

**MINUTES OF THE REGULAR MEETING
OF THE BOARD OF TRUSTEES
OF FOX METRO WATER RECLAMATION DISTRICT
HELD WEDNESDAY, NOVEMBER 16, 2016**

The Board of Trustees met in a regular monthly meeting at 9:30 A.M. in the offices of the District at the Water Pollution Control Plant on Wednesday, November 16, 2016. President James Detzler presided and with him were, Trustee Judith S. Sotir, Trustee Michael C. Funkey, Trustee Albert E. Heriaud & Trustee Christopher C. Childress. Also present were Attorney Boyd Ingemunson, Manager Thomas Muth, District Engineer Philippe Moreau, and Mark Halm from Walter E. Deuchler, Human Resources Coordinator Patrick Divine, Controller Jimmie Delgado, Field Services Manager Matt Woodin, Engineering & Field Supervisor Keith Zollers and Administrative Assistant Norma Rodriguez.

9204

The bills were presented and read. It was moved by Trustee Sotir, that the bills be allowed as read, and that checks be drawn in payment account during the month of October, 2016 in the amount of \$4,592,587.11 be ratified and approved. Motion was seconded by Trustee Heriaud put to vote and unanimously carried that the bills be paid as presented.

9205

It was moved by Trustee Sotir seconded by Trustee Heriaud, put to vote and unanimously carried that the Treasurer's Report for October, 2016 be approved as submitted.

9206


It was moved by Trustee Sotir, seconded by Trustee Heriaud, put to vote and unanimously carried that the minutes of the October 19, 2016 Regular Board Meeting be approved as written. Each of the Trustees having received and read copies of said minutes before the meeting.

9207

With no Public Comments, It was moved by President Detzler, seconded by Trustee Sotir, put to vote and unanimously carried that the Regular Board Meeting be temporarily adjourned for the Committee of Local Improvements.

The Regular Board Meeting adjourned at 9:35A.M.

In the Committee of Local Improvements Manager Muth reviewed with the Board the Phosphorus Removal Feasibility Study. This report consists of 16 chapters, the first seven chapters were discussed at the October Board Meeting. Manager Muth briefly reviewed those seven chapters with the Board and continued with the rest of the report. This report is very scientific and a lot of analysis and sampling has been put in place to formulate a model. The model dictates where the existing process units can be placed to be successful.




The CSO Long Term Control Plan has been approved by both the IEPA and USEPA and it dictates where to gear the six phases of the South Plant project, how the money is spent and why.

Manager Muth gave an overview of the rest of the report to the Board. He discussed the pilot study of the AO process and reported to the Board that it was successful. He said a new pilot study will begin in tertiary filter #2 where a blue cloth was installed and Ferric Chloride will be added to see how well Phosphorus is removed.

At this time Manager Muth turned over the presentation to Mark Halm from Walter E. Deuchler and Associates. Mr. Halm said the South Plant is currently under construction and it can be operated in a number of different ways and he displayed that in his presentation. He said the existing treatment facility includes tertiary filters. Biological phosphorus removal in conjunction with chemical addition and tertiary filtration can be used to accomplish the 0.5 mg/l and 1.0 mg/l effluent goals. To achieve 0.1 mg/l phosphorus removal, more advanced technologies are required. Mr. Halm explained CoMag, BluePro Filters, Aqua Diamond Filters with Blue Cloth Media which are the different advanced technologies used. He said Phosphorus is a mineral required to sustain life. If the Phosphorus is precipitated using Ferric Chloride, its bioavailability is dramatically reduced. Phosphorus recovery using a controlled struvite formation reaction is a way to recover Phosphorus for beneficial reuse as a fertilizer. Mr. Halm said the world is running out of Phosphorus which is a very important element. He said there were some concerns with the marketability of the product and the complexity of the process for the Operation and Maintenance staff. Fox Metro's plant Supervisors and some engineers from Walter E. Deuchler Associates took a trip to the facility in Madison, Wisconsin to look at their process.

