

VILLAGE OF FREDONIA
VILLAGE BOARD MEETING
June 7, 2007

PUBLIC HEARING
WASTEWATER TREATMENT SYSTEM FACILITY PLAN
June 7, 2007

The public hearing was called to order at 7:03 p.m. by Joseph Short. Board members present: Joe Short, Jill Bertram, Fritz Buchholtz, Don Dohrwardt, Larry Palm, and Larry Waskiewicz. Also present: Director of Public Works Allen Neumann, Wastewater Treatment Plant Manager Gary Buntrock, Clerk-Treasurer Jo Ann Wagner, Mark Jaeger, Henry and Marilyn Jungling, David Roggenbuck, Nancy Karrels, and Tom Vik.

Public Hearing

Short: Thomas Vik, from McMahon and Associates is here to discuss the facility plan at the public hearing. Mr. Vik, you have the show.

Vik: Thank you very much. As mentioned, I am Tom Vik, from McMahon and Associates. I am a professional engineer and we were retained by the village almost two years ago to do a wastewater facility plan for wastewater treatment purpose. The plan was completed about a year ago, and pretty much been on the shelf since then, but the next step is to receive DNR approval and S.E.W.R.P.C. approval of the plan. One of the elements of the plan that needs to be finished before we get approval is to hold a public hearing on the plan to share the information from the plan with the public and also if there are any questions that the public may have about the plan or any comments that the public has about the plan. That is the purpose of this hearing tonight – a record of presentation of what is in the plan, the facility plan here, and it is available at the village hall if anybody cares to peruse it at their leisure. But tonight I will give a synopsis of what is in the plan and then answer any questions that you may have. First of all, the Facility Plan looks at your wastewater collection and treatment systems. It assesses the capacity of your existing system and your existing plant. And then it looks at the needs of the plant and the needs of your system. What perhaps could be improved upon or if the existing plant needs repair or rehabilitation. We take a look what your needs are and we also look into the future. Normally we would want your wastewater plant to be sized for a twenty year period. That is standard in the industry. So we take a look into the future over twenty years and we see what type of growth is expected within the planning period. And that is what we want to size your facility to handle. We also look at regulatory requirements – you're permitted by the DNR to discharge treated effluent into the Milwaukee River. So you have a discharge permit that is renewed every five years. Often the DNR will require additional requirements that you need to meet before you discharge into the river. So we take a look at the future conditions and how the DNR may react to those future flows as far as what type of limits you need to meet. Then we take a look at what facilities may be needed to meet those future conditions or those future regulatory requirements. The plan itself is organized logically into chapters. We start with water quality objectives and permit requirements; we take a look at where you are at today as far as your flows, your loadings and plant performance. Where you are at with your respect to the plant capacity and we take a look at your current needs at the plant. We also do something called infiltration and influent analysis which is a study of the impact of the clear water that may enter your sewer system during a wet weather event or high ground water event. Then we take a look at future conditions, again we look out about twenty years and in this case we looked out to the year 2030. Then based on that information we start taking a look at alternatives that may apply to your plant to meet these future conditions. We do a screening of those alternatives and come up with the best options. We take the best options and in the seventh chapter we do a cost analysis on each of those options. We take a look at not only capital cost but also operating and maintenance cost. And then we do an environmental assessment on the most feasible alternative to determine the impact on the environment. Then finally we develop a recommended plan that you might want to consider to meet your twenty year growth.

Background information on the existing plant. The plant that you have today was constructed in 1983. It is already 24 years old. The plant process, the basic process is activated sludge and the bio-tower. Most plants just use activated sludge, but you have two processes that are run together. That was the cost effective way to go back in 1983 and it has served you very well. Your bio-solids, all treatment plants generate bio-solids. Your bio-solids are treated at the wastewater plant, they are stored in a Harvestore storage tank over the winter and then they are land applied on DNR approved sites in the spring and fall as they do have some nutrient value. Finally, your effluent, your treated water, is discharged to the Milwaukee River.

