

SUSSEX COUNTY SOLID WASTE ADVISORY COUNCIL

MINUTES

FEBRUARY 14, 2012

The meeting was opened at 7:30 p.m. by Chairman Landrith. The meeting was held in compliance with the Open Public Meetings Act, N.J.S.A. 10:4-1 of 1975, as amended, and notice has been forwarded to the newspapers and posted on the bulletin board maintained at the Sussex County Administrative Center for public announcement.

ROLL CALL:

MEMBERS PRESENT: James Landrith, Andover Borough, Chairman
Bob Smith, Andover Township
Jason Doyle, Franklin Borough
Allan Esenlohr, Green Township
Christopher Kelly, Hamburg Borough
Robert Schultz , Hardyston Township
Stephanie Pizzulo, Lafayette Township
Ken Jaekel, Town of Newton
Jo-Ann Williamson, Sandyston Township
Eric Powell, Sparta Township
Don Drake, Stanhope Borough
Gerald Giaimis, Vernon Township
John Armeno, At-Large
Eleanor Mensonides, At-Large, Vice Chair
Rich Vohden, Freeholder Liaison

EXCUSED MEMBERS: Dennis Haff, Fredon Township
Howard Baker, Hopatcong Borough
Russell Pagano, Walpack Township

STAFF MEMBERS: Eric Snyder, Planning Director
Neal Leitner, Program Manager
Antoinette Wasiewicz, Recording Secretary
Denise Webb, Health Department
Reenee Casapulla, Recycling Coordinator

ALSO PRESENT: John Drake, Economic Development Partnership
David Mills, Enviro Resources?
Rich Scheller, Enviro Resources Director of Development
Joe Sabatini, Byram Township Manager

MINUTES CORRECTION/APPROVAL:

A motion was made by Eleanor Mensonides to approve the Minutes of October 11, 2011. The motion was seconded by Jason Doyle. All were in favor, with abstentions from Bob Smith, Christopher Kelly, Robert Schultz, Stephanie Pizzulo, Eric Powell and Gerald Giaimis. Motion carried.

CHAIRMAN'S REMARKS:

Chairman Landrith said with the full Agenda this evening, he will skip the Chairman's Remarks.

NEW BUSINESS:

A. PRESENTATION: WASTE IN THE COMMUNITY – THE USE OF MODULAR W2E SYSTEMS FOR POWER GENERATION:

John Drake, Economic Development Partnership introduced David Mills who will give a presentation on W2e Systems.

Mr. Mills said his company, Enviro Resources operates around the world. They operate in the Persian Gulf, Brazil, India and the United Kingdom. They have two specific solutions to waste problems. One is the Waste to Energy, where they use pyrolosis, not to burn but to reduce municipal solid waste as constituent parts and from doing that they can generate electricity. With 20 tons of waste they can generate about a megawatt of power. The second element is the production of a bio-methane, where the methane gas is taken off a landfill and converted to a liquid fuel which can be used and pumped with no loss of power or performance. There are plants in operation in the United Kingdom and Singapore. They also have a plant in the middle of an island in Dubai and they are building them in the Phillipines. He added that this year, during the Olympic Games, the Coca Cola trucks in London will be using the liquid bio-methane.

Mr. Mills said he is not an Engineer but that he helped develop these systems. He comes more from a commercialization and the marketing point of view. They built the first modular system and the first commercially viable one in the world in 2008 and deployed into Dubai where it has been operating about 24/7 ever since. Enviro Resources has a company that has been registered in New Jersey for two or three years.

Mr. Mills said he would provide John Drake with a memory stick which contains two presentations and other documentations one being a fatal flaw analysis which can be used to determine pressure points. He said this is particularly appropriate because

Sussex County is a farming area. The units work extremely well with dairy waste and other agricultural waste.

The presenters had to set up their Power Point Presentation. The Agenda was amended to continue with other business in the interim.

Mr. Mills said pyrolysis has been around for many years. It was used in the 2nd World War by the French to drive their engines. In the last few years technology has allowed the system to be compacted and given us the software to control it accurately. He said his company started working on this in 2004, and in 2007 the unit was commercially viable. The system built in Dubai was designed to take 6-10 tons of waste per day of MSW and from that they generated about 300 kilowatts of power every day. There is also a by-product from this system which is called carbon char. The char can be used in the paint industry, for activated charcoal and it can be used as fertilizer.

