EDENTON-CHOWAN
INSPECTIONS AND PLANNING DEPARTMENT
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Chowan County Planning Board
July 26, 2016
Chowan County Public Safety Center
305 West Freemason Street
7:00 pm

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Chairman Marvin Hare called the meeting to order. He asked Planner Elizabeth Bryant to call the roll. Jim Leggett, Marvin Hare, Jim Robison, Linda Peterson, and Bobby Winborne were present. William Monds and Wayne Parrish were absent. County Attorney Lauren Arizaga-Womble and Administrative Assistant Karen Castelloe were present.

Mr. Leggett opened the meeting with a prayer.

Mr. Hare asked for any changes or additions to the agenda. There being none, the agenda was approved as submitted.

Mr. Hare asked for any changes or additions to the minutes of the June 21, 2016 meeting. There being none, the minutes were approved as submitted.

Mr. Hare noted the application on the agenda, **CC-CUP 16-02; Timbermill Wind Project; A Conditional Use Permit Application from Apex Clean Energy, Inc. for a Large (Utility Scale) Wind Energy Facility in the Bear Swamp and Center Hill areas of Chowan County.**

Ms. Bryant read the staff report into the record. (attached)

Don Giecek with Apex Clean Energy spoke on behalf of the application. (presentation attached)

Mr. Giecek noted that the 8,000 acres to be used in the project that were located in Chowan County had been leased. He noted that any improvements that would need to be made or any new roads that would need to be constructed would be paid for by Apex. He stated that the two permanent meteorological (MET) towers would be approximately 384 feet tall and would not exceed the hub height of the turbines. He stated that the 10 personnel used in the operations and maintenance of the project would be full-time positions with benefits. He stated that the remote operations team would possibly be located in Charlottesville, VA. He stated that the wind turbines begin producing energy at around 10mph and that at around 55mph the turbines would cease producing energy when they cut off for safety reasons. He stated that all substations would be located in Perquimans County.

Mr. Giecek noted that the wind turbine to be used in the Timbermill project had not yet been selected. He stated that they had used the wind turbine with the highest tip when calculating the setbacks submitted in the application. He stated that they had added an extra 48 feet onto the setbacks required in the Zoning Ordinance from all occupied buildings. He stated that the site plan that was submitted with the application exceeds the Chowan County Zoning Ordinance requirements. He stated that when decommissioning the project all the debris will be removed and disposed of and the site will be regraded to preconstruction conditions and natural drainage patterns. He stated that Apex was required to submit a cash bond in the amount of $6.1-$9.1 million dollars to the County to ensure the project was decommissioned properly. He stated that the Apex engineers had designed the Timbermill project to be safe and efficient and to protect the health and welfare of the community. He asked the Board to consider recommending approval of the Timbermill application.

Mr. Hare opened the floor to public comment.

Ms. Bryant stated that there were also index cards and pens available if anyone wished to submit a written statement or question rather than speak.

Francis Inglis, 101 East Water Street, spoke in favor of the application. She stated that, if approved, the windfarm would be the biggest taxpayer in Chowan County. She stated that the increased tax revenue could go to help improve the school system, safety programs, etc. She stated that she felt that taxes may go up if the project is not approved. She stated that Apex had an ornithologist come and study the birds in the area of the project for two years and that Apex has taken precautions regarding that. She stated that there were many superb studies done in regard to sound and flicker including one that has been published by the Massachusetts Institute of Technology (MIT). She stated that the project was important to reduce our dependence on foreign oil.

Win Dale, 102 Emperor Landing Road, Executive Director of the Edenton-Chowan Chamber of Commerce, read a resolution passed by the Chamber of Commerce in support of the wind project into the record. (attached) He stated that after comparing the application submitted by Apex to the Chowan County Ordinance it appeared that the application meets or exceeds all the requirements of the Chowan County Wind Ordinance. He stated that he would like to respectfully request that the Board recommend approval of the application.

Glorious Elliott, 342 Sandy Ridge Road, member of Edenton-Chowan Board of Education, read a resolution passed by the Board of Education in support of the wind project into the record. (attached)

Paul Waff, 401 Court Street, President of Waff Contracting, spoke in support of the application. He stated that his company was currently storing as well as loading and unloading the wind towers that were being constructed in Pasquotank County. He stated that the Timbermill project would increase the tax base in Chowan County tremendously. He stated that his business was one of the biggest taxpayers in Chowan County and that approval of the Timbermill project would help his business as well as other businesses reduce their tax bills or keep them from increasing. He compared wind energy to Henry Ford with the automobile and the Wright brothers with the airplane in that people doubted that it was efficient or that it was possible. He stated that wind energy was in its beginning stages and that it was becoming more and more efficient over time. He stated that it was important to reduce our carbon footprint and dependence on foreign oil. He asked that the Board recommend approval of the application.

Alissa Cale, 537 Summerby Road (Roper, NC), employee of Weyerhauser, spoke in support of the application. She stated that she owned land in Chowan County. She stated that as a business they had to look for ways to be more competitive. She stated that wind production and timber production were fully compatible. She stated that the revenue generated from the wind project would not only help Weyerhauser but also the County. She stated that she had spoken to a campground owner in Perquimans County who stated that he has a waiting list of more than twenty people as a result of the Amazon wind project. She stated that the Timbermill project will create jobs and bring revenue to hotels, restaurants, grocery stores, supply stores, convenience stores, campgrounds, and gas stations. She stated that the Timbermill application meets or exceeds the Chowan County Zoning Ordinance and asked that the Board recommend approval of the application.

Larry Lombardi, 204 West Queen Street, Executive Director of the Edenton-Chowan Partnership, spoke in support of the application. He noted the economic benefits that the project would bring to the County stating that it would keep taxes down. He asked the Board to recommend approval of the application.

Gene Jordan, 414 Sign Pine Road, spoke in support of the application. He stated that he was a landowner involved in the project. He stated that the project would help him diversify his income in what is a very uncertain business (farming). He stated that the project was an opportunity for Chowan County to grow its tax base and keep taxes down. He asked the Board to recommend approval of the application.

Bill Elliott, 1625 Rocky Hock Road, retired employee of Weyerhauser, spoke in support of the application. He stated that the landowners involved in the wind project had done their homework and investigated any concerns that had been brought up. He stated that the project was money in the bank for Chowan County. He asked that the Board recommend approval of the application.

Carroll Perry, 309 Cannons Ferry Road, spoke in support of the application. He stated that he had no land connected to the project. He stated that the project will be a benefit to the County's bottom line and way of life with very little drawback. He asked the Board to recommend approval of the application.

Kristy LaLonde, 330 Sandy Ridge Road, urged the Board to err on the side of caution in consideration of the application. She cited property value concerns stating that the turbines will negatively affect property values for properties located near the project. She stated that she would not have purchased her property if she had known that a wind farm could be located near her. She expressed concerns that the efforts to strengthen the County Wind Ordinance had failed. She stated that there were conflicts of interest involved in voting on the strengthening of the ordinance. She asked how the application could even be considered if there were conflicts of interests involved in the beginning of the process. She asked if the project should have to start all over. She stated that approval of the application would diminish public opinion of the review process.

Michelle Kirby, 236 White's Landing Road, spoke in opposition of the project. She stated that she and her husband owned 18 acres and a log cabin on the Chowan River. She expressed concern that the tranquil, peaceful way of life that they have known will be disturbed by the proposed Timbermill project. She stated that the project was in opposition to what they envision for the future in Chowan County. She stated that the turbines were disproportionate and ugly. She stated that the turbines would be taller than the Washington monument and would not fit in in Chowan County. She stated that the turbines had been documented to kill birds and bats as well as eagles. She expressed concerns over decreasing property values.

David Bunch, 235 County Line Road, employee of the Department of Defense, spoke in support of the project. He stated that he had traveled around the world and seen several wind farms. He stated that he's seen cows grazing under turbines and farmers farming around the turbines. He stated that he's seen turbines in Hawaii and that the property value in Hawaii has not been harmed by the wind turbines. He stated that he has never seen a blade turn fast enough on a wind turbine to harm anything.

Gil Burroughs, 503 Queen Anne Drive, stated that he had noticed that most of the opposition to the project was located in the south end of the county where they would never be affected by flicker or noise from the turbines. He noted that the legislature had let the tax credits for renewable energy expire. He also noted that the legislature had tried to decrease the amount of renewable energy that the power companies had to utilize in their power generation. He stated that a group in the legislature wanted to put a flight plan in effect that was grossly in excess of what the defense department proposed themselves. He stated that it seemed to him that there was an underlying reason for objecting to things like the wind farms or solar farms that has nothing to do with health, safety, or welfare of the community. He stated that attempts were made to make the project unprofitable such as one mile setbacks and 35dba sound levels (which are comparable to rustling leaves in a forest). He stated that normal conversation levels are about 60 dba. He stated that the Board could either go down the route of fossil based power sources and backwards looking ideology or they could support a forward looking vision for clean, renewable energy. He asked the Board to recommend approval of the application.

Joe Sliva, 412 East Queen Street, spoke in support of the application. He stated that the project would bring in much needed tax dollars and contribute to moving the country to a renewable energy economy. He urged the Board to recommend approval of the application.

Frank Sellers, 119 Bella Vista Drive, stated that he was an engineer and that he would like to say that Apex had done a great job of showing that the project can be done and done safely and that they have more than exceeded the requirements of the Zoning Ordinance. He encouraged the Board to recommend approval of the application.

Lueta Sellers, 119 Bella Vista Drive, spoke in support of the application. She stated that it appears to her that Timbermill has bent over backwards to satisfy those people that have concerns about the project. She urged the Board to recommend approval pointing out that the project will support the farmers and provide security for their future.

Ricky Jones, 405 Parker Road (New Bern, NC), spoke in support of the application. He stated that he was a planning forester for Weyerhauser and part of his job was to bring different businesses to their land base other than just growing trees. He stated that he looked forward to the day that the project was operational and urged the Board to recommend approval of the application.

Patrick Flynn, 1924 Paradise Road, stated that the inaudible noise produced by the turbines should be considered. He stated that there were many health issues that have been identified in different studies. He submitted a handout addressing the health effects of large wind turbines and a handout with a list of questions he would like the Board to consider. (both handouts are attached)

Belinda Flynn, 1924 Paradise Road, expressed concerns about possible negative health effects from the turbines. She stated that their house was located within 3500 feet of four of the proposed wind turbines. She expressed concerns about the infrasound produced by the turbines. She stated that you could feel the sound but not hear it (like a vibration). She stated that people that get vertigo or motion sickness are most affected. She stated that older people and children are most affected. She stated that she got vertigo and motion sickness and that she had no doubt that it would negatively affect her. She stated that the complaints are headache, dizziness, feeling of pressure, stress, depression, people experiencing relief when leaving the area and the desperation to move away. She stated that in Ontario, Canada a wind energy company bought several homes from families experiencing negative health effects. She stated that she and her husband had bought a historic home and were now restoring it. She stated that she did not want to be pushed away from her own land. She asked the Board to consider the citizens of the community and not just the money.

Daniel Smith, 100 Meadowlark Drive, asked the Board to recommend approval of the application and noted that the project will bring tax revenue to Chowan County. He suggested that the wind turbines would bring people to the County just to see the turbines and that while they are here they will spend money going out to eat, shopping, etc. He stated that it would bring in money to the County that would not normally be spent here.