The need for the project. We looked at a variety of factors. First we looked at effluent limits. We contacted the DNR and you are in pretty good shape with your effluent limit. There shouldn't be any major changes in the future. You currently have limits of 25 mg/l for CBOB and 30 mg/l for suspended solids. We don't see those changing for some time. You are good in that regard. They did note there is a limit for phosphorous of 1 mg/l and we don't see that changing either for a period of time. The DNR did add an ammonia limit to your plant of 26 mg/l, which is high and that is good, so there really didn't need to be any changes made to the way you are processing to meet that limit, but a PH control system needed to be installed so that you could achieve a higher limit and that was done in December of 2006. Currently the limits at the plant are being met; in fact, they are being met very well. Like I said your CBOD limit is 25, you are currently putting out anywhere from 2 to 5 mg/l. Same thing with suspended solids, your limit is 30 and your effluent is going out at anywhere from 4 to 7 mg/l. Again, very good. Your phosphorous limit is 1 mg/l and is going out anywhere from 0.4 to 0.9 mg/l. So, again quite low. There have been in the past occasional problems with slug loads from local industry which resulted in a spike of carbonaceous and chemical oxygen demand which affects the biology, but I don't think you have had a problem for over a year.

We do however predict that the capacity of your plant may be exceeded in the near future just because of continuing growth in the village and the chart illustrates that fact. Like I said, we look into the future to see how much growth you may be experiencing. If you take a look at the red line on the chart it illustrates your current capacity and what we are projecting is that the capacity might be exceeded right around the year 2010. So that is only three years away. Last year the BOD loadings were about 440 pounds per day, about 85% of your capacity. There was one month last year where you actually exceeded your capacity. The plant still performed well but it is starting to creep up there. So in time you will need to increase that capacity due to increased growth in the village.

If you took a look at all of the different processes that you have at the plant. There are different steps of treatment that occur, for example, in the headworks, it consists of pumping and screening and grit removal, it has a maximum capacity of about 1.5 million gallons per day. There were times, in various extreme rainfalls, when you pretty much bumped up against that capacity. So you are somewhat limited there as you continue to grow, eventually during heavy rains you will start to exceed that capacity. When that happens, you will need to put in larger pumps and a new grit removal system and another fine screen. That is something needed in the future.

The next step of treatment is the primary clarification where you settle the solids. That system is fine for now. We really don't see a need for another unit like that until about 2020.

The next step in the process is the bio-tower. This system worked and it really worked well. We feel that it perhaps needs some new media. The media you have is redwood slats, redwood media, and so far so good. Still, it does have a limited life and sooner or later, it will need to be replaced along with the support structure, which is metal and is holding it up. So I would say that in the near future, certainly within twenty years it will need to be replaced.

The next step is your activated sludge process. There you bubble air through the wastewater. The system that you are using to bubble the air through the wastewater is the old technology, called coarse bubble aeration – larger bubbles. Today plants often use a more energy efficient aeration system, it is called fine bubble aeration, and we would

recommend that you pursue that option. It will reduce your air requirement as well as reduce your power requirement for the plant. So there are a few steps that could be addressed here as well.

The next step is your final clarifiers. You have two of them and those were just rehabilitated about a year ago. So they are in pretty good shape. The re-habilitation should last for a good ten to twenty years. Some time in the future though you will need another unit, another clarifier. As you start to grow and growth continues to increase.

And then your final step is to disinfect with liquid chlorine and then if you use chlorine you also have to de-chlorinate to remove the chlorine residual before it enters the river as the chlorine is toxic to the fish and aquatic life. That system is fine; you have plenty of capacity there. The chlorine contact tank, you might need to increase the size as your growth continues to increase. Again about 2020.

The bio-solids system, if you have aerobic digesting you add more air to the waste bio-solids. And we hold it in tanks for a long period of time. Anywhere from two to three months. So while it's aerating the bugs don't have a lot of food and begin to eat themselves, and it reduces the amount of bio-solids that are land applied. The system has adequate detention time, but there some improvements that could be made to the system to make it work better, and if you were to thicken the bio-solids in your tank a little better it would reduce the volume that you have to land apply. So some time in the future you will need to make some improvements there.