Mr. Mills described the workings of the W2e System as shown in the Power Point Presentation. The first part of the chamber removes carbon char. They estimate that for every 10 tons of waste, they get just under one ton of carbon char. The char has a resale value of about \$400-\$500 per ton. Inorganic materials come out completely sterilized. Mr. Mills said the Bristol plant has been operating for 10 years and has never had a breakdown. The system can be monitored online.

In pyrolysis, the waste is taken into the machine. In the first chamber the temperature can vary from 400 degrees centigrade up to 900 degrees centigrade. Software controls the temperature which can vary according to the waste that is going in to make it work most efficiently. In that chamber, it is then broken down to the hydrocarbons, gasses, nitro-carbons and the toxic element. In a naturally recurring cycle the waste moves to the secondary chamber which for two seconds is 1,250 degrees centigrade. This destroys all the dioxins and toxins completely and creates a super heated gas which is taken out of the chamber and passed through either a steam engine or a gas engine to produce steam or power. It takes only one man to operate the plant. Mr. Mills said the system will work with sewage sludge, agricultural waste, municipal solid waste and industrial waste. The system is highly efficient. In the United States, the payback period is about 4.5 to 5 years.

When asked if the system only takes pre-sorted waste, Mr. Mills said it does not. He said the machines are custom built. If they know that they are going to be getting a trash bag of a certain size, they build a hopper to take that trash bag. They don't recycle the waste at the front end. Anything inorganic will come out when the carbon char is removed. It is more efficient to do some pre-sorting. When they design a system, they design a pre-sorting element. The system in Dubai does not have a pre-sorting element. Everything is pushed through the machine. When the char comes out, the then sterilized metal and bottles are taken away.

In his presentation, Mr. Mills showed the systems in Dubai, the United Kingdom and one being used by the U.S. Army in California. The U.S. Army systems were built in

40' shipping containers and were moved around the desert for testing. The systems can be built underground or can be inside buildings.

Mr. Mills was asked what energy source starts and runs the machine. He said hot air is pushed down a tube into the first chamber with a propane or oil burner. When it reaches its operating temperature (in about 30 minutes) it then becomes self sustaining from the waste that is pushed through. He added that the emissions are ten times less than EU regulations allow. They have ten years of records to prove that and the machines can be monitored in real time.

When asked if they have permits in New Jersey, Mr. Mills said they had a lot of interest from America. For the last two years they have been contacted by private companies and they realized there was a business opportunity here. About two years ago, they made a decision to open a plant in New Jersey. They have only American partners in North America. It is a completely separate entity. The plants are designed for up to 1,000 tons per day. They designed a 1,000 tons per day plant for Nevada Light and Power. They also have a contract with MGM to power three hotels in Las Vegas.

Mr. Mills was asked by what percentage would this system reduce the trash flow. He said if you start out with a ton, you get one tenth of a ton as carbon char. There will be no waste left other than inorganic waste. This is over 90% reduction. In Dubai where only organic waste was used, they achieve 96% destruction of that waste. He added that a couple of years ago, Dubai had the world's largest fireworks display. That waste was pushed through their system without having to be transported off the site. They took all the cardboard and unexploded fireworks and pushed it through the machine. The tangible benefit is that, because the units are highly mobile and compact, they can be placed around the community and take select waste. You reduce truck time on the road, resulting in less pollution and less traffic.

When asked specifically what type of waste would this system handle, Mr. Mills said if the unit is in a township, they would require 10 tons of municipal solid waste: the organic waste from households, food waste, and other waste which does not get recycled. The units are very efficient with plastic bottles and tires. In Sussex County, the unit would be built for a small amount of agricultural waste, some industrial waste and a large amount of municipal solid waste.

When asked what types of waste would be excluded, Mr. Mills said they cannot take nuclear waste but that they can take toxic waste if it is handled correctly. Medical waste, paints and other industrial projects can be used. Plastics and Styrofoam would all go through the machine. Paper will also go through the machine but does not give a very good return.