Trustee Sotir asked what the difference was between their process and Fox Metro's. Mr. Halm said Wisconsin is using a manufacturer that takes the Centrate stream from the dewatering centrifuges and they use an up flow reactor to create Magnesium Ammonium Phosphate pellets. Mr. Halm emphasized that this process requires a fairly large building and an up flow reactor and Sodium Hydroxide needs to be added to adjust the PH. Sodium Hydroxide is a very caustic chemical and Magnesium needs to be added because typically the waste water is going to be lacking Magnesium. Mr. Halm said this is a very expensive process, it was estimated at approximately \$18,000,000.00. Trustee Sotir asked if anything can be done with the Phosphate Pellets. Mr. Halm said they could be sold at approximately \$400.00 per ton. The Manufacturers would be the ones to buy this back and they already have the market chains available and they market this as Crystal Green Fertilizer. This is a very slow release fertilizer and this makes it unattractive to the agricultural industry. This product is mainly used on sod farms. Mr. Halm said the question is if the capital investment and operational complexity is worth it at this point when we have a 1.0 mg/l effluent limit.




Mr. Halm explained that the existing North Facility aeration system volume limits the number of processes that can be implemented. Currently, the aeration system is used for single stage nitrification, which is the conversion of ammonia to nitrate. If a portion of the volume was dedicated for phosphorus removal, there would be a negative impact on the ability to achieve nitrification. Centrate Deammonification was investigated to reduce the ammonia loading on the single stage nitrification process thereby permitting a portion of the volume to be dedicated to biological phosphorus removal. When conducting the study it was discovered that there was not an economic benefit in implementing this process.

Mr. Halm said using the calibrated existing conditions model, a steady state model was prepared to assess the various permitting scenarios required by the NPDES Permit.

Mr. Halm's presentation included many different charts and graphs that discussed the model results and tables. One table presented the ferric chloride dosages required to meet the 0.5 mg/l and 1.0 mg/l effluent goals. Another table showed that there was an increase in solids production as a result of the addition of ferric chloride.

Mr. Halm also showed a table which evaluated the economic impacts of implementing phosphorus removal. This table showed the annual operations and maintenance costs for each of the modeling scenarios. During cold weather, more ferric chloride is required due to inefficiency of microorganisms in the winter time. As a result, there is less phosphorus uptake by the phosphorus accumulating organisms.

Mr. Halm explained another table that showed the annual operations and maintenance costs of each the six temperature condition phases. The table presented the net present value evaluation of alternatives to meet effluent total phosphorus requirements to 0.5 mg/l and 1.0 mg/l annually as well as seasonally. Note that on a present value basis, the costs for achieving a 0.5 mg/l TP effluent is approximately 10% greater than achieving 1.0 mg/l for Phase II, and 7% for Phase VI. Also the capital costs for the Phase II 0.5 mg/l TP and 1.0 mg/l TP effluent scenarios are the same. Many facilities in the State will be required to install tertiary filters to meet a 0.5 mg/l TP effluent. Fox Metro would have the benefit of utilizing existing filters and therefore there is no capital cost difference between the 0.5 mg/l TP and 1.0 mg/l TP effluent scenarios. Mr. Halm explained the capital costs associated with achieving phosphorus removal. The incremental capital cost for constructing the South Facility to accommodate future growth was not taken into consideration in the economic evaluation. He said in order to meet the milestones required in the NPDES permit and with the goals of the 2005 Master Plan and CSO LTCP in mind, Fox Metro has committed to constructing the South Facility. Trustee Childress asked if the change in administration will cause a change in our permit. Mr. Halm said that was difficult to answer. He said some states have already gone down this road, Illinois is lagging and in Wisconsin



they already have .10 mg/l TP. Manager Muth added that there are many permits up for permit renewal in the State of Illinois and environmental groups have been involved with this process immensely with the IEPA. They have been at the table trying to propose a standard more stringent than the current 1.0 mg/l. Knowing that Wisconsin is already at .10 mg/l TP, the environmental groups proposed that by 2030 there is an annual average of .50 mg/l TP. This gives thirteen years to these permit agencies to get to that level. The way this pertains to Fox Metro is because we belong to a watershed group and have been working on establishing what our needs are to get it in compliance, the model that the Fox River Study Group has generated is going to dictate what our limit will be in the future.