Dave Merchant, 106 Sandy Ridge Road, expressed concerns about the negative effects of the wind turbines. He stated that he was concerned that the wind turbines would negatively affect his property value. He stated that Apex had used property values from properties as far as 10 miles away in the assessment and that the study was not done by licensed real estate appraisers that evaluate properties on a daily basis. He stated that he would not have bought his home if had known a project like this one was planned. He stated that the project would not be in harmony with the surrounding area and would essentially be like putting a 600 foot skyscraper in his backyard. He expressed concerns about the proximity of the elementary school to the proposed wind turbines. He stated that the Board had a difficult decision and that it could have negative effect on the community for many years to come if the project was approved.

Kim Richardson, 108 Sandy Ridge Road, expressed concerns about the closeness of the schools to the wind turbines. He stated that the federal government mandates that the turbines need to be at least five miles from the schools. He asked the Board to consider the straight line distance in regard to the location of the turbines from the schools. He stated that he was not opposed to green energy but asked the Board to consider the fact that there are children attending the nearby schools and to make sure that the children are safe at all times.

Jack Gibson, 224 Mulberry Hill Lane, stated that he had worked for 40 years in the insurance industry and that he felt qualified to speak on the subject of decommissioning. He stated that state auditors will be reviewing the Apex application and verifying the bond amount. He stated that Apex had agreed to work with Chowan County to satisfy the bonding issues. He stated that a major bonding company who has written many decommissioning bonds is located in Raleigh. He stated that they write gas, oil, wind & solar bonds. He stated that the County as well as Apex should discuss with them and seek a bid based on their specifications. He stated that the principal of the firm was Constantine Poindexter and his number was 1-800-373-2804. He stated that Mr. Poindexter was familiar with the Pasquotank County project and was available to answer any questions from the Planning Board, Apex, or the Commissioners. He stated that Mr. Poindexter stated that as a matter of underwriting that he would check the solvency of the bond each year to make sure that the bond is up to date every year. He stated that if Apex were to sell the project then there needed to be a condition that the purchaser must be written into the bond and agree to the yearly review. He stated that way the people of the County would be protected for the life of the project.

Flint Harding, 407 Court Street, spoke in support of the application. He stated that he believed it would bring more jobs to the community as well as increase the tax base. He stated that the country would benefit from the energy from projects like this as it helps to offset the purchase of foreign oil. He stated that in regard to the noise, a library is 44dba and an air conditioning unit at 100 feet away was 60dba. He stated that in terms of audible noise there would not be any loud noises.

Ollie Inglis, Darby Creek Lane, spoke in support of the application. She stated that it was exciting that Chowan County had the opportunity to do something sustainable and to lower the impact on the environment. She stated that we needed to be looking forward to sustainable solutions to our country's energy problems.

Richard Elliott, 404 South Granville Street, expressed concerns about turbines being located near his property. He stated that farming keeps the county alive and that it has been the pulse of the community for the last 200 years. He stated that he hopes that the turbines don't interfere with farming. He asked the Board to think about the application very carefully.

Alan Lennon, resident of Perquimans County, spoke in opposition to the application. He stated that in his review of the Apex application he had found several holes and that several of the documents had not been done by the proper authorities. He stated that the home property value documents were not done by appraisers but were done by statisticians. He stated that Apex has applied for wind turbine sightings through the FAA. He stated that without this authorization they cannot have this project. He asked why Apex was trying to get a Conditional Use Permit from the County before they have the permit from the government national authority on federal aviation. He stated that Apex had submitted their application to the FAA two years ago and he asked why it was taking so long. He stated that the sites that Apex applied for to the FAA do not match the sites that are in their conditional use permit application. He stated that there was verbiage in the application that says that the turbines will be moved. He asked how the Board could make a valid decision that the project will not harm the people surrounding it when the turbines will be moved. He stated that his concern was the health, safety, and welfare of the people who would be living near the turbines. He stated that he lived in Perquimans but that he could see Chowan County from his house. He stated that there was a turbine sited a little over a half-mile from his home. He stated that when the turbines have the flashing red lights installed on them the skyline would no longer be seen. He stated that was one of his family's favorite things to do; to look out and see the stars. He stated that Apex is a subshell company of two different businesses. He stated that Apex is owned by British Petroleum (BP). He stated that if BP, an oil company, is interested in wind energy you should wonder why. He stated that it is all about money. He stated that he feared that Perquimans and Chowan County was being "played the fool" with incomplete applications.

There being no further public comment, the floor was closed.

Mr. Hare thanked the speakers for their comments.

(10 minute recess)

Mr. Hare called the meeting back to order.

Mr. Hare noted that three written questions and two written comments had been submitted from the public. (attached)

Mr. Hare stated that some Board members had indicated to him during the 10 minute recess that they would like some time to process the information that had been presented so far and to come back the next night and continue the discussion.

Mr. Robison moved that the meeting be recessed and reconvene on July 27, 2016 at 7pm at the same location.

Ms. Peterson seconded the motion. The motion carried unanimously. (5-0)

(meeting recessed)

Mr. Hare called the meeting back to order on July 27, 2016 at 7pm. He stated that the next item of business would be questions from the Board.

Mr. Hare asked if there were any questions from the Board in regard to the Staff Report.

Mr. Robison asked for confirmation that the planning board meeting was not quasi-judicial.

Ms. Womble stated that was correct.

Mr. Robison asked for confirmation that the planning board meeting was administrative where a board member may hold a firm opinion based on their own observations and studies.

Ms. Womble stated that the planning board was an advisory board to the board of commissioners. She stated that the planning board meeting was a time to ask questions of the applicant and staff. She stated that if a member had concerns that they could voice their concerns at this time.

Mr. Robison stated that he had no financial interest in the Timbermill project. He stated that he is opposed to industrial scale wind energy facilities in Chowan County based on his own studies and observations. He stated that specifically he was opposed to renewable energy programs in general. He stated that he would like to note that he was a principal in a North Carolina corporation, Renewable Energy Reform, Inc., that has the purpose of educating the public about renewable energy and North Carolina laws regulating renewable energy. He stated that his questions to Apex representatives will address provisions of the applications. He stated that he also had some questions regarding the Staff Report.

Mr. Robison read his questions and comments into the record. (attached)

Ms. Bryant answered in regard to Mr. Robison's question concerning what adjacent property owners were notified about the application.

Ms. Bryant stated that any property owners within 100 feet or directly adjacent to the property involved in the wind farm project had been notified of the application.

Mr. Robison stated that people would be affected far more than 100 feet.

Ms. Womble stated that adjacent was defined in the Chowan County Zoning Ordinance.

Mr. Robison stated that adjacent does not cover this particular situation.

Ms. Womble stated that the County's duty under the Ordinance was to send notice pursuant to the Ordinance not above and beyond that. She stated that the application has been posted on the website, the meetings are advertised on the website as well as published in the newspaper. She stated that offered ample opportunity to others that may be affected to have notice about the application. She stated that the County has complied with all notice requirements under the Ordinance and required by law.

Mr. Robison stated that was not sufficient.

Mr. Hare suggested that if the notice required in the Ordinance was not sufficient would it not have been more stringent when it was written.

Mr. Robison pointed out that the suggested revisions to the Wind Ordinance had been rejected. He stated that the suggested revisions included a setback of one mile.

Mr. Robison pointed out that Apex had not applied for any permits from the Department of Environmental Quality. He asked why Chowan County was even considering the application from Apex when they had not acquired all the other permits that they would need to complete the project. He pointed out that the application Apex had submitted to the FAA had been held up for two years and that the County did not even know where the turbines would be located.

Mr. Hare asked if there were any more questions from the Board regarding the Staff Report.

Ms. Bryant responded to Mr. Robison's comments in regard to her interpretation and review of the application in relation to the Land Use Plan.

Ms. Bryant responded to Mr. Robison's reference to policy B-10 which addresses Land Use Compatibility and in particular the impact of the proposed use. She stated that the reason that she had left that out of her

inclusion of major goals and objectives pertinent to the Apex application was that the proposed use is allowed by the Chowan County Zoning Ordinance through a Conditional Use Permit in all areas zoned A-1 in Chowan County. She stated that there was a base determination that the use in general is one that would be permissible through that process. She stated that it was her thought that the process and review both by Staff and then the Planning Board and ultimately the Board of Commissioners would flesh out any concern with regard to the specific nature of the application and those particular concerns. She then addressed Mr. Robison's concern regarding policy B-11 particularly the mitigation of impacts stating that the purpose of a Conditional Use Permit process and quasi-judicial hearing was that during that review conditions can be brought forth and attached to the application which potentially can serve to mitigate any areas of concern. In reference to Mr. Robison's assertion that wind farms were not farms and were not in harmony with the A-1 district she stated that it was her interpretation that a wind energy facility was not an urban use. She stated that you would not see a wind farm of this nature in an urban area. She stated that it was not her opinion that allowing the wind farm would be converting an agricultural area to an urban area. She stated that in regard to Mr. Robison's water quality concerns, it was not her interpretation that the application would pose a threat to the water quality in the Bear Swamp area. She stated that the County was dependent on state and federal agencies to do the technical review through their permitting processes to ensure that water quality would not be affected and that was a condition of the permit. She stated that in regard to Mr. Robison's references to items 5-7 of Staff Findings, those permits (NCDOT, Army Corp of Engineers, all other state and federal permits) are required before building and zoning permits are issued. She stated that the County did not require that those permits be in hand prior to the issuance of a Conditional Use Permit.

Mr. Robison asked why Apex was coming to the County before they obtain all their other permits. He stated that Chowan County has no expertise in any of the areas of the application. He asked how the County can review and make recommendation on an application when the County does not have the expertise. He stated that the County has not done its due diligence and has been overwhelmed with promises from Apex. He stated that if Perquimans did not approve the Timbermill application then the project will probably die.

Mr. Leggett stated that Mr. Robison had a relevant question asked if the County was putting the cart before the horse in considering the application before all permits were in hand.

Mr. Hare asked for clarification on the role of the Planning Board at this time.

Ms. Bryant stated that the Planning Board serves in an advisory capacity to the Board of Commissioners. She stated that they were to review the application, the Staff Report, listen to public comment, discuss, ask questions of the applicant and then make a recommendation to the Board of Commissioners. She stated that the Planning Board could recommend approval, recommend approval with conditions, amend and add/change/delete conditions or recommend denial. She stated that the Planning Board recommendation was one piece of the packet of information that the Board of Commissioners will receive and consider as part of the evidentiary hearing coming before them later in August.

Ms. Womble stated that the question of whether wind energy facilities should be allowed or not has already been answered by the Board of Commissioners because it is a permissible use through the conditional use permit process. She stated that the Planning Board's role is to be advisory to the Board of Commissioners. She stated that the Planning Board's review should be focused on the content of the application and any questions related to that.

Mr. Hare asked for any questions for the applicant.

Mr. Hare asked for Apex's response to Mr. Robison's question of why Apex was applying to Chowan County for a Conditional Use Permit before they have obtained their other necessary permits.