Mr. Mills said they are just starting to work with DEP. They registered in Kearny, NJ two years ago but they were not active here. They are active in Massachusetts, Nevada and on the west coast. He said New Jersey appealed to them because of the large amount of waste dumps. Landfills can be cleaned up with this machinery. Soil

can be put through and it will take the toxins out of the soil. He added that in the Meadowlands they are trucking off their waste to Virginia at \$250 per ton.

Carbon char has to be tested. If it is from plastics and other waste, it does not have the value for activated charcoal. If it is not very high value, it will yield about \$350 per ton. That, goes to the paint industry. If it is high value, it can be sent to the medical industry for activated charcoal or it can be put into a field as a fertilizer. Mr. Mills said there is a carbon char initiative in Europe where they are investigating the production of carbon char on a large scale.

Mr. Mills said the units can be bought outright or they can boot operate them: they are built, operated and then transferred after a number of years. They found in Europe that insurance companies and pension funds are very interested in investing in these projects because it gives quite a good return on their money, 9-10% per year. The benefits for the community are less pollution, landfills disappear and cheaper power.

A member asked what an outright purchase of a 100 ton unit would cost. Mr. Mills said it depends on many factors. He would estimate about \$15 - \$20 million. They do have the figures and operating expenses as well as the income streams and he can provide those figures. He explained how they operate. On the first meeting, they explain the system, the next phase is to get answers to their questions, how much waste do you have, what you plan to do with the output, how much are the tipping fees, are there any sources of revenue, are their hospitals around, medical facilities. Those questions allow them to work out what is needed, then they can make a sensible offer.

The machine is based on 40' shipping containers. For 300 tons a day, the machinery itself only needs about 300' x 300'. The problems come in receiving the waste. Is it on an existing landfill? If it is, it is fairly easy. If it is on a new site, they need to allocate space for the trucks to come in, turn around, where is the waste going to be held as it goes through, how do we need to hold that waste, will there be different streams of waste? If the trucks come in with MSW, they go here, agricultural go there, industrial waste trucks will go to a different point and then come in to the front of a facility where they take the waste and blend it into the streams. That situation is dependent on the size of the unit, what you will do with it and what kind of waste is coming in.

A member said Mr. Mills mentioned that the emissions were 10% less than regulations. He asked if that was British regulations or New Jersey regulations. Mr. Mills said they were British and European regulations. He believed that they were equally if not more stringent than New Jersey. When asked if he had a list of the exact emissions, Mr. Mills said he did. He added that it was very important to know that this is not an incinerator. The unit built in Dubai is next to multi-million dollar homes. There is no danger of explosion with this because there is no oxygen inside.

Mr. Mills was asked about the return on investment again. He said the return investment is five years, depending on how it is structured. You start to see the profit and they converge quite rapidly. It depends on the tipping fees and how much you

can sell the power for. They have an average cost and they work that out against the cost of power from the grid, the cost of diesel generation and they put their unit and say how fast if you're using these two compared to theirs. Adjusted for inflation, it is about 4.5-5 years in North America. States differ. In Nevada, it was four years. They know that from a study that was done.

When asked what materials cannot be put into the unit, Mr. Mills said they cannot put concrete, steel, glass, anything which is inorganic. Hazardous materials such as asbestos and other materials can go through the machine. The second machine takes the landfill gas and it is compressed to 600 tons of volume, liquefies it and uses it as a regular fuel. The fuel can be used to operate trucks and vehicles or it can be used to generate power as well.

REPORTS:

A. SCMUA UPDATE:

Renee Casapulla said Tom Varro who could not be present this evening so she will give his report on the Solid Waste tonnages. From December 1 to February 4 of Fiscal Year 2011, compared to Fiscal Year 2012, the solid waste tons were 14,338 tons in 2011 and 15,674 tons in 2012. This is an increase of 9.3%. For the same time period, the average tip fee was \$99.78. This is a blended rate of all waste types material.

