a top potting of the fibers which can often catch fat, oils, grease and hair thus making routine maintenance easier. Some unique features of the equipment, particularly items that considered operations, added to the score as well.
- Suez didn't score as well in the system design category, primarily because of concerns about the upper potting of the membranes that can require increased operator attention. However, Suez provided the best warranty and has the most MBR experience. The high tensile strength of the Suez membrane fibers also contributed to their score.

- Dupont received extra points for having a system that can be readily tested for system integrity which may be beneficial for the disinfection requirements of the regulating agency. The other systems with their reinforced membrane fibers aren't capable of doing in situ integrity testing.
- As stated above, Fibracast has less experience than the other three proposers and was scored accordingly. While there were many aspects of the Fibracast design that were appealing, their system hasn't been proven in enough installations and not at capacities like the Owatonna WWTF to feel comfortable with their design.

**Table 2- Evaluation Summary**

	<b>Proposer Score</b>				
	<b>Max Points</b>	<b>DuPont</b>	<b>Fibracast</b>	<b>Suez</b>	<b>Koch</b>
Price	25	20.0	23.7	25.0	17.8
Present Worth Cost	10	8.3	6.6	10.0	8.9
System Design/Operations	40	35.5	33.5	34	35
Warranty	10	9	8	10	7
Proposer Qualifications	10	10	7	10	10
Proposal Quality	5	5	4	4	4
	<b>100</b>	<b>87.9</b>	<b>82.8</b>	<b>93.0</b>	<b>82.7</b>

Several group and personal discussions were conducted with Suez after the scoring was completed to address any shortcomings identified in the proposal evaluation process and get further clarifications on the design and scope. A few plant references were also engaged for their experiences with Suez. The output of this follow up is that Nero Engineering is confident that the proposal from Suez provides the best value to the City of Owatonna without compromising the operational success of the treatment plant.

The next step for the City is to execute the Statement of Intent, which is attached to this recommendation. The Statement of Intent serves as an agreement with Suez to provide MBR design effort with our team for development of the construction documents. This cost for the MBR supplier engineering services, \$125,000, was pre-determined and based upon discussions with the MBR suppliers. To be clear, the Proposal amount that will be included in the Allowance in the Bid Documents will be less \$125,000 since it is pre-paid for the engineering portion of the supplier's scope. In addition to design support throughout the construction design effort, Suez will provide a detailed shop drawing submittal to assist with the design and provide the basis for the Allowance in the construction contract.

If you have questions or comments regarding the MBR pre-selection process, proposal evaluation or Notice of Intent, please do not hesitate to contact me. If you would like me to be present at the May 18<sup>th</sup> council meeting to review this with the council, please let me know.

Sincerely,



Eric Meester, PE

Attachments: MBR Proposal Evaluation Worksheets, Statement of Intent Document  
 CC: Richard Olson, City of Owatonna

**Owatonna MBR System Proposal Evaluation Summary**

Date: 4/26/2021

Proposal Evaluation Scoring

	<b>Average</b>	<b>DuPont</b>	<b>Fibracast</b>	<b>Suez</b>	<b>Koch</b>
Validity Adjusted System Price	\$4,213,379	<b>\$4,472,500</b>	<b>\$3,775,741</b>	<b>\$3,583,800</b>	<b>\$5,021,475</b>
Present Worth Cost	\$5,396,598	<b>\$5,354,851</b>	<b>\$6,748,297</b>	<b>\$4,455,207</b>	<b>\$5,028,038</b>
Total Present Worth		<b>\$9,827,351</b>	<b>\$10,524,038</b>	<b>\$8,039,007</b>	<b>\$10,049,513</b>

Evaluation Criteria

100 Total Possible

**Proposer Score**

	<b>Max Points</b>	<b>DuPont</b>	<b>Fibracast</b>	<b>Suez</b>	<b>Koch</b>
Price	25	20.0	23.7	25.0	17.8
Present Worth Cost	10	8.3	6.6	10.0	8.9
System Design/Operations	40	35.5	33.5	34	35
Warranty	10	9	8	10	7
Proposer Qualifications	10	10	7	10	10
Proposal Quality	5	5	4	4	4
<b>Totals</b>	<b>100</b>	<b>87.9</b>	<b>82.8</b>	<b>93.0</b>	<b>82.7</b>