Manager Muth said Fox Metro had a meeting the USEPA last Friday and they stated that there might be other things that can be done rather than going to the lowest level of .10 mg/l TP. They said perhaps spend the funds in removing dams because that could help the health of the river.

The IEPA is looking for the Fox River Study Group to have an implantation plan to get these conditions met within the coming years. For others, the environmental groups do not want to be managing each one of these permits and going to court with regard to not meeting their permit limits. They are proposing that by 2030 there is a .50 mg/l TP and the biological phosphorus removal process is utilized.

Mr. Halm says there are two drivers for the limit, one is gulf hypoxia and it states that it has to remove nine million pounds of phosphorus a year from the Mississippi to the gulf. The other is local water quality impairment.

The milestone dates for meeting an effluent limit of 1 mg/l TP are as follows:

<u>Advertise for Bids</u>	<u>South Facility</u>	<u>North Facility</u>
Advertise for Bids	June 2015	June 2017
Bid Opening	August 2015	August 2017
Notice to Proceed	November 2015	November 2017
Construction Complete	December 2018	October 2019

Future phosphorus input reduction initiatives are discussed in section 16 of the study. There are major categories of dischargers: industrial, commercial and residential. Industry accounts for approximately 25 to 30 percent of the total influent phosphorus loading to the plant. Industrial dischargers are required by the District to have a permit to discharge to the treatment plant and as a result are the easiest influent source to regulate. In the coming months, the Fox Metro Water Reclamation District will be evaluating a per pound surcharge to be assessed against industrial discharges based on the cost evaluations. Fox Metro will also work with the primary industrial Phosphorus sources to reduce their inputs.

9208

At 10:00 A.M. Manager Muth opened and read aloud bids received for Orchard Road Compensatory Storage as follows: Lake County Grading, LLC – Total Bid \$382,650.00; Martan Construction, Inc., – Total Bid \$311,140.25; Fox Excavating, Inc., – Total Bid \$590,714.00; Kane County Excavating – Total Bid \$249,696.00; D Construction, Inc., – Total Bid \$259,000.00; Berger Excavating Contractors, Inc., – Total Bid 384,900.00. The Engineer’s estimate for this project was \$725,000.00. It was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried that the low bid of Fox Excavating, be accepted for \$249,696.00 and the bid of D Construction for \$259,000.00 be held pending specification review by Fox Metro Water Reclamation District and Walter E. Deuchler Engineering Staff.

9209


At 10:10 A.M. Manager Muth opened and read aloud re-bids received for Building G Improvements as follows: AMS Mechanical Systems, Inc., – Total Bid \$6,841,575.00; Whitaker Construction, Inc., – Total Bid \$6,840,000.00; It was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried that the low bid of Whitaker, be accepted for \$6,840,000.00 and the bid of AMS Mechanical System for \$6,841,575.00 be held pending specification review by Fox Metro Water Reclamation District and Walter E. Deuchler Engineering Staff.

Mr. Halm continued with his presentation in the Committee of Local Improvements. Trustee Funkey inquired what the best process was for the environment and the quality of the effluent that Fox Metro produces. Mr. Halm said the best process would be the Ostara process because it is the most “green” process but there is a cost to the District to implement. He said he has that cost per pound.

Trustee Sotir asked if Fox Metro did not go with the Ostara process, what would our plant do with the phosphorus? Mr. Halm said phosphorus is bound with the Ferric Chloride and that is how it leaves the plant and used in land applications with the current biosolids.

Trustee Childress asked where phosphorus came from. Mr. Halm said it comes from what humans consume and excrete. There is some phosphorus the plant receives from industries as well. Trustee Childress asked if Phosphate was present in all food. Mr. Halm said there was and that soda and laundry detergent were a big source of Phosphate. Mr. Halm said there is a study that has a pie chart that illustrates all the different sources of Phosphates and he will forward it to the Board members.