B. RECYCLING COORDINATOR:

Renee Casapulla said at this time of year, the Municipal Recycling Coordinators focus on preparing recycling tonnage reports for the previous calendar year. For 2012, the State has required that the 2011 tonnage report would need to be signed by a certified recycling professional. There are seven active, certified recycling professionals in Sussex County, including herself. As a result, there are about 11 municipalities that have reached out to the MUA for shared services. They have drafted a package for a shared services agreement with the municipalities so that these recycling tonnage reports can be prepared and certified and submitted to DEP on a timely basis. Those towns who are certified typically are working with other municipalities also.

There are some workshops being held to help with preparing the reports. The State Association of New Jersey Recyclers is having two countywide workshops. The northern section workshop is being held in Somerset on Wednesday, February 22. Ms. Casapulla said she will go with a group of municipal coordinators to see what they can learn from others who do the same type of reports. The MUA also hosts an annual workshop which is scheduled for March 6, 10:00 a.m. at the MUA. This workshop is typically for Sussex County Municipal Recycling Coordinators.

C. STATE LIAISON:

The State Liaison did not attend this evening's meeting, nor did he provide a report.

D. SWAGER Report:

Eleanor Mensonides said she did not have anything to report. She said at the last meeting there was discussion about sending a letter to the Freeholders recommending the transfer station. She asked if that was sent.

DIRECTOR'S REPORTS:

A. ERIC SNYDER:

B. HEALTH DEPARTMENT:

Denise Webb reported that in January 2012 the Health Department inspected 24 containers. From these inspections four Notices of Violations were generated. There was one NJDEP Solid Waste referral and 13 Waste Flow investigations.

CORRESPONDENCE:

A. SWAC ATTENDANCE STATISTICS 2011:

Neal said he handed out the SCMUA Revenue Report and the SWAC Attendance Statistics for 2011.

OLD BUSINESS:

None

The Public Comment session that follows was held with the hand held microphone at the dais end of the room while the discussion was held at the opposite end of the room. During this discussion, the presenters were dismantling their equipment and were working and speaking directly over the hand held microphone and the microphones which are installed on the dais. Until the presenters were finished packing up, the noise and talking in the vicinity of the microphones made much of what was being discussed inaudible. Therefore, in the first part of the Public Comment, not everything was captured.

PUBLIC COMMENT:

Joe Sabatini, Byram Township Manager, wanted a clarification of what went to the Freeholders regarding the post-closure recommendation. Chairman Landrith said there have been no formal recommendations so far. Mr. Sabatini asked what is going to be the action plan of this Committee over the next "X" number of meetings. Eric Snyder said they've been asked by the Freeholder Director to come up with a recommendation soon. A number of alternatives have been looked at, but so far no one has anything viable to offer. Right now the best answer is to have the transfer station renovated. In the meantime, SWAC will continue to look at other alternatives. He said what was heard here tonight is encouraging, interesting and certainly well worth following up.

Mr. Sabatini said the Mayors received a letter from the County Administrator saying that SWAC is responsible for the post closure plan decision. The Byram SWAC representative is not present this evening, so he is covering for him. He said he is not seeing information come out of the SWAGER Committee being fed back to the municipal officials so that they can understand the solutions that are being considered. If they are challenged to attend these meetings, then the information needs to be forthcoming and understood. Eleanor Mensonides said that is their representative's responsibility. Mr. Sabatini said he wanted to see the December Minutes but they have not been distributed yet. He said he knows this topic was discussed at the December meeting. He said he had a conversation with his SWAC representative and was told that this decision was already decided without much discussion. Ms. Mensonides said Freeholder Vohden and Freeholder Crabb were at the meeting. She said there is a time constraint. We need the transfer station but the County also has to go through the permit process with DEP. Mr. Sabatini said he is aware of that but asks this Committee to be more forthcoming with information. He asked for a draft of the December meeting Minutes so he can get a perspective of what was discussed at the last meeting. At the same time he received a letter asking for SWAC representatives in attendance to be part of this process. He said the problem is that most of the SWAC representatives probably don't have the knowledge base to understand the impact of their decisions on the municipalities. He feels the municipal officials need to understand the post closure decision, which is not a function of this committee, what's going to happen between now and 2018 because there is an \$18 million deficit with funding for the post closure plan. Eric Snyder said the Post Closure Report was prepared by the MUA. Mr. Sabatini said he has a copy and that he read it. He said he is trying to understand what the towns are being asked to do from a municipal perspective with regards to the recommendation of post closure. When the SWAC representative received the Agenda, he sent it to him. Mr. Sabatini said it is very lacking in information. He said he picked up on a comment here earlier in the meeting that something was supposed to have been taken back to the Freeholders. He said that is not what he heard and he is not quite sure what he heard.