And finally your storage tank – as you grow you will make more bio-solids. The storage tank is fine as long as you can thicken up the bio-solids a little better. When you land apply, you are only applying about 2% to 3% solids and 97% to 98% water. If you can thicken those bio-solids up to even 4%, you virtually reduce the volume in half. So with some changes to the digester system, we can reduce that volume and the storage tank should be big enough. There is also the provision for the addition of another four foot ring to the storage tank which would add another 50,000 gallons to the tanks capacity.

We then looked at future growth. The chart illustrates the current village population of a little over 2100 and then growth projections for the village from S.E.W.R.P.C. population projections for 2020 and 2030, and then we have a column listed for development. There is future development proposed and is added to the base that you have and will add to your population projection. For each time increment we have included, for example, in 2020 that 41% of the new development is being developed, by 2030 that 60% is developed, and then the last column will be at complete build out of each development and that would be a population at build out of 4,689 people. More than doubling your current population.

Then we looked at the impact of that growth on your plant. And we looked at ways to handle that growth by making changes to your wastewater plant. For each option we considered both capital and operating and maintenance costs. We looked at how easy it is to operate these systems, and maintain it. We want to be sure to provide a system that is reliable and can meet the effluent quality standards and also be easily expandable. We seriously considered energy efficiency and of course constructability is an issue because of the need to be easily built to keep the cost down.

So we zeroed in on four different treatment options at your plant. We took a hard look at all four. We looked at expanded your system, basically just as you have it now, just making it bigger. We looked at a system called IFAS, that is an acronym for Integrated Fixed Film Activated Sludge, and what that is you insert polyester media into your aeration tank and it provides surface area, more surface area than we currently have, for bacteria to grow on. And with the addition of bacteria in your aeration tank you can actually increase the capacity of the tanks by 50%. So it is a real easy way of gaining capacity without building new tanks. We also looked at another acronym called an SBR that is short for Sequencing Batch Reactor. It is a newer technology that would replace most of what you have with two large tanks. It would eliminate the clarifier and return sludge pumping, but it requires brand new tanks. Then finally we looked at a system known as an oxidation ditch. This is conventional technology for extended aeration. A

SBR system was just installed in Cedar Grove, and an oxidation ditch was just installed in Belgium. So these are two communities nearby that have these types of systems. The Integrated Fixed Film system was just installed in Mukwonago. These systems are out there. I would say of the three, that the Integrated Fixed Film system is the newest of the options that are out there, but there are still hundreds of them in the United States, but is relatively new to Wisconsin. The two options that were the most close in cost were the IFAS and the SBR and you can see that the capital costs were very close. But what we did, we took a look at who is going to pay for this. You have current village residents and you have future development. And when you did the cost allocation, the IFAS resulted in the lowest cost for village residents. The SBR, because you are looking at a brand new plant, has a much larger share for the village because you are replacing what you have. So in considering this, and we bantered this around quite a bit with the village board, and the village board chose to go with the IFAS to minimize the impact on existing village residents. With that in mind, we developed the recommended plan and we started to plan out over a period of time, more based on need, and we set it up in three stages. The first stage we called immediate improvements or something you might want to consider in the next few years – I put down 2007 / 2008 improvements, but the items under the immediate plan would be continuous PH monitoring which you have already done, and then converting the aeration system to integrated fixed film and fine bubble, enhancing the aeration system and automating it, and then putting in a SCADA system which monitors all your processes and provides a level of automation and control in your plant. Those items would actually result in operating and maintenance savings of \$12,000 to \$17,000 per year. If you consider what the village share is of all these options, about \$292,000 and if you borrow that money from the DNR, you virtually offset this principal and interest payment with the operation and maintenance savings. So with some creative financing using some replacement fund money there should be a zero impact on user rates for the village.

The first stage after immediate would be again based on need as you continue to grow. You will need a new headworks, larger pumps, new grit removal, a larger or another fine screen and then we would look at upgrading your bio-tower media and also the pumps that feed the bio-tower. Then the final stage would be about 2020, again depending on how fast you grow, and that would require another primary clarifier and the third final clarifier. The final flow sheet shows fine screen, grit removal, primary clarifiers, you pump into the bio-tower, you are re-using your existing aeration basins and bringing in the integrated fixed film process, and ultimately you will need a third final clarifier. This will set you up for the next twenty years.