Mr. Giecek stated that the Chowan County Zoning Ordinance does not require them to have the permits Mr. Robison referenced before applying for a Conditional Use Permit. He stated that he felt that the County was the most qualified and the most interested in determining whether or not Apex has met the conditions of the County Ordinance. He stated that the County provided an ordinance and made it public. He stated that they (Apex) had put an application together as required in the Chowan County Ordinance. He stated that Apex is also applying at the same time to Perquimans County.

Mr. Robison stated that both counties have very weak ordinances. He stated that the County Commissioners and Planning Boards ignored more strict requirements that were recommended. He pointed out that, in the application, Apex had stated that were not required to have an environmental study done. He stated that they did have to have an environmental study.

Ms. Peterson stated that she had several questions for the applicant. She asked if the surfaces above the trenches where the electric lines would be buried would be able to be farmed.

Mr. Giecek stated that once the collection line is buried the surface area will be able to be farmed. He stated that in one season of growing a crop you would not be able to tell that there is a collection line buried there.

Ms. Peterson asked if Apex had an estimate of how many of the turbines would be lit with the red, flashing lights that were mentioned earlier.

Mr. Giecek stated that they did not have an approved lighting plan from the FAA.

Ms. Peterson asked if the number of lit turbines was determined by the FAA because of flight paths.

Mr. Giecek stated that the FAA regulates both commercial and military flight paths in order to determine what the lighting plan will be.

Ms. Peterson asked how any damage to roadways would be handled.

Mr. Giecek stated that it was his understanding that amongst the approvals that they would need to obtain from the Department of Transportation that they would also be required to submit a transportation plan in which they would be expected to bond certain roads.

Ms. Peterson asked the distance of the closest turbine to the elementary schools.

Mr. Giecek stated that to one of the schools the distance was 1.9 miles and to the other school it was over 2 miles to the closest turbine.

Ms. Peterson asked, if the intervention was needed to shut down a turbine, if the intervention was manual or automatic.

Mr. Giecek stated that there were some automatic processes in place but that on top of that there were manual abilities to shut down a turbine.

Ms. Peterson asked if the estimate of decommissioning included in the application included the salvage value.

Mr. Giecek stated that the estimate did not include salvage value.

Ms. Peterson stated that the application had mentioned 15-18 years as an appropriate time to reevaluate the value of the cash bond to see if the economy or market had changed in any way. She asked Mr. Giecek to describe how that process is handled. She asked if there was a formal process in place.

Mr. Giecek stated that the process can be handled administratively with the County to reassess the decommissioning cost. He stated that it can also be a condition that is placed upon the application to reevaluate the cost of decommissioning.

Ms. Peterson asked Mr. Giecek if he had any experience with an annual audit process that would reevaluate the value of the cash bond.

Mr. Giecek stated that he did have some experience with that. He noted that an annual audit would seem to be more than what is necessary. He suggested longer intervals between audits depending on what the County was looking to obtain from the audits.

Ms. Peterson noted that in the application it was stated that roads that had been built on landowner land would be left in place unless the landowner specified that they wanted the roads removed. She asked who would cover the cost if the landowner wanted the road removed.

Mr. Giecek stated that the cost was built into the estimate that was given by the expert. He stated that the estimate allowed for a variety of situations to be covered.

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Ms. Peterson noted that in the application Apex states that the incidence of flicker fell well below the Ordinance standard but that if mitigation was required that awnings, window coverings, or landscaping could be considered if that was necessary in the future. She asked Mr. Giecek if they had ever had to resort to those types of actions.

Mr. Giecek stated that there has been tree plantings and awnings in other projects. He stated that the estimates that they had obtained from their experts indicate that they are well below the threshold of the County Ordinance.

Ms. Peterson asked if a homeowner complained of shadow flicker, even though it may be at or below the threshold required in the Ordinance, if it would be addressed.

Mr. Giecek stated that they would listen to the complaint and respond to it and attempt to understand if it is exceedingly bothersome to the resident or exceeds the threshold of the County Ordinance. He stated that it was difficult to pinpoint at what exact number of hours that they would provide mitigation to a citizen.

Ms. Peterson asked for clarification that the results of the sound study were recorded from a computer model and not from actual sound measurements.

Mr. Giecek stated that was correct.

Ms. Peterson asked if, since the actual turbine to be used had not been selected, actual sound will be measured at the time the project is operational.

Mr. Giecek stated that the Ordinance as it is written requires that they meet the condition of 55dba. He states that the Ordinance does not require prior to construction that they measure the sound. He stated that as far a post-construction they would certainly expect to need to monitor, verify, and comply at each of the turbine locations with respect to the requirement in the Ordinance.

Ms. Peterson asked what would happen if the results came back louder than what was allowed.

Mr. Giecek stated that they are very confident in their model. He stated that the requirement is 55dba and that they are not seeing anything over 50dba. He stated that if there was a sound that exceeded what the Ordinance requires then they would investigate that sound and that the assumption that he would have was that perhaps mechanically something was not working correctly. He stated that in that it case it would suggest that the turbine is not working at full efficiency which they want as well. He stated that they would fix the turbine and therefore fix the sound.

Ms. Peterson asked if there were damping additions that could be put on some turbines to lower the dba.

Mr. Giecek stated that he was not familiar with that. He stated that the expert witness that would be present at the quasi-judicial hearing would be well aware of those types of options and would be happy to address that.

Ms. Peterson asked if Apex's response to HDR (the expert firm hired by the County to review the application) regarding the sound study had satisfied HDR's questions.

Ms. Bryant stated that she had not yet received a response from HDR.

Mr. Hare asked if noise played a part in the selection of the wind turbine to be used in the project.

Mr. Giecek stated that was correct. He stated that when they did the model for the sound study they used the baseline sound specification from the turbine that recorded the highest amount of noise. He stated that it lent conservatism to the model.

Ms. Peterson stated that the land to be used in the project many times has a lot of wind. She stated that the area is subject to hurricanes which have significant winds. She asked what would happen to the blades in the event of a hurricane.

Mr. Giecek stated that around 55mph the unit would cease operating and would assume a defensive posture that makes it more sturdy and more secure against high winds. He stated that the design standards for the turbines are such that they are designed to withstand winds up to a category 4 hurricane.

Mr. Leggett asked what the average wind speed in Chowan County was.

Mr. Giecek stated that when a company is investigating a site, the wind speeds and data are something that the developer looks at as being proprietary. He stated that the wind speeds that they are measuring are sufficient for them to continue to make investment in the project at the location. He stated that as a business that is seeking to have a profitable venture, if you receive data that indicates that the wind is not going to allow it to be profitable then you would make a business decision to look for a better site.

Mr. Leggett asked for clarification that the wind had to be at least 10mph for the turbines to generate energy.

Mr. Giecek stated that was correct. He stated that the wind at ground level is lower than the wind higher up.

Mr. Leggett asked for confirmation that the turbine is designed to cut off automatically when the winds reach 50-55mph or if they would have to be manually cut off.

Mr. Giecek stated that it depended on the manufacture model.

Mr. Leggett asked what would happen if a turbine didn't turn off. He asked if it would be a danger if the blades began to spin too fast.

Mr. Giecek stated that he was unsure of what the problem would be but that it was in Apex's interest to make sure that there were safety and control mechanisms in place for all conditions and that they had redundant safety mechanisms in place in the event that one procedure does not function properly then there is another one behind it ready to protect the investment and the health and safety of the public.

Mr. Leggett asked where the two MET towers would be located.

Ms. Peterson stated that they were indicated on the site plan.

Mr. Giecek noted that the MET towers would be 394 feet tall and not 384 feet tall as he had previously reported.

Mr. Leggett asked if the MET towers would have a foundation since they were self-supporting.

Mr. Giecek stated that they would have a foundation and that the foundation for them would be smaller than the foundation for the turbines.

Mr. Leggett asked how long the MET towers would be in place.

Mr. Giecek stated that they would be in place for the life of the project.

Ms. Peterson asked if the wind speed information would be made public at any time or if it would remain proprietary.

Mr. Giecek stated that the data would be collected every ten minutes and reported to a central location to be compiled. He stated that the bulk of the data would be retained for proprietary reasons but that they would be willing to share some averages such as yearly averages. He stated that they may be willing to share some live feed data for educational purposes to a school but that they would not be sharing the entirety of the data.

Mr. Leggett asked how long it would take to remove one of the turbines.

Mr. Giecek stated that he was unsure of the time frame it would take to remove a turbine. He stated that was addressed in one of the expert reports. He stated that he could get that information and report it back to the Board.

Mr. Leggett noted that the maximum blade throw was reported to be 736-742 feet. He asked if there were any public roads within that proximity.

Mr. Giecek stated that there were no public roads within that range.

Mr. Winborne noted that a bond was set up to help the County take the turbines down in the event that the project fails. He asked what gave the County access to go on the property to take down the turbines if the bond is called.

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Mr. Giecek stated that the County has a statutory enforcement right. He stated that right was available to the County regardless of whether Apex owned the facility or if there was a successor. He stated that no matter who owns it, the statutory enforcement right is available to the County.

Mr. Winborne asked what would happen if a landowner wanted the access roads to stay.

Mr. Giecek stated that was the landowner's option.

Mr. Winborne asked if removal of the access roads was figured into the decommissioning cost.

Mr. Giecek stated that he believed that the cost was figured into the decommissioning cost.

Mr. Winborne asked if the landowner would have to sign anything stating that they wished to keep the road as installed by Apex.

Mr. Giecek stated that he did not recall the landowners having to sign anything stating that they would like the roads to remain.

Mr. Winborne stated that Apex may want to consider requiring that. He stated that if the decommissioning cost included road removal and a successive land owner states that the roads were supposed to be removed and weren't, then they would have it documented that the previous landowner had requested that the roads remain.

Mr. Giecek stated that the Zoning Ordinance, under Decommissioning, states that disturbed earth shall be graded and reseeded unless the landowner requests in writing that the access or land surface areas not be restored.

Mr. Winborne stated that addressed his concern.

Mr. Winborne asked what the prevailing wind for Chowan County was according to Apex's studies.

Mr. Giecek stated that the prevailing wind was from the southwest.

Mr. Winborne stated that was his life experience. He stated that even with a 2 mile distance from the schools the southwest wind would blow more of the sound away.

Mr. Winborne asked Mr. Giecek if wind speed was factored in the sound study model.

Mr. Giecek stated that he believed so but that he would prefer the expert witness address the model. He stated that with a prevailing southwest wind the schools are not in line with the wind.

Mr. Winborne asked where the data from the MET towers was sent.

Mr. Giecek stated that the data was sent to numerous locations.

Mr. Winborne asked if the data was used to buffer the blades or adjust the blade speeds.

Mr. Giecek stated that was correct.

Mr. Hare asked if as the wind turbines increase in speed and power if they would also become louder.

Mr. Giecek stated that often times as the wind picks up, the sound of the wind is more than the sound that the turbine makes.

Mr. Hare asked if the sound would be monitored as each turbine is started.

Mr. Giecek stated that they would absolutely be interested in performing proper monitoring to assure compliance with the Ordinance as well as to be sure that the machinery itself was functioning properly.

Mr. Hare asked if that information would be available to the County.