**Owatonna MBR System - Proposal Evaluation**

**MBR System Lump Sum Price (25 Points Available)**

	DuPont Memcor	Fibrecast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 41 00, 5.01</b>				
Lump Sum Proposal Price	\$4,472,500	\$3,700,800	\$3,583,800	\$4,899,000
Price Validity, months	12	3	12	2
Percentage of Price subject to adjustment	100%	90%	100%	100%
Project Allowance			\$125,000	
Design & Engineering			\$230,382	
Startup & Training			\$98,245	
MBR Equipment			\$3,130,173	
<b>Calculations</b>				
12 month bid validity Adjustment	\$0	\$74,941	\$0	\$122,475
Adjusted Proposal Price	\$4,472,500	\$3,775,741	\$3,583,800	\$5,021,475
<b>Evaluation Score</b>	25	Total Available		
Low Price	\$3,583,800			
Weighted Score	20.0	23.7	25.0	17.8
<b>Alternates</b>				
Brief Description and Price Impact of any Alternates offered	No. 1: deduct for end suction centrifugal instead of split case, \$87K		No. 1: deduct for a more standard control system	
	No. 2: deduct for knife gate valves instead of plug valves, \$78K			
	No. 3: deduct blower VFD by Others, \$38K			
Alternatives Under Consideration (yes/no)	Yes, No.3 applied to price	None	Yes	None

**Owatonna MBR System - Proposal Evaluation**

**Present Worth (Tank & Operating) Cost (10 Points Available)**

	DuPont Memcor	Fibracast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 1</b>				
Total Present Worth Costs	\$5,354,851	\$6,748,297	\$4,455,207	\$5,028,038
(Table 4, Item C)				
<b>Evaluation Score</b>	10	Total Available		
Low Price	\$4,455,207			
Weighted Score	8.3	6.6	10.0	8.9

**General Notes**

Pros
Cons

Sodium Hypochlorite	5347	9974	5878	9935
Citric Acid	1885	7478	626	1267
	\$13,027	\$42,129	\$7,813	\$14,146

	DuPont Memcor	Fibracast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 1</b>				
Total Present Worth Costs	\$5,354,851	\$6,748,297	\$4,543,207	\$5,028,038
(Table 4, Item C)			88000	
			\$4,455,207	
<b>Evaluation Score</b>	10	Total Available		
Low Price	\$4,543,207			
Weighted Score	8.5	6.7	10.0	9.0

Owatonna MBR System - Proposal Evaluation

System Design (40 Points Available)

			DuPont Memcor	Fibrecast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 2</b>						
<i>A. Design Layout</i>						
(Geometry, Configurations, Access)						
<i>B. Design Safety</i>						
			14% spare space	11% spare space	5.1% spare space	0% spare space
			ADF = 9.1 gfd (12.0 max)	ADF = 9.33 gfd (13 max)	ADF = 11.0 gfd (12.5 max)	ADF = 11.3 gfd (11.5 max)
			MMF = 11.8 gfd (16.2 max)	MMF = 12.13 gfd (14 max)	MMF = 14.3 gfd (16.5 max)	MMF = 14.7 gfd (16.2 max)
			MDF = 16.2 gfd (20.6 max)	MDF = 20 gfd (20 max)	MDF = 23.57 gfd (23.6 max)	MDF = 24.2 gfd (24.5 max)
			PHF = 21.6 gfd (25.0 max)	PHF = 22.22 gfd (24 max)	PHF = 26.19 gfd (29.0 max)	PHF = 26.9 gfd (29.4 max)
(Flux, Spare Space, Redundancy)				What is the consequence of MLVSS/MLSS being less than 70%?		
Membrane Area ft2			770,696	900,000	636,400	618,060
<i>C. Operations</i>						
			9.08	7.78	11.00	11.33
(Cleaning Frequency/Methods, Maintenance Difficulty, Manual Ops)						
			Bleach 1x per week	Bleach 1x per week, Citric 1x per 2 weeks	Bleach 2x per week	
			Recover 4x per year	Recover 2x per year	Recovery 2x per year	
<i>D. Equipment Quality</i>						
(Materials, Sub-Suppliers, Controls/Integration)						
				No RAS flow meters	No pipe supports	
<i>E. X Factors</i>						
(Membrane Integrity, Alternates, Other Differentiator(s))						
			Integrity Testing		Tensile Strength 135 lbs	Membranes fixed only at the bottom.
					Just completed 6 train plant and has model for that plant.	
<b>Evaluation Score</b>			<b>Weight</b>	<b>Max Pts</b>	<b>40</b>	<b>Total Available</b>
A. Design Layout			10%	4	3.5	4.0
B. Design Safety			30%	12	11.0	11.0
C. Operations			40%	16	13.0	12.0
D. Equipment Quality			10%	4	4.0	3.5
E. X Factors			10%	4	4.0	3.0
<b>Total System Design Score</b>					<b>35.5</b>	<b>33.5</b>
						<b>34.0</b>
						<b>35.0</b>