The final steps then to the plan in order to receive approval you will need send the plan to S.E.W.R.P.C. to get their blessings on the projected growth, and then the DNR reviews the plan for conformance with S.E.W.R.P.C. as well as their administrative code for the near future and the next twenty years. If you want to proceed with the next steps for improvements, then you need authorize some engineering to get that done. The approval process for the plan for the DNR typically takes about six months. If the plan is submitted in June or July, sometime in December or early January it would be approved. At that point you could proceed with subsequent phases if you chose to implement parts of the plan. That pretty much concludes my presentation on the plan. At this point if anybody had any questions or comments on the plan.

Dohrwardt: The money from the DNR that you referred to – will it be grants or loans or whatever. If we proceed down this road, are those monies fairly consistent or are they drying up, are they becoming more? What is the forecast on that?

Vik: Right now there is a loan program with the DNR that is called Clean Water Fund and that has been funded by the legislature here in the state consistently from the late '80's on and it should be funded again for the biennium according to Governor Doyle. The state has to go out and bond for money to do that. It should be funded again for the next two years. The borrowing from the DNR is at a reduced interest rate. In your case, since a lot of the growth will be for future development, you will get a blended rate. Because the share of the plant that would be for the development would be at market rate, perhaps 4 ½ or 5%. Your share would be at the lower rate, the subsidized rate, at 2 ½%. So overall you could borrow for the entire project at a rate of about 4%. Normally you

pay that back over a twenty year period. If you go in steps, you could start doing it in stages, and borrow only what is needed for that particular stage. You could choose to do all at once, borrow it now, or you could do it in stages. The risk of doing it in stages, is three, five, ten years from now, maybe there won't be any money for the Clean Water Fund. At least for the immediate future, at least for the next two years, there is money available. Federal money, that's a different story. They seem to be giving less and less money to the pot for funding infrastructure even though the needs are getting greater. That may change with a new administration. Hard to predict that.

Dohrwardt: There are no federal funds mixed in with the DNR.

Vik: What the federal government does is they give the state seed money, small amounts of money. What the state does is they leverage that and go out and borrow more. That's what Wisconsin does. That leveraging money is getting less and less. The state in the past has been very committed to Clean Water and so far they have been funding this loan program for a good fifteen years plus. But a grant, there really is not a grant program.

Short: The costs that are associated to the village, is that going to be our normal cost, our upgrades that we need to make to continue the process.

Vik: The cost associated with the village share of the entire plan is about \$300,000 and of course the operating and maintenance cost you would need to pay for on a daily basis.

Short: Basically what I am saying is, if we didn't have any growth, we would still have some costs to keeping that plant.

Vik: Yes

Short: And the bulk of it, all the cost caused by any future development, the developer is paying their share at 100%.

Vik: Yes, they are paying their fair share.

Short: Any other questions? Any other questions from the audience? (pause) At this time (7:30 p.m.) we will close the public hearing and call the regular village board meeting to order.

Adjourn Public Hearing and Call to Order of Regular Village Board Meeting

The public hearing adjourned and the regular village board meeting was called to order at 7:30 p.m. by President Short.

Pledge of Allegiance / Roll Call

The Pledge of Allegiance was recited and roll call was taken.

Approve Minutes

Minutes of the May 17, 2007, village board meeting were approved as presented on a **MOTION** by Waskiewicz, seconded by Palm, and carried.

Payment of Bills

Payment of the General Fund, Water and Sewer bills was approved on a **MOTION** by Waskiewicz, seconded by Dohrwardt, and carried.

Approve Operator Licenses / Liquor Licenses

Operator licenses for Angelia Knapmiller and Katie Shoemaker were approved on a **MOTION** by Waskiewicz, seconded by Buchholtz, and carried. Operator licenses for Cindy Clausing, Catherine Hamm, Richard Hoffman, Laura Pantle, David Roggenbuck, Patricia Roggenbuck, Mary Sommer, Susan Tappa, Elizabeth Wedereit, and April Young were approved on a **MOTION** by Dohrwardt, seconded by Palm, and carried. Short encouraged all applicants to police their activities and help everyone eliminate sales to anyone underage. Failure to do so may jeopardize their license in the future. A

MOTION was made by Waskiewicz, seconded by Palm, to approve the Class A Beer and Liquor License for Rogels, Inc., d/b/a Village Market, Nancy Karrels, agent; and Stadko, Inc., d/b/a Fredonia Citgo, Thomas Mongoven, agent. Motion carried. A **MOTION** was made by Waskiewicz, seconded by Palm, to approve a Class B beer and liquor license for Connie Wach, d/b/a Wach this Way. Motion carried. (Karrels and Roggenbuck left).