Mr. Giecek stated that information would be available to the County. He stated that they wanted to be a long-term good neighbor in the community. He stated that the burden would be on Apex to be sure that they can and will abide by all elements of the Ordinance.

Mr. Robison asked if Apex had acquired any permits from the Army Corp of Engineers.

Mr. Giecek stated that they have not.

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Mr. Robison asked if Apex had acquired any permits form the United Stated Fish & Wildlife Service.

Mr. Giecek stated that they have not.

Mr. Robison asked if Apex had acquired any permits from the North Carolina Wildlife Resources Commission.

Mr. Giecek responded that they had not at this time.

Mr. Robison asked if Apex had contacted the commanding military officer or commanding military officer's designee of any potentially affected military installation.

Mr. Giecek stated that as part of the FAA application for a No Hazard Determination the FAA evaluates commercial and military airspace and through that process Apex has had contact with different military installations.

Mr. Robison stated that the North Carolina Military Advisory Committee had put out a map showing areas affected by low flying flight plans. He stated that it covered half of Chowan County and asked Mr. Giecek if he had looked at that map.

Mr. Giecek stated that they had seen a map that was part of a legislative proposal.

Mr. Robison stated that was the map he was referring to.

Mr. Giecek stated that yes, he had seen that map.

Mr. Robison asked Mr. Giecek if he had contacted the military about it.

Mr. Giecek asked Mr. Robison if his question was a Land Use question that pertains to the application or the Ordinance or if it was a legislative question.

Mr. Robison stated that he was asking questions that came from the Department of Natural Resources (DENR) procedure for permitting programs for siting & operation of wind energy facilities.

Mr. Hare stated that he did not think that Mr. Robison's questions were germane to what the Planning Board was trying to accomplish.

Mr. Robison stated that he was trying to determine whether or not any action has been taken in the permitting process.

Mr. Robison asked if Apex had applied for their FAA permit.

Mr. Giecek stated that they had applied in 2014 but had not received any approvals to date.

Mr. Robison asked if Apex had gotten any approvals from the North Carolina Utilities Commission.

Mr. Giecek stated that they have not. He stated that they do have agreements in place with Dominion and PJM (the grid operator for the region) which indicates that they have formal agreements to allow Apex to utilize the electric lines on site and to enter into agreements with Dominion to build a substation.

Mr. Robison asked Mr. Giecek why Apex was coming to the County first before acquiring the other permits that would be required for the project.

Mr. Hare asked for any other questions from the Board. There being none, a 10 minute recess was taken.

(10 minute recess)

Mr. Hare called the meeting back to order.

Ms. Peterson stated that a question had come up during the break that she would like clarification on. She stated that she was shown a website, unimar.com, that identified federal lighting requirements on towers of certain heights and that the website states that anything between 350-700 feet tall requires a red light on every individual tower as opposed to selected towers. She asked if that was a question that should be deferred to the technical experts or if Mr. Giecek could respond to that.

Mr. Giecek stated that he was not familiar with that website. He stated that in wind development what you would look for was a FAA circular which would indicate what type of requirements there might be. He

stated that the circulars were issued at different times and that they were updated at different times. He stated that they do not have a lighting plan with the FAA. He stated that whether or not the information on that website is FAA information or not would be the key question. He stated that he was not the technician that files for or obtains the lighting plan from FAA. He stated that if there was a FAA requirement or circular for a certain kind of lighting at certain heights then they would have to abide by whatever the current circular is. He restated that they do not have a lighting plan at this time.

Ms. Peterson stated that she was trying to clarify whether 100% of the turbines would be lighted with the red lights at the top or just selected ones.

Mr. Giecek stated that they did have windfarms where not every turbine has a light. He stated that circulars are issued and updated periodically that may apply in different ways in different places under different height conditions. He stated that he could seek to determine what the current circular is from the FAA if there is one that applies at the heights that they are looking at and that he would be happy to report that directly to the County.

Mr. Hare asked if there was any board discussion at this time.

Mr. Leggett expressed concerns regarding negative impacts on the public health and safety as well as negative impacts to surrounding property values. He stated that he felt that the recommendations that were made by the Planning Board Committee had been weakened.

Ms. Peterson stated that it was her understanding that the Planning Board was not voting on those conditions.

Mr. Hare stated that was correct. He stated that the voting on the conditions listed under the Analysis portion of the Staff Report would occur at the quasi-judicial hearing held by the Board of Commissioners in August. He stated the Planning Board could express concerns that the application did not meet one or more of the conditions as a recommendation to the Board of Commissioners.

Mr. Leggett stated that he was aware that the Planning Board was not voting on those conditions and that he was just expressing his concerns.

Mr. Winborne moved to recommend approval of the application with the recommendations made by Staff.

The motion died for lack of a second.

Ms. Peterson suggested that some language be developed around the cash bond to address the regular reassessment to make sure that the amount of the cash bond is continually assessed to protect the County. She stated that perhaps the County Manager could weigh in on a frequency for that reassessment.

Mr. Robison stated that it was a surety bond and stated that it should be looked into to be sure that the bond will cover the cost of decommissioning completely. He stated that it would need to be reissued periodically.

Ms. Peterson stated that her concern was that the protection was spelled out clearly.

Ms. Womble stated that the Ordinance does require a cash bond. She stated that the Ordinance requires a surety bond in different situations. She stated that it was delineated specifically as a cash bond in the Wind Ordinance.

Ms. Peterson stated that there was so much in the application that was technical. She asked if it would behoove the Planning Board to urge the Commissioners to pay particular attention to those areas in the quasi-judicial hearing or if it was assumed.

Ms. Bryant stated that the quasi-judicial hearing would be heavy on technical expertise. She stated that is where the applicant would have their expert testimony submitted and those that were present to speak in opposition could present expert testimony and question those experts. She stated that it all would be fleshed out completely at the quasi-judicial hearing.

Mr. Robison recommended that the Commissioners hold off the quasi-judicial hearing until all of the permits have been acquired.

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Ms. Womble stated that it was not a requirement of the Zoning Ordinance that all the permits be submitted before the quasi-judicial hearing. She stated that when an application comes to the County, the County had a duty to move the application through the process. She stated that if an application is complete then the Planning Department has a duty to move the application through the process, that being Planning Board review and then to forward it on to the Board of Commissioners for their quasi-judicial hearing. She stated that the Board could not delay a hearing for an application that is complete by Ordinance standards for a new condition that is not in the Ordinance.

Mr. Robison asked why Apex came to the County first. He stated that they would need to get permits from DEQ and that DEQ did not have a policy yet because it is the first time they had handled an application of this type. He stated that DEQ had the expertise to look at the studies and that the County did not. He restated his recommendation that the County Commissioners hold off of the quasi-judicial hearing until all the permits are obtained.

Ms. Womble stated that she understood Mr. Robison's recommendation but that it was not a requirement in the Ordinance. She stated that if it was not in the Ordinance then the County could not hold the applicant to that requirement. She stated that the requirements had been set by the Board of Commissioners and that the Planning Board was not deciding whether or not the application would move forward or not. She stated that the Planning Board was sending a recommendation to the Board. She stated that before a building permit was issued all permits had to be received and turned into the County as stated in the Ordinance. She stated that even if a Conditional Use Permit was issued the applicant would still have to obtain all their permits before a building permit would be issued.

Mr. Hare asked for confirmation that Mr. Leggett was not satisfied with the Zoning Ordinance.

Mr. Leggett stated that was correct. He stated that he felt that the recommendations made by the Planning Board committee had been weakened. He expressed concerns with the setbacks and decibel levels stated in the Ordinance.

There was some discussion on Ms. Peterson's recommendation on the periodic cash bond reassessment and Mr. Robison's recommendation that the quasi-judicial hearing not be held until all permits are submitted.

Mr. Winborne stated that he did not see a reason for all the permits to be submitted before the quasi-judicial hearing is held. He likened the process to a farming situation where an older farmer wants to continue to keep his land in farm use will seek out a younger farmer and they will get together on a purchase price. He stated that the purchase price would be a whole lot less than if the older farmer put it up for auction. He stated that they would sign an option to purchase. He stated that the option to purchase gives the seller the contract to sell at a certain price and the buyer has a certain time to get all of his loans and all the paperwork in order to make the purchase. He stated that if that individual were to go to a bank to apply for a loan the bank would not process the loan unless they knew the sale was going to go through. He stated that the option to purchase makes sure that the sale will go through at a set price if it's done within a certain time. He stated that the Conditional Use Permit says that the applicant would be issued a building permit if all the other permits were in place. He stated that if a single permit is not in place then the Conditional Use Permit was null and void.

Mr. Robison stated that part of the reason to delay action until all the permits were in place was because those permits are all technical permits and that the County did not have the expertise to determine those.

Ms. Peterson stated that Mr. Robison was challenging the linear order of the Ordinance and that she did not feel that was the Planning Board's role. She stated that the Planning Board has been asked to evaluate whether the application meets the Ordinance requirements as written. She stated that she felt that the Ordinance had been well thought out and that in due time the permit applications will yield the information that Mr. Robison was looking for.

Mr. Robison stated that the linearity of the process had not been established. He stated that DEQ has no policy on what comes before what in review of the application.

Ms. Womble stated that the County Ordinance states what the requirements are for an application for a wind energy facility. She stated that the County cannot change the requirements of the Ordinance at this time. She stated that the time for that would have been when the Ordinance was written or amended. She stated that the application is based on the Ordinance at the time the application is submitted.

Mr. Robison moved to recommend to the Board of Commissioners that they delay the quasi-judicial hearing until all permits are in hand.

The motion died for lack of a second.

Mr. Hare asked for clarification on Ms. Peterson's recommendation.

Ms. Bryant stated that Ms. Peterson had recommended that language surrounding the cash bond be developed to address the periodic reassessment of the amount of that bond to protect the County's interest. She asked Ms. Peterson if she wanted to add that language as a condition or if it was something she was asking the Board of Commissioners to look into during their quasi-judicial hearing.

Ms. Peterson stated that she would like to add that language to condition 4(d) of the Staff Report.

Ms. Bryant read condition 4(d) with the language recommended by Ms. Peterson:

> **d.** Prior to the issuance of a building permit, the owner of a Medium or Large Wind Energy Facility shall provide a *cash bond* in favor of the County in an amount equal to the estimated removal cost of the Wind Energy Facility. The bond shall remain in full force and effect until any necessary site restoration is completed to restore the site to a condition comparable to that which existed prior to the issuance of the Conditional Use Permit. **A regular reassessment of the amount of the cash bond shall be established to cover the cost of decommissioning completely and to protect the County's interest.**

Ms. Peterson moved to add the language read by Ms. Bryant to item 4(d) of the Staff Report. Mr. Winborne seconded the motion. The motion carried unanimously. (5-0)

Ms. Peterson moved to recommend approval of the application with the Staff recommendations as amended. Mr. Winborne seconded the motion. The motion carried 3-2 with Mr. Leggett and Mr. Robison opposing.

Ms. Bryant stated that the date for the Board of Commissioners hearing will be confirmed in the Chowan Herald in the coming weeks. She stated that the date will also be published on the County website as soon as it is confirmed.

Mr. Hare noted the next item of business, Items Considered Timely & Important.