General Notes

Pros	All flux data at 10C?	Considered cleans for FeCl
Cons	Confused by the temp corrected data.	Deeper tanks New Module Design Cleaning costs seem low.



**Owatonna MBR System - Proposal Evaluation**

**Warranty (10 Points Available)**

	DuPont Memcor	Fibracast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 3</b>				
<i>A. General Equipment</i>				
(Controls, Pumps, Valves, Instruments, etc.)	24 Months		24 months	24 Months
<i>B. Membranes</i>				
(Validity Length, Gauranteed Price, Actual Validity)	10 Years	10 Years	15 Years	10 Years
	5 Year Cliff	10 Year Cliff	5 Year Cliff	2 Year Cliff
<i>C. Process/Performance</i>				
(Any Exceptions, Validity Details)	2 Years Monitoring included	5 years service contract included, \$12,000 per year after.	InSight Basic \$2500 per year InSight Pro \$11,000 per year 2 Years InSight Pro included	KSS Assist not included
<b>Evaluation Score</b>	10.0	Total Available		
Warranty Score	9.0	8.0	10.0	7.0

**Owatonna MBR System - Proposal Evaluation**

**Proposer Qualifications (10 Points Available)**

	DuPont Memcor	Fibracast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 4</b>				
<i>A. References</i>				
(Size, Quality, Operations Issues)				
<i>B. Technical Support for Design/Construct</i>				
(Design tools/formats Alignment, Training, Controls Integration)				
<i>C. Remote Support and Service Organization</i>				
(Ability to Serve location/team quality, Price, )				
<i>D. Long Term Experience</i>				
(History, Installation Quantity)			27 Years	
			22 operating >5MGD in North America	
<b>Evaluation Score</b>	10	Total Available		
Proposer Qualifications Score	10.0	7.0	10.0	10.0

**Owatonna MBR System - Proposal Evaluation**

**Proposal Quality (5 Points Available)**

	DuPont Memcor	Fibracast Fibreplate	Suez Zeeweed	Koch Pulsion
<b>Section 00 42 00, Section 5</b>				
<i>A. Completeness</i>				
(Proposal Forms, Detailed Proposal, Preliminary Drawings)				
<i>B. Coordination with Proposal Forms</i>				
(Ease of Use)				
<i>C. Organization</i>				
(Not too much Fluff, Easy to Follow)				
<b>Evaluation Score</b>	5.0	Total Available		
Proposal Quality Score	5.0	4.0	4.0	4.0

**SECTION 00 51 00  
STATEMENT OF INTENT**

DATE: May 7, 2021

EQUIPMENT SUPPLIER: SUEZ WTS Systems USA Inc.  
ADDRESS: 3239 Dundas Street West  
CITY & ZIP CODE: Oakville, Ontario L6M 4B2 Canada  
CONTACT: Ana Calderon, P.E. (Regional Manager)  
CONTACT'S PHONE NUMBER(S): (647) 286-8293  
CONTACT'S EMAIL ADDRESS: ana.calderon@suez.com

**Statement of Intent to Pre-Select Membrane Bioreactor Equipment for the  
Owatonna WWTF Upgrades & Expansion Project**

In response to the Request for Proposals (RFP #17017) dated March 2021 issued by the City of Owatonna and based on the proposal received from SUEZ WTS Systems USA Inc. (Equipment Supplier) in response to that RFP, the City has selected the Equipment Supplier's Membrane Bioreactor equipment and services to be included in the Owatonna WWTF Upgrades & Expansion Project.