Unfinished Business – Village Green Subdivision Stormwater

Neumann stated that no phone calls were received after the rains last week.

Clean Up of Property at 139 Wisconsin Street

The report from the Director of Public Works and Village Marshal was reviewed pertaining to the clean up of the property at 139 Wisconsin Street. Per the report from the Director of Public Works (Weed Commissioner), the grass has been cut, but a few noxious weeds are present and a letter will be sent to the property owner per Ordinance No. 8-1-5 and 8-1-7 of the village code. Per the report from the Village Marshal all vehicles still on the property are licensed. The Village Marshal will be asked to submit a report at the next meeting of any other ordinance violations pertaining to the property.

The village marshal also provided year to date statistics for the department, noted that they have increased patrols of the park area in response to fires, and the department has been recognized as an Oath of Honor Agency. Buchholtz suggested that the large box of kindling wood be moved away from the building at Neuens Lumber Company.

Lease with Verizon Wireless for Use of Water Tower for Antenna

The attorneys are still working on the final language for the lease. A **MOTION** was made by Short, seconded by Dohrwardt, to table this issue until the next meeting. Motion carried.

Resolution No. 2007-H Approving Use of Ozaukee County Sheriff's Department Software for Police Records

A **MOTION** was made by Waskiewicz, seconded by Palm, to adopt Resolution No. 2007-H approving use of the Ozaukee County Sheriff's Department software for police records. Motion carried.

Wastewater Treatment Plant Facility Plan

A **MOTION** was made by Waskiewicz, seconded by Dohrwardt, to send the Facility Plan as presented to S.E.W.R.P.C. and then the Wisconsin Department of Natural Resources for review and approval. Motion carried.

Resolution No. 2007-G Reviewing and Approving CMAR

After reviewing the Compliance Maintenance Annual Report (CMAR), a **MOTION** was made by Dohrwardt, seconded by Waskiewicz, to adopt Resolution No. 2007-G approving the CMAR. Motion carried. All areas received an "A" grade except for the collection system, which received a "B" because of an overflow. This sanitary sewer line has been upgraded.

Reconsider Deck at 414 Emerald Court

A **MOTION** was made by Palm, seconded by Waskiewicz, to reconsider the motion from the last meeting allowing a change to the stormwater easement area at 414 Emerald Court to allow construction of a deck. Discussion followed on possible reasons to or not to reconsider the motion. A roll call vote was taken with Palm, Waskiewicz, and Short voting aye, and Dohrwardt, Bertram, and Buchholtz voting nay. Motion failed. Trevor Cary expressed concern that the board has overlooked code or building violations by the builder and that it may represent a possible safety hazard. Dohrwardt stated that a village employee found a slight deviation from the storm water plan, but that it did not affect the function or the maintenance of the detention pond. This is not a code violation and although the boundary of the easement area was adjusted, it did not affect the reason for the easement.

NIMS Requirements

Short stated that the village has committed to NIMS training but has not established who needs to be trained and to what level. He suggested that the Fire Chief, Director of Public Works, Village President, and Village Marshal be trained to the 400 level and two assistant fire chiefs and ambulance captain be trained to the 300 level. Two Public Works employees, the Clerk-Treasurer, and village board members should be trained to the 200 level. The Fire Department has requested that fire fighters be paid \$10 per hour for the 300 and 400 level training. By consensus the village board agreed to these levels of training for village personnel. A **MOTION** was made by Short, seconded by Palm, to refer the cost of training for NIMS to the Finance Committee for recommendation. Motion carried.