Mr. Leggett stated that he felt that the issue of board member absenteeism needed to be addressed. He suggested that if a member was unable to attend the meetings repeatedly then perhaps they should step down and give another citizen an opportunity to serve on the Board.

Ms. Bryant stated that there was language in the Ordinance that addressed that issue and that it was the decision of the Board of Commissioners and that it was the duty of Staff to notify them of what the attendance of the Board member has been. She stated that was something that the Commissioners review.

There being no further business, the meeting was adjourned.

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STAFF REPORT

To: Chowan County Planning Board
Date: July 26, 2016
Case: CC-CUP-16-02
Prepared By: Elizabeth Bryant, County Planner

GENERAL INFORMATION

Applicant: Timbermill Wind, LLC
C/o Apex Clean Energy Holdings, LLC
310 4th Street NE, Suite 200
Charlottesville, VA 22902
(434) 220-7595

Property Owners: Various (see Tab 4 of attached APEX/Timbermill Wind Farm CUP Application)

Subject Property: Various (see Tab 4 of attached APEX/Timbermill Wind Farm CUP Application)

Adjoining Property Owners :(See Tab 12 of attached APEX/Timbermill Wind Farm CUP Application)

Requested Action: ~ Conditional Use Permit request for a Large (Utility Scale) Wind Energy Facility

Tax PINs: 780800856085A, 781800282973, 781900182426, 780900650430, 781900067857, 781900264521, 780800680630, 780800678011, 780800884456, 780800286996, 780800287383, 780800376125, 780800569698, 780800690833, 780800982963, 780900406770, 780900904151, 780900899653, 781900005548, 781900110078, 781900120154, 790000803218, 781700348698, 780900924146, 780900955679, 780900986388, 781900032391, 781900130240, 781900280094, 781900324661, 790000714796, 790000735068, 689900845782, 780900466669, 780900476588, 780900943428, 781900031777, 781900041932, 781900042348, 781900093188, 781900334645, 790000828641, 790000931691, 689900813166, 689900925818, 780900106944, 780900931513, 781900039614, 781900137550, 781900236651, 790000816679, 790000820640, 780900394724, 790000104675, 781900415140, 780600380591, 780600571592, 780600660242, 780600861463, 780600695268, 780700302201, 780700309460, 780700408461, 780700536501, 780700606589, 780700715394, 781700034407, 781700139422, 790000600849, 780700807919, 780700815904, 780700850415, 781600083924, 780900588472, 790000609663, 790000418419, 780900787062, 780900961658, 781900107903, 780900596708, 780900798790, 790000504119, 781800474459, 689900831439, 780900673151, 780900779060, 780700676916, 780800504772

Location: Bear Swamp and Center Hill areas
Size: ~8,000 acres
Existing Zoning: A-1, Agricultural
Existing Land Use: Agricultural, Forestry
Land Suitability Classification: Primarily Low Suitable and Least Suitable, some Medium Suitability
Environmental Conditions: Class 2 Moderate and Class 3 Serious Hazards & Limitations

Surrounding Land Use & Zoning:

North- Various – primarily Agricultural, including some single-family Residential; A-1, Agricultural (farmland, livestock operations, and rural single-family residential)

South- Various – primarily Agricultural and the outlying portions of the Town of Edenton ETJ; Agricultural; A-1, Agricultural (farmland) and RA, Residential Agricultural in Edenton ETJ

East- Perquimans County jurisdiction

West- Various – primarily Agricultural, including some single-family Residential; A-1, Agricultural (farmland, woodland, livestock operation and rural single-family residences)

Land Use Plan:

Major Goals & Objectives: *LAND USE COMPATIBILITY, NATURAL HAZARD AREA, AREAS of ENVIRONMENTAL CONCERN, WATER QUALITY, AREAS of LOCAL CONCERN POLICIES*

- **B4** -- Ensure that land use and development activities provide a balance between economic development needs and protection of natural resources and fragile environments.
- **B13** -- Coordinate all development activity with appropriate Regional Health Department and state regulatory personnel.
- **B14** – Cooperate with the U.S. Army Corps of Engineers in the regulation/enforcement of the 404 wetlands permit process.
- **B31** -- The…County shall maintain development standards (such as limitations on hours of operation, distance/separation requirements, buffering/screening requirements, etc.) for special and/or conditional uses in order to assist with mitigating potential negative impacts.
- **D1** – Conserve the natural resources and fragile environments that provide protection from such natural hazards as floods and storm surges.
- **D2** – Minimize the threat to life property and natural resources that may result from land use and development within or adjacent to identified natural hazard areas.
- **D3** – The ... County will continue to coordinate all development within the special flood hazard area with the Planning & Inspections Department, NC Division of Coastal Management, FEMA, and the US Corps of Engineers.
- **D7** – Chowan County will continue to support and enforce the N.C. State Building Code, particularly requirements of construction standards to meet wind-restrictive factors such as design wind velocity.
- **E1** – Chowan County will continue to support Best Management Practices (BMP) on agricultural properties … in order to reduce sedimentation and pollution run-off into Nutrient Sensitive Waters.
- **E3** – It is the policy of … Chowan County to coordinate the approval of local land development projects with applicable state agencies to ensure compliance with regulations to prevent or control non-point source discharges.

- **E5** – Chowan County shall maintain requirements that, to the extent practicable, all development shall conform to the natural contours of the land and natural and pre-existing man-made drainage ways shall remain undisturbed. All developments shall be provided with a drainage system that is adequate to prevent the undue retention of surface water on the development site....Whenever practicable, the drainage system of a development shall coordinate with and connect to the drainage systems or drainage ways on surrounding properties or roads. All developments shall be constructed and maintained so that adjacent properties are not unreasonably burdened with surface waters as a result of such developments.
- **F1** – Chowan County support(s) state and federal law regarding land use and development in AECs.
- **F9** – The ... County shall require industries to use the best available technology to avoid pollution of air or water during both construction and operation of new industrial facilities.
- **G2** – The ... County will also support local and regional interest groups in the promotion of tourism.
- **G5** – It is the policy of ... Chowan County to conserve the natural and cultural resources for recreational enjoyment.
- **G7** – Continue to work toward a diversified economy including industry, tourism, and improved technical educational opportunities.
- **G8** -- Chowan County shall maintain airport height overlay requirements that prevent the creation of conditions hazardous to aircraft operation, that prevent conflict with land development which may result in loss of life and property, and that encourage development which is compatible with airport use characteristics.
- **G13** – The ... County remain(s) committed to State and Federal programs in planning areas related to community and economic development, including erosion control, public access and highway improvements.

<u>Future Land Use Classification:</u> *RESIDENTIAL AGRICULTURAL*

- Residential Agricultural land is estimated to encompass approximately 142 square miles (91, 344 acres) or about 91.6 percent of the total County land area.
- The Residential Agricultural classification is intended to delineate lands where the predominate land use is scattered, low density (less than one dwelling unit per acre) residences dispersed among farmland and open spaces.
- The Residential Agricultural classification along with the underlying A-1 (Agricultural) zoning district allows commercial uses typically associated with rural areas. Some of the projected needs for commercial uses in Chowan County will be accommodated in the Residential Agricultural classification. Public and Institutional uses such as churches, county parks, schools, golf courses and utilities are also appropriate for the Residential Agricultural Classification.
- The Residential Agricultural Classification is compatible with the A-1 (Agriculture) District of the Chowan Zoning Ordinance...The district is specifically established for the following purposes:
    1. To encourage the continued use of land for agricultural, forestry, and open space purposes;
    2. To encourage small-scale commercial uses that primarily provide goods and services to residents of the surrounding rural areas;
    3. To encourage only those industries which are agricultural-related; and
    4. To discourage any use which, because of its character, would create premature or extraordinary public infrastructure and service demands.

Zoning History: None on record.

Applicable Regulations: Chowan County Development Codes: Zoning Ordinance; Article III, Permits & Hearing Procedures, *Section 3.11* Recommendations on Special Use and Conditional Use Permits; Article VIII, Development Standards for Individual Uses, *Section 8.109* Wind Energy Facility (Small, Medium, Large)

ANALYSIS

The applicant seeks a Conditional Use Permit for the subject properties for the operation of a Large (Utility Scale) Wind Energy Facility in the Bear Swamp and Center Hill areas of Chowan County. The applicant has provided all required materials and has attempted to address this request in the attached application.

The Planning Board is charged to review the Conditional Use Permit request, and to forward its recommendations to the Board of Commissioners.

In granting a conditional use permit, the Board of Commissioners may attach reasonable requirements to the permit, in addition to this specified below, that will ensure the development in its proposed location:

1) Will not materially endanger the public health or safety;
2) Will not substantially injure the value of adjoining or abutting property;
3) Will be in harmony with the area in which it is located; and
4) Will be in conformity with the Land Use Plan or other plan officially adopted by the Board of Commissioners.

The Planning Board may send forward to the Board of Commissioners a recommendation of approval, they may recommend approval with staff suggested conditions, they may recommend approval with Board amendments to staff suggested conditions, or they may recommend denial of the permit request.

STAFF FINDINGS

The Land Use Plan identifies the existing land use classification of this property as Agricultural and Forestry, and the future land use classification as Residential Agricultural. A Large (Utility Scale) Wind Energy Facility is a use that is, according to the Chowan County Zoning Ordinance and the 2008 Edenton-Chowan County Land Use Plan, consistent with the A-1 (Agriculture) Zoning District and the Residential Agricultural future land use application.

Attached with this staff report is a matrix detailing the compliance of the Application with the technical requirements of Section 8.109 of the Chowan County Zoning Ordinance, submitted by HDR. HDR, a consulting engineering firm was hired by Chowan County to provide technical expertise and assistance in review of the information submitted by APEX for technical completeness and compliance with standard industry practices in the development of the information. HDR will aid the County in the review of the application regarding the compliance of the application with the technical requirements of the Ordinance for Large (Utility Scale) Wind Energy Facilities.