Trustee Childress asked what our Phosphorus limit is right now. Manager Muth said we currently have no limit but we discharge at approximately 3.0 mg/l TP and it needs to be reduced to 1.0 mg/l TP by mid-2021. Phosphorus levels need to be reduced 67%. Trustee Childress asked if this was in our permit and law today. Manager Muth confirmed that it was and there was a plan that was put together



and we were aggressive to meet the deadline because it was known this was going to happen and that's why the District is in a position to meet the limit. Manager Muth said a rate study needs to be completed every two years. He said the last rate increase went into effect last June and now the next two and five years need to be analyzed. In February or March a new rate study will be brought to the Board. This will address future financial needs.

9210

With no other concerns to come before the Committee of Local Improvements, it was moved by Trustee Detzler, seconded by Trustee Sotir, put to vote and unanimously carried that the Regular Board Meeting reconvene.

The Regular Board Meeting reconvened at 10:55 A.M.

Attorney Boyd Ingemunson advised the Board there was no Attorney Report this month.

9211

Philippe Moreau addressed the Board with the Engineer's Report. Mr. Moreau requested approval for Partial Payment No. 11 to River City Construction, LLC in the amount of \$1,563,408.49 for the South Waste Water Treatment Plant Improvements Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$1,563,408.49 to River City Construction, LLC, for work completed on the South Waste Water Treatment Plant Project.

9212

Mr. Moreau requested approval of Partial Payment No. 8 to Spiess Construction, Inc., in the amount of \$158,026.50 for Waubonsie Interceptor River Crossing Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$158,026.50 to Spiess Construction, Inc., for work completed on Waubonsie Interceptor River Crossing Project.

9213

Mr. Moreau requested approval of Partial Payment No. 2 to Walker Process, in the amount of \$133,455.00 for Clarifier H4 – Mechanical Equipment Procurement Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$133,455.00 to Walker Process, for the work completed on Clarifier H4 – Mechanical Equipment Procurement Project.

9214

Mr. Moreau requested approval of Partial Payment No. 9 to Manusos General Contracting, in the amount of \$100,924.50 for M4 Cover Replacement Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$100,924.50 to Manusos General Contracting, for work completed on M4 Cover Replacement Project.

9215

Mr. Moreau requested approval of Partial Payment No. 3 to Lite Construction, in the amount of \$30,690.00 for Building P-1 Remodel Phase 4 Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$30,690.00 to Lite Construction for Building P-1 Remodel Phase 4 Project.

9216

Mr. Moreau requested approval of Partial Payment No. 2 to River City Construction, in the amount of \$8,450.00 for Clarifiers D5 and H4 – Mechanism Installation Project. It was moved by Trustee Sotir seconded by Trustee Funkey, put to vote and unanimously carried that payment be made in the amount of \$8,450.00 to River City Construction for Clarifiers D5 and H4 – Mechanism Installation Project.

9217

In the Manager's Report Manager he requested authorization to seek bids for the Chlorination Improvements Project to be opened at 10:00 A.M., December 21, 2016 at the Board of Trustees Meeting. It was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried to seek bids for the Chlorination Improvements Project with a bid opening at 10:00 A.M., December 21, 2016 at the Board of Trustees Meeting.

9218

Manager Muth requested authorization to seek bids for Building "W" Water System Improvements Project to be opened at 10:00 A.M., December 21, 2016 at the Board of Trustees Meeting. It was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried to seek bids for Building W Water System Improvements Project with a bid opening at 10:00 A.M., January 18, 2017 at the Board of Trustees Meeting.

9219

Manager Muth requested an Executive Session be held to discuss personnel, potential litigation and related matters. It was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried that at the conclusion of new business of today's meeting, we will temporarily adjourn for an Executive Session.

Jimmie Delgado reported that finances are good and our IMRF rate is lower.

9220

With no New Business to come before the Board, it was moved by Trustee Detzler, seconded by Trustee Sotir, put to vote and unanimously carried that this meeting be adjourned for Executive Session.

The Regular Board Meeting reconvened at 11:40 A.M.

9221

President Detzler announced there were no decisions reached in Executive Session, therefore it was moved by Trustee Sotir, seconded by Trustee Funkey, put to vote and unanimously carried that the Board Meeting be adjourned.

Meeting adjourned at 11:41 A.M.