Plan Commission – June 4, 2007

The Plan Commission approved a conditional use permit for 240 Highland Drive to sell automobiles and motorcycles, approved a site plan for 401 Highland Drive for a two-story concession stand / scoring press box, and approved the Housing Element and Economic Development Element of the Ozaukee County Multi-Jurisdictional Plan. Waskiewicz questioned the issuance of the conditional use permit at 240 Highland Drive as the storage area should be screened, no landscaping requirements were added, and no mention was made in the motion of the allowable number of vehicles. Waskiewicz noted that comments were made regarding the village marshal running radar on Hwy. 57. He stated that portions of Hwy. 57 are within the village limits, and if additional coverage is needed, this should be discussed with the village marshal.

Shared Building Committee

The Shared Building Committee has received three proposals from architects. A meeting will be set with each bidder next week. A recommendation will then be brought to the town and village board.

Architectural Control Board

The Architectural Control Board approved a new home at 445 Emerald Hills Drive and referred an unfinished shed to the building inspector.

Report from Director of Public Works

The report from the Director of Public Works was reviewed. If needed, re-roofing of the hamburger stand at Fireman's Park will be added as an alternate to the roof bid for the fire department. Work on the parking area for the soccer field will begin after asphalt patching and repair of the sanitary manhole on Hill Street. Concrete work at the Fire Department will start either before the Fire Chief's Conference or after it. It will not start between June 20 – 23rd.

Report from Clerk-Treasurer

The report from the Clerk-Treasurer was reviewed. The 2006 financial report was presented.

Clerk's Conference

Attendance at the Clerk's Conference by the Clerk-Treasurer and Deputy Clerk-Treasurer August 15, 16 and 17, with registration, mileage and lodging, was approved on a **MOTION** by Bertram, seconded by Dohrwardt, and carried.

July and August Village Board Meetings

The Village Board meets the first and third Thursday of each month. In July the first Thursday is the day after the 4th of July. No changes were made to the July board meeting schedule.

In August the third Thursday is during the Clerk's Conference. Both the Clerk-Treasurer and Deputy Clerk-Treasurer will be gone. A **MOTION** was made by Short, seconded by Palm, to meeting the second and fourth Thursday in August. Motion carried.

Boundary Agreements

Short noted he has received calls from both the Town of Fredonia and the Town of Saukville regarding boundary agreements. He stated that either a special board meeting or an ad hoc committee could be created to meet with the town to discuss boundary agreements. The Public Works Committee also needs to review the road maintenance agreements.

Correspondence

Correspondence received and reviewed include:

- Ozaukee County 2008 budget calendar.
- Ozaukee County Tourism Council – Spring 2007 newsletter.
- WI County Mutual Insurance Corp – Spring 2007 newsletter.
- Ozaukee County board – June 6, 2007 agenda.
- Open House on June 16, 2007 – Port Washington Municipal garage.

Closed Session

Per Wisconsin Statutes 19.85 (1)(c) and 19.85 (1)(e) the village board convened into closed session to discuss employee compensation and benefits and the possible purchase of land for a stormwater detention pond. Motion carried unanimously on a roll call vote.

Adjourn Closed Session and Reconvene into Open Session

The closed session adjourned and the meeting reconvened into open session on a **MOTION** by Dohrwardt, seconded by Palm, and carried unanimously on a roll call vote.

Employee Wage

Due to the certification received by Jason Nelsen a wage increase of 14 cents per hour retroactive to May 2, 2007, was approved on a **MOTION** by Dohrwardt, seconded by Waskiewicz, and carried.

A **MOTION** was made by Dohrwardt, seconded by Short, that before the 2008 budget is adopted the wage increment for certifications be reviewed and adjusted if needed. Motion carried.

Employee Benefits

A proposed revision to the Employee Handbook was reviewed. A **MOTION** was made by Waskiewicz, seconded by Dohrwardt, to have the Personnel Committee meet next week to discuss and recommend to the village board at the next meeting. Motion carried.

Land Purchase for Stormwater Detention Pond

Village staff will continue to gather information on the possible purchase of land for a stormwater detention pond.

The meeting adjourned at 9:10 p.m. on a **MOTION** by Palm, seconded by Bertram, and carried.