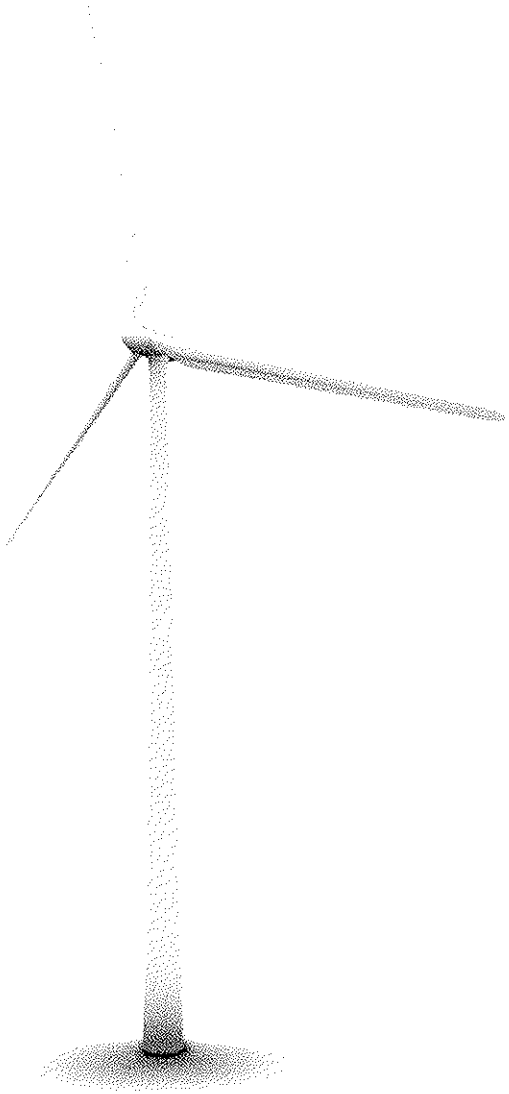
All applicable regulations of the Chowan County Development Codes and staff concerns that are applicable to this project have been identified. The planning staff recommends the following conditions

for consideration:

1. Final civil site design (including new road location and building specifications) shall be reviewed by County staff at a subsequent TRC meeting to ensure compliance with state and local building standards
2. Throughout the permit process, the Applicant shall promptly notify Chowan County of any proposed changes to the information contained in the permit application that would materially alter the impact of the project.
3. Changes to the approved application that do not materially alter the initial site plan may be administratively approved by the Zoning Administrator. Major modifications to the approved Conditional Use Permit will require a new Application and approval by the Planning Board and Board of County Commissioners in the same manner as the original Conditional Use Permit. Major Modification is defined as an expansion of the project boundary or an increase in the number of turbines. A decrease in the number of turbines or the relocation of any turbine on the site plan within the project boundary is not a Major Modification so long as the turbine locations conform to development standards of the ordinance.
4. Decommissioning
    a. The Wind Energy Facility Owner shall have twelve (12) months to complete decommissioning of the Wind Energy Facility if no electricity is generated for a continuous period of twelve (12) months. For purposes of this Section, this twelve (12) month period shall not include delay resulting from Force Majeure.
    b. Decommissioning shall include removal of Wind Turbines, buildings, cabling, electrical components, roads, and any other associated facilities down to thirty-six (36) inches below grade.
    c. Disturbed earth shall be graded and re-seeded, unless the landowner requests in writing that the access roads or other land surface areas not be restored.
    d. Prior to the issuance of a building permit, the owner of a Medium or Large Wind Energy Facility shall provide a *cash bond* in favor of the County in an amount equal to the estimated removal cost of the Wind Energy Facility. The bond shall remain in full force and effect until any necessary site restoration is completed to restore the site to a condition comparable to that which existed prior to the issuance of the Conditional Use Permit.
5. The Applicant shall obtain all applicable NCDOT permits required for any additional accesses to state maintained roads.
6. If required by the US Army Corps of Engineers as part of a 404 Individual Permit, an Environmental Assessment must be completed and submitted to the County for review prior to any issuance of a Building/Zoning Permit.
7. All other required State and Federal Permits must be issued prior to any issuance of a Building/Zoning Permit from Chowan County.
8. All details/improvements shall be installed/constructed according to Chowan County Development Code requirements.

APEX
CLEAN ENERGY

Timbermill Wind Project



Conditional Use Permit Application
Chowan County
Planning Board Meeting 7/26/16

Application Narrative – Key Highlights

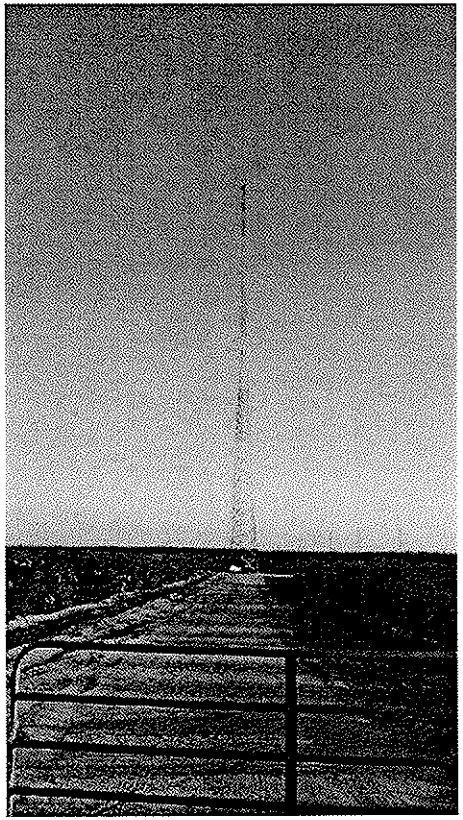
- **~16,000 acres, 105 turbines, 300 MW maximum**
- **Chowan County:**
  - ~8,000 acres
  - 48 turbines, access roads, underground 34.5 kV
  - 2 permanent meteorological towers

Application Narrative – Key Highlights

- **Access Roads**
  - Existing public roads, private roads, and field paths will be utilized to the extent possible, but may require improvements
  - New and improved access roads will be all-weather, gravel surfaced, and generally 16 feet in width
- **Underground Electrical Collector Lines**
  - Cables installed in a trench at a depth sufficient to avoid potential impact from existing land uses, at least 36" below ground and below bottom elevation of existing ditches and canals
  - Collection cables will be buried with a fiber-optic cable and an additional separate ground wire

Application Narrative – Key Highlights

- **Meteorological Towers**
  - Two permanent met towers are proposed to be installed along with the project
  - Used to obtain clean and unobstructed wind data for performance management
  - Self-supporting, height not to exceed the hub height of the Wind Turbines



APEX CLEAN ENERGY

Application Narrative – Key Highlights

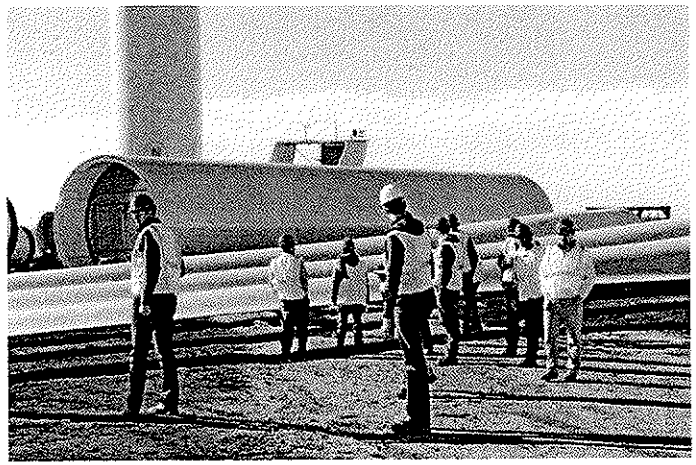
- **Operations & Maintenance**
  - ~10 personnel, including facility managers, a site manager, and a certified crew of technicians
  - Team located on Project site or in O&M building in Perquimans County during normal business hours
  - Will perform routine checks, respond to issues, and optimize performance of the wind farm
    - Scheduled preventive maintenance of turbines conducted in conjunction with representatives from manufacturer for the first one to three years of operation
  - Team will have specified personnel on call 24/7 should an issue arise outside of normal business hours

Application Narrative – Key Highlights

- **Operations & Maintenance – Safety and Control**
  - Monitored using a Supervisory Control and Data Acquisition (SCADA) system
    - SCADA allows for each turbine, connected via fiber-optic cable, to be monitored in real time by O&M staff
  - 24/7 Remote operations team has full control and monitoring capabilities as well, designed to ensure repetitive and duplicated forms of control
  - Third mechanism for safety and control is turbines themselves
  - Each turbine monitors wind speed and direction for positioning
  - Data also used for feathering the blades; applying the brakes in high wind speeds or if there is ice build-up; and to tell the turbine when the wind speed is strong enough to begin turning the generator

Application Narrative – Key Highlights

- **Construction**
  - Once all approvals obtained, Apex will complete engineering scale design
  - Construction of on-site roads, tower foundations, and substation may take approximately 8 to 10 months
  - Turbine installation will take approximately 2 to 3 months
  - Subject to receipt of necessary permits and weather delays, the Project is slated be operational during the fourth quarter of 2018



APEX CLEAN ENERGY

Application Narrative – Key Highlights

- **Construction**
  - For collection system trenching during construction, Timbermill Wind personnel and contractors will remove topsoil prior to trenching and restore topsoil after trenching completed
  - Contractor will decompact up to 10" below grade for crane crawls post-construction
  - Timbermill Wind personnel and contractors will confer closely with the NC Department of Transportation and the County to manage construction traffic

APEX CLEAN ENERGY

Application Narrative – Key Highlights

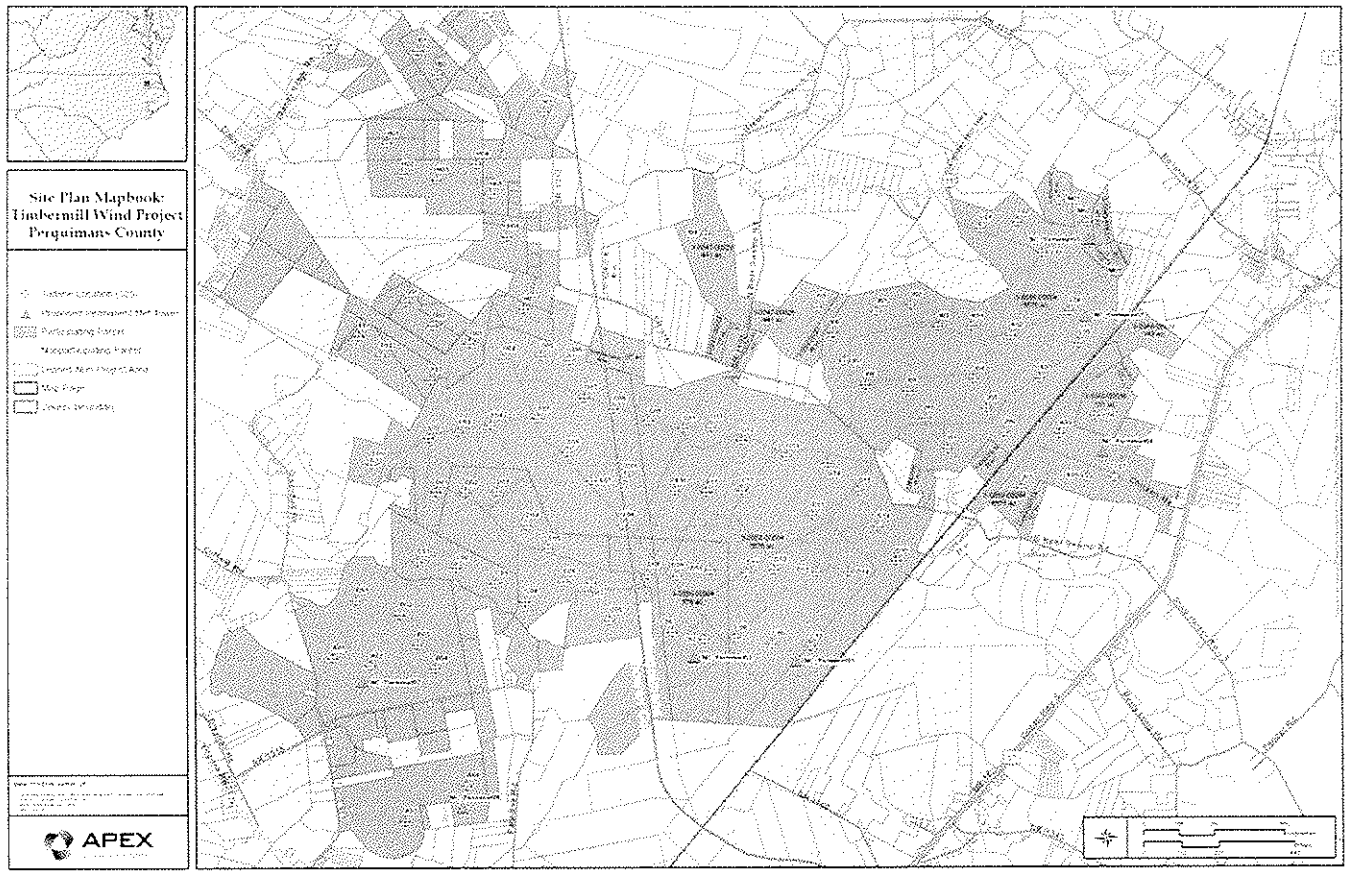
- **Necessary Future Permits**
  - NC Department of Environmental Quality Wind Permit
  - Federal Aviation Administration Determination of No Hazard
  - United States Army Corps of Engineers Clean Water Act Section 404 Wetlands Permit
  - United States Fish and Wildlife Service and North Carolina Wildlife Resource Commission Consultation
  - United States Environmental Protection Agency National Pollutant Discharge Elimination System
  - North Carolina Department of Transportation Driveway Permits
  - Chowan County Zoning and Building Permits
    - Road network and turbine access will accommodate emergency vehicles and an emergency response plan along with final site plan for these permits

Application Narrative – Key Highlights

- **Energy Consumption**
  - Electricity generated by the Project will be connected to the high-voltage transmission grid through the 230 kV transmission line located adjacent to the site
  - Electricity will be purchased by a third party, such as a utility company or an independent corporation

Participating Landowners

- **Leases with 27 Chowan landowners, 88 parcels**
- **~8,000 acres in Chowan County**



APEX CLEAN ENERGY

Site Plan - Setbacks

- **Setback calculations used maximum tip height of listed representative turbines, the Vestas V136 (590.6 feet)**
  - Public Roads: 1.5 * 590.6 = *886 feet*
  - Non-Participating Property Lines: 1.5 * 590.6 = *886 feet*
  - Occupied Buildings/Residences: 2.5 * 590.6 = 1,477 feet
  - Setbacks from Occupied Buildings and Residences are required from the nearest point of foundation, so an additional 48 foot buffer was added beyond building boundary data to ensure the Ordinance was met, yielding a setback line of *1,525 feet*

DNV GL Decommissioning Report – Key Highlights

- **Project decommissioning construction practices**
  - Wind turbines, foundations, cabling, electrical components, roads, and associated facilities will be removed according to the ordinance;
  - The Project substation will be completely decommissioned;
  - Decommissioning will start soon after the end of Project operating life, which is assumed to be 20 years for purposes of this study; and
  - Decommissioning work is performed in generally conducive weather conditions.

DNV GL Decommissioning Report – Key Highlights

- **Complete decommissioning cost is calculated as the sum of the cost of disassembly, removal, and disposal of the turbines and balance of plant**
- **After all material and debris has been removed, the site will be regraded to preconstruction conditions and natural drainage patterns**
  - Salvaged sub-soil will be replaced and capped with topsoil and salvaged organic material will be added in required areas
  - Impacted land will be restored to preconstruction vegetation and soil conditions as required by Project permits
  - Input of landowners will be considered as to the extent of decommissioning that will be undertaken on their land

DNV GL Decommissioning Report – Key Highlights

Activity	Estimated Cost Range
Dismantling of turbines	$4,487-$6,731,000
Dismantling of other components	$154,000-$231,000
Transportation and traffic	$1,257,000-$1,885,000
Site Reclamation	$226,000-$339,000
Total	**$6,124,000-$9,185,000**
Total (per turbine)	**$128,000-$191,000**

CH2M Hill Shadow Flicker Analysis – Key Highlights

- Per the Ordinance, shadow flicker on any occupied building or residence on a non-participating landowner's property caused by a large wind energy facility must not exceed 30 hours per year
- Modeling results show that NO residences or occupied buildings have the potential to exceed 30 hours per year
- In fact, the maximum potential amount of shadow flicker any residence or occupied building may experience is 15 hours and 6 minutes

CH2M Hill Sound Analysis – Key Highlights

- Per Section 907.27(B)(5)(a), audible sound from a Large Wind Energy Facility shall not exceed 55 dBA as measured at any Occupied Building or Residence on the property of a Non-Participating Landowner
- Modeling results show that NO residences or occupied buildings have the potential to exceed <u>even 50</u> dBA

Epsilon Associates Blade Drop/Throw – Key Highlights

- Turbines designed to shut down automatically under high wind speed conditions
- Maximum blade throw predicted to range between 224 and 226 m (736 and 742 feet)
- Even with conservative assumptions, all occupied buildings, residences, public roadways, and non-participating parcel boundaries are beyond maximum predicted blade throw distances

Epsilon Associates Ice Drop/Throw – Key Highlights

- Each turbine equipped with sensors that measure uneven blade loading and will curtail operation until ice drops from a loaded blade
- Maximum ice drop/throw range is between 958 and 1,235 feet
- All occupied buildings and residences are beyond maximum predicted ice drop/throw distances

Property Value Studies

- "Four detailed and documented studies"
- 3 sponsored by the Berkeley National Laboratory
- Studies cover period from 2009-2014 and 12 states
- Studies of over 183,000 sales of single-family homes in primarily rural areas
- "No net effect on home prices could be attributed to the proximity of the dwelling to the wind project."

Summary

- **Project meets and exceeds:**
  - All required setbacks from non-participating parcels, public roads, and occupied buildings and residences
  - Required maximum of 30 hours per year shadow flicker
  - Required maximum of 55 dBA at any occupied building and residence
- **All occupied buildings and residences are beyond maximum predicted ice and blade drop/throw distances**

Edenton·Chowan
Chamber of Commerce

Resolution Supporting Wind Energy Projects

WHEREAS, the Edenton-Chowan Chamber of Commerce supports new economic development, and is dedicated to the prosperity, sustainability and longevity of the community, as well as the safety, security, and wellbeing of its residents; and

WHEREAS, the Edenton-Chowan Chamber of Commerce recognizes that wind energy facilities across the United States are drivers of the local economy, support local schools and educational opportunities, and serve to attract additional businesses to project areas; and

WHEREAS, the Edenton-Chowan Chamber of Commerce envisions that the construction of wind energy facilities in Chowan County will provide a significant economic impact to local businesses in our county, provide hundreds of jobs during construction, and 8-10 permanent positions when complete; and

WHEREAS, the Edenton-Chowan Chamber of Commerce understands a wind energy facility will utilize our natural resource, wind, and allow for continuation of the agricultural traditions in our county; and

WHEREAS, the Edenton-Chowan Chamber of Commerce appreciates that wind energy facilities provides long term energy cost certainty for domestic energy to American consumers; and

WHEREAS, the Edenton-Chowan Chamber of Commerce and the Chowan County Commissioners recognize the need for a diverse base of business and industry; and

WHEREAS, the Edenton-Chowan Chamber of Commerce will partner with Edenton-Chowan Schools and the College of the Albemarle to provide appropriate learning opportunities and practical programs to train students for long-term jobs in the wind industry; and

WHEREAS, the Edenton-Chowan Chamber of Commerce seeks to improve the energy efficiency of local businesses and residents by investing in clean energy alternatives such as wind; and

WHEREAS, the Edenton-Chowan Chamber of Commerce mandates that wind energy facilities constructed in our county be supported by rigorous environmental analysis, wildlife site analysis, avian analysis, and other investigative analysis as required by local, state and federal agencies and regulations.

NOW, THEREFORE BE IT RESOLVED that the Edenton-Chowan Chamber of Commerce supports the development of projects that are aligned with its goals and objectives, and supports wind energy facilities with the realization that it will bring positive change and improvement to the economy and residents of Chowan County.

ADOPTED this 8th day of October, 2015

SIGNED: Scott Noble, President _____

Win Dale, Secretary _____

EDENTON-CHOWAN SCHOOLS
BOARD OF EDUCATION

Post Office Box 206, Edenton, NC 27932
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www.ecps.k12.nc.us

Ricky Browder
Jean Bunch, Vice-Chair
Gil Burroughs
Glorious Elliott
John Guard, Chair
Gene Jordan
Kay Wright

Resolution Regarding Support of Wind Projects

WHEREAS, the Edenton-Chowan Schools Board of Education embraces all opportunities to create and sustain positive environmental improvements in the world; and

WHEREAS, the Edenton-Chowan Schools Board of Education is committed to teaching students to be good stewards of our communities, the earth and all its resources; and

WHEREAS, the Edenton-Chowan Schools Board of Education recognizes the tremendous opportunity to demonstrate a forward-thinking mindset for ecological sustainability, environmental leadership and the financial well-being of Chowan County; and

WHEREAS, the Edenton-Chowan Schools Board of Education integrates environmental education into curricula, and supports students and staff to become leaders in making their schools and communities a more ecologically friendly place to live, learn, work, and play; and

WHEREAS, the Edenton-Chowan Schools Board of Education aspires to improve the energy efficiency of our facilities and supports efforts for renewable energy sources; and

WHEREAS, the Edenton-Chowan Schools Board of Education envisions a long term goal of transforming our facilities into independent power producers by investing in clean renewable technologies such as solar and wind; and

WHEREAS, the Edenton-Chowan Schools Board of Education supports partnerships with environmental initiatives that will provide access to educational opportunities,

NOW, THEREFORE BE IT RESOLVED that the Edenton-Chowan Schools Board of Education strongly urges the Chowan County Board of County Commissioners to support the approval and construction of Wind Projects that serve to benefit the citizens of Chowan County.

Adopted this 1st day of September 2015

John E. Guard
John Guard
Chairman

Rob Jackson
Dr. Rob Jackson
Secretary

Submitted by Patrick Elym

Health Effects of Noise from Large Wind Turbines

Commissioned for and published in Wind Energy: A Reference Handbook, *ABC-CLIO, 2014*

Eric Rosenbloom

It has been known since the early 1980s that noise from large wind turbines can adversely affect human health. In 1981, physicist Neil Kelley and colleagues reported their investigation of complaints from residents living within 3 kilometers of an experimental 2-megawatt downwind two-blade wind turbine in Boone, North Carolina, which had begun operation in the fall of 1979 (Kelley et al., 1981; Kelley et al., 1982). Considering that people reported "feeling" the sounds more than hearing them, that the noise was more annoying indoors, that small objects near walls and the glass in picture frames often rattled, and that apparent noise levels were only moderately increased, it seemed to the researchers that infrasound (below the threshold of hearing, or <20 Hz) and low-frequency (<100 Hz) noise (ILFN) was resonating with the building structures as well as with the subjects' bodies to create the feelings of pressure, uneasiness, and vibration. And indeed, their measurements showed that ILFN pulses dominated the sound energy from the turbine.

Unfortunately for neighbors of large wind turbines, Kelley's research was shelved as commercial wind turbine makers adopted the upwind three-blade design that is usually seen today, asserting that the problem of pulsing (throbbing) low-frequency noise was thereby overcome. But commercial models did not approach the size of the one Kelley studied until around 2000, which was, not surprisingly, when many physicians and others, for example, Amanda Harry in England, David Iser in Australia, Robyn Phipps in New Zealand, and Michael Nissenbaum in Maine, started noticing an increase of health complaints after nearby wind turbines began operating. Complaints included headache, dizziness, feeling of pressure, stress, and depression. People experienced relief when they left the area or the turbines weren't operating. A desperation to move away was common, and many families did so if they could. In Ripley, Ontario, the wind energy companies bought several homes of families experiencing health effects (Elma-Mornington Concerned Citizens, 2013).

Nissenbaum compared people who lived within 3,500 feet (about 2/3 of a mile, or just over 1 kilometer) versus people who lived 3 miles away from the 28 wind turbines in Mars Hill, Maine, showing a clear correlation between the wind turbines and health complaints (Nissenbaum et al., 2012). By this time, French and German health experts, British noise experts, and even a German project developer recognized the need for greater distances between large wind turbines and dwellings than were commonly allowed (Chouard, 2006; Noise Association, 2006; Quambusch and Lauffer, 2008; Retexo-RISP-Marketing, 2004; Villey-Migraine, 2004).

In Portugal, researchers of the effect of ILFN in the body were asked to investigate a home near wind turbines. They found the ILFN levels to be similar to those found at homes near industrial sites whose residents showed changes to the heart, lungs, and muscles that the researchers called "vibroacoustic disease." Follow-up research of the residence near the wind turbines documented a variety of health effects. Initially, the closest turbine was ordered to be removed and three

others to be shut down at night. Eventually those were ordered removed as well to protect the health and well-being of the residents (Alves-Pereira and Castelo Branco, 2007; Supremo Tribunal de Justiça, 2013).

In many places, turbines have been ordered to be shut down at night so that people can sleep. Sleep disturbance itself is considered to be a health effect by the World Health Organization, because sleep is required for both physical and mental health. Combined with the stress from excessive noise, lack of good sleep can lead to long-term problems such as learning disabilities in children, work impairment, and cardiovascular disease (Berglund et al., 1995; Goines and Hagler, 2007).

Meanwhile, physician Nina Pierpont of New York interviewed people from around the world who complained of health effects from wind turbines. She gave the name "wind turbine syndrome" to the common set of symptoms associated with nearby wind turbines: sleep disturbance and deprivation, headache, tinnitus (ringing in ears), ear pressure, dizziness, vertigo (spinning dizziness), nausea, visual blurring, tachycardia (fast heart rate), irritability, problems with concentration and memory, and panic episodes associated with sensations of movement or quivering inside the body (Pierpont, 2009).

Pierpont realized that these symptoms, as well as the fact that people were affected differently – some severely, others not at all – were consistent with inner ear disturbances, akin to motion sickness, that can be caused by noise, especially ILFN (Salt and Hullar, 2010). Long-term exposure to high levels of ILFN has long been known to have effects on health, such as those studied in Portugal under the term vibroacoustic disease. Now the likely mechanism for the effects of short-term exposure to wind turbine noise had been found. With the possibility of pulsing ILFN acting on the inner ear to cause the unexpectedly high rate of complaints around wind turbines compared with other sources of noise (Janssen et al., 2011; Pedersen and Waye, 2004), acoustic engineers started measuring wind turbine noise in the lower frequencies and rediscovered what Neil Kelley had found almost 30 years before: Noise from large wind turbines is characterized by pulsing ILFN that is associated with complaints and health problems (Channel Islands Acoustics et al., 2012; Møller and Pedersen, 2011).

And the solution (at least for human neighbors) is the same: large setback distances to avoid subjecting people to not just increased audible noise as recommended by the World Health Organization (Berglund et al., 1995), but also pulsing ILFN (Kelley, 1987; Noise Bulletin, 2011).

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Eric Rosenbloom is a medical sciences editor and writer. He has been President of National Wind Watch, a clearinghouse for news and research concerning industrial-scale wind power, since 2006.

Submitted by Patrick Flynn

The Timbermill Wind Project is designed for a 25-year lifespan. What is the decommissioning plan? When will all the wind turbines be completed?

How long have the proposed wind turbine designs been in operation? What tests were conducted to prove their effectiveness? How long are the warranties?

Who will be responsible for catastrophic failures when warranties have run out? Are local boards making decisions regarding turbine placement sufficiently educated on the risks? How far away from a wind turbine is a safe setback distance?

Renewable UK says that, on average, wind turbines are generating electricity 70-80% of the time. Is that a 20-30% failure rate? Does erosion of the soil around the base of a wind turbine contribute to the failure rate?

What happens to a wind turbine once it fails before the 25-year operational window? (Greenpeace reports 20-25 years) What are the proposed costs involved vs. the benefits? What is the average yearly maintenance cost? What is the projected cost per turbine?

Given past turbine problems, what is the maximum recorded range of wind turbine blade and turbine projectiles when there is an accident or disaster like a hurricane?

We are Albemarle EMC Customers. What is the overall cost of the project? Who is paying for the project? Taxpayers? What will Albemarle EMC have to do to adapt the energy/technology created?

Have offshore platforms on the Albemarle Sound been investigated?

Who will use the energy created?

From the Apex website: wind "Studies have shown an increase in wind energy in the Midwest could save consumers between $65 and $200 per year. Prices of wind power in 2012 averaged 4 cents per kilowatt hour, a 50% decrease from 2009*. As the wind industry grows, prices will continue to drop." If these same people were dedicated to purchasing the wind farm themselves, what would the average cost per person be?

From the Apex website: "The Renewable Electricity Production Tax Credit (PTC) is an income tax credit of 2.2 cents per kWh for electricity from wind turbines. Unlike a grant or direct payment to wind energy companies, the PTC reduces income tax for wind project owners based on the amount of energy produced in the first 10 years of operation. This savings allows a project to charge lower rates for its energy." Clarification: Wind power prices to the electric company buying the energy or the prices paid to the suppliers of the energy. Does dropping prices mean the wind turbines will be less profitable in time and the wind farm less able to sustain itself and its promises to this community? Do Federal energy money subsidies factor into this cost? How do subsidies change the average cost of energy after 10 years?

The Caithness Wind Farm Information Forum reported has documented 221 separate incidences of blade failure, with pieces of blades documented to have flown over 1,300 meters—or 4,266 feet (4/5 of a mile). Blade pieces have gone through roofs and walls of nearby buildings. Are these wind turbines hurricane rated?

At least 121 structural failures have been recorded too, including entire wind turbines that have crashed to the ground. The website www.windaction.org documents many of these. Turbines have crashed to the ground in school yards, near homes, roads and walking paths where only by sheer luck was no one underneath when the multi-ton structures collapsed. In the Palm Springs area, a turbine spinning out of control forced closure of a major highway. There are also concerns about many turbines still standing –where failures such as cracked foundations and sinkage have been observed. Hurricanes and tornados have devastated wind turbines.

Http://www.buildings.com/article-details/articleid/12492/title/wind-turbine-disasters.aspx says, As early as 2009, health research was available linking proximity to wind turbines to a variety of health problems including heart disease, tinnitus, vertigo, panic attacks, migraines, and sleep deprivation. These claims were dismissed by some based on relatively small sample sizes, but the groundwork for investigation has been set, with the consequences of proximity to wind turbines possibly far greater than noisy annoyance. Maintenance technicians, engineers, turbine owner/operators, and other similar roles are among the greatest risk of fatal wind turbine accidents. Environmental damage can be associated with wind turbines as well, as they can pose a risk to birds, bats, and other wildlife. Documentation exists detailing various protected species

falling prey to wind turbine fatality. Are hearing problems something that need to be compensated during the working life of the project and while the wind turbines operational?

Explain Apex's relationship to Iberdrola Renewables and Dominion Power? What financing does Apex have in place to contract the proposed wind farm?

Will a new presidential administration affect the 10 year tax incentives? If the tax incentives are removed one year into the project how will that affect its outcome? Is the technology US made or do we rely on international material, parts, expertise and suppliers?

Given that Chowan County is a military flight corridor what is the reaction from the Department of Defense and other Federal agencies regarding the proposed wind farm?

How are Chowan County and the Town of Edenton expected to benefit from the proposed wind farm each year? Are road repairs to existing roads that are trashed in the construction and maintenance phases included in project costs?

Http://eastcountymagazine.org/dark-side-%E2%80%9Cgreen%E2%80%9D-wind-turbine-accidents-injuries-and-fatalities-raise-serious-safety-concerns documents many problems and concerns with wind farms.

Regarding health issues: http://www.aweo.org/wind-turbine-syndrome.html . Veritigo, motion sickness, etc. Several counties with wind farms are re-opening their health studies… We propose a 1 Year Health Study of existing wind turbines. We propose a property value guarantee. We hope you will research these questions before you make your recommendations.

Patrick & Belinda Flynn
302 S Broad St. (Mail)
1924 Paradise Rd.
Edenton, NC 27932

Jim Robson's
Comments/questions

1, Adjoining Property Owners (within 100 ft.) - Art. 3.12 B of the zoning ordinance states that the zoning administrator shall mail written notice to ... owners of all properties adjacent ... but I can't find anything in the ordinance that specifies adjacent to mean within 100 ft. or 150 ft. For an object 600 ft. tall, I would suggest that "adjacent" means within visual distance or maybe one mile.

Establish an objective definition of "adjacent

2. Art. 8.109 B (1) f of the County Zoning Ordinance states that the application must contain "Any environmental Assessments required by state or Federal law.

Under the Project Summary, Tab 2 pg. 2 APEX states (f) Any Environmental Assessment required by State or Federal law. "Timbermill Wind is not required by state or federal law to prepare a formal Environmental Assessment related to the Facility. " However, in Chapter 143 of the NC General Statues §143-215.117(b) (4) to be included in the Permit Application Package: A description of species of concern, habitats that support species of concern, and in §143-215.119 Permit Application Requirements sub. para. (a) (10) there is a requirement for "A study of the impact ...on natural resources and uses, including avian, bat and endangered and threatened species" Since none of these are addressed, the application is not complete.

Can the County use the escrow account to commission and evaluate such studies?

3. Art. 3.14 of the Chowan zoning ordinance: Additional Requirements on Special Use and Conditional Use Permits

A. Subject to subsection B., in approving a special use or conditional use request, the Planning Board or Board of County Commissioners, respectively, may attach to the approval such reasonable requirements in addition to those specified in this Ordinance as will ensure that the development in its proposed location:

1. Will not endanger the public health or safety;
2. Will not injure the value of adjoining or abutting property;
3. Will be in harmony with the area in which it is located; and
4. Will be in conformity with the land development plan, thoroughfare plan, or other plan officially adopted by the Board of County Commissioners.

#1 Will not endanger the public health or safety.

There are numerous independent studies that substantiate the fact that low frequency sound - infrasound - produced by large wind turbines substantially and adversely affect the health of people living nearby.

#2 Will not injure the value of joining or abutting property.

APEX devotes four of the application tabs to studies that purports to substantiate this claim. The fact that they devote so much space to property value shows that this is one of the very weak points in their application. The Chowan Planning Board review of the Hoen report has already show that report to be thoroughly discredited.

http