Eric Snyder said the discussion at the last meeting was it appeared that the option that SWAC can recommend to the Freeholders is the Transfer Station but that SWAC would look at other options to handle a portion or all of the waste flow and it will continue to do so. That's what happened at the meeting.

Jo-Ann Williamson asked SWAGER to give a report that lists every option that they've considered, the pros and cons and estimated cost. Eleanor Mensonides said a lot of the information they've requested has not been received. Ms. Williamson said she could understand that one of the presentations was not a viable option. Tonight's presentation sounds more interesting and seemed to be capable of handling more of the County's waste. She said she's sat here and is not sure she knows all of the things that SWAGER has considered. She said she has not heard any numbers about what it would cost to go into a deal with Warren County. Eric Snyder said there were issues with regard to the residual that hadn't been fully explored during the presentation and that the discussion fell apart. Ms. Williamson said for all municipalities that if there is some directive that the representatives can then forward

on, it would be in their best interest. Mr. Snyder said he agreed. He said he was disappointed in two of the three presentations that SWAC has been involved with. Ms. Williamson asked if it was unrealistic to assume that W2e will need five years to get DEP approval. Eric Snyder said it could easily take two years minimum to get through the regulatory morass in Trenton and that's why with the best of intentions, we need to proceed along this course.

Mr. Mills said based on an American quotation they did, 30,000 tons of mixed waste on a 20 year lifecycle would provide five megawatts of power. The footprint for the handling element was 25 meters by 15 meters. The capital cost was \$16.8 million, the I.R.R. was in excess of 35% and the R.O.I. in excess of 30%. The payback period was three years; initial savings was \$6 million per year. Chairman Landrith asked if that included the revenue from selling the gas, Mr. Mills responded, "Yes."

Mr. Mills talked about the details of the MGM project but it was inaudible. He said if anyone has access to the BBC, they have a show called "Horizons." On Friday, they will have a whole segment on W2e. He also talked about newspaper articles that were published. Eleanor Mensonides asked if he could send copies to Neal.

The topic of permits came up again. Mr. Mills said he already started reaching out to various government officials in New Jersey to discuss the W2e system; however he does believe it will be a lengthy process, not just a few months. Mr. Snyder said from what they've heard and what they know now, it makes sense to begin the process to build the transfer station. The County can't depend on somebody else getting through the DEP process in time to design, site, finance and build a facility before the landfill must close. SWAC needs to recommend to the Freeholders that they initiate the process with which it is most comfortable.

There was some discussion on the Post Closure Report. Renee Casapulla said the report was prepared by Engineers, not the MUA, with input by MUA staff. Eric Snyder offered Mr. Mills SWAC's cooperation with anything they can do to advance the process with DEP. When asked about the financial analysis for either the transfer station or future potential companies, Mr. Snyder said SWAC will ask the MUA to speak to their consultants to come up with additional information so it can make an informed decision.

John Armeno said the municipalities have a 2% cap and they need to look at their budgets five years down the road. Eleanor Mensonides agreed but added that the towns need to send representatives because SWAC needs their input too. Mr. Sabatini asked who can attend the SWAGER meetings. Ms. Mensonides said any SWAC member can attend. He asked if there were separate Agendas or Minutes for SWAGER. Ms. Mensonides said no, it is an informal discussion and a report is given later that evening at the SWAC meeting. SWAGER meets at 6:30 p.m., before the regular meeting.

ADJOURNMENT:

All business having been completed, a motion to adjourn the meeting was made by John Armeno. The motion was seconded by Jason Doyle and carried unanimously. The meeting adjourned at 8:50 p.m.