It is the City's intent that the selected Membrane Bioreactor equipment will be included in the design and named in the final construction bidding documents for the Owatonna WWTF Upgrades & Expansion Project. By means of an Allowance, construction bidders will be required to include the selected Membrane Bioreactor equipment at the price quoted in the Proposal (potentially adjusted as described below). However, the construction bidders will be allowed to submit substitute equipment as required by Minnesota state law and subject to the same requirements of the Proposal Documents and detailed technical specifications developed.

The Equipment Supplier's Proposal shall remain subject to acceptance until award of the Construction Contract, anticipated to be approximately March 15, 2022 and the Proposal Price(s) may be adjusted prior to issuing bid documents for the Construction Contract based upon the index below and coordinated scope changes during the development of the Construction Bidding Documents. The Proposal Price(s) must remain unchanged until the Proposers validity date. The Proposal Price(s) may then be adjusted, if necessary, for the period between the validity date and the Notice of Award of the Construction Contract. The price adjustment shall be based upon the lesser adjustment of (a) the 20 City Construction Cost Index as published by the Engineering News Record (ENR) or (b) 0.25% per month. The percentage of the Lump Sum Price to be subjected to adjustment shall be identified by the Proposer.

It is the City's intent that the Equipment Supplier will contract directly with the successful Construction Contractor and be bound by its required schedule and contract. However, the City intends to include the following provisions in the Construction Contract with regard to the pre-selected equipment, subject to the terms and conditions of the Construction Contract that will be based on the 2018 Standard General and any Supplementary Conditions of the Construction Contract prepared by the Engineer's Joint Contract Documents Committee (EJCDC) with modifications. Typical form of the General Conditions is attached in Section 00 72 00.

The City intends to utilize Federal Clean Water funds for the project. Section 00 73 30 includes the Minnesota Public Facilities Authority (PFA) Contract Packet which must be included in all bidding solicitations. This Contract Packet identifies the contract conditions that apply to Clean Water and Drinking Water Revolving Fund projects and contains forms that must be used later in the procurement process. Proposer is required to review and comply with the packet. Some portions of the packet are not applicable to this pre-selection, such as the prevailing wage requirements.

This Statement of Intent will also serve as a purchase order for \$125,000.00 to include the following products and services prior to issuance of the Construction Contract.

- Shop drawing submittal for all scope of supply items. See specification Section 01 33 00 Submittals for additional details on shop drawing submittal requirements. The shop drawing submittal will be reviewed and approved by the Engineer and be incorporated into the final design and included in the Construction Bid Documents.
- Design assistance and coordination during the final design and Construction Document development for the Construction Contract. The primary contact for the project design is Lead Process Engineer, Jennifer Svennes at Nero Engineering, [jsvennes@neroeng.com](mailto:jsvennes@neroeng.com), 605-690-9073.

Following the Construction Contract bidding and subsequent award by the City of Owatonna to the Contractor, the Contractor will issue a purchase order to the Membrane Bioreactor Equipment Supplier. The Supplier may request progress payments to the Contractor based upon the following payment schedule:

1. Notice to Proceed from the Contractor - 10%
2. Acceptance of Delivery by the Contractor - 75%
3. Completion of all training, startup, field testing, approved operation and maintenance manual and commissioning of all equipment and processes, and all other required documents received less any set offs or withholding, including but not limited to, liquidated damages - 15%

Retainage will be held in accordance with the Standard General Conditions of the Construction Contract.

Signed by City

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ACKNOWLEDGED AND AGREED

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David Bingham, Commercial Director  
SUEZ WTS Systems USA Inc

Date: \_\_\_\_\_

Attachments:  
Equipment Supplier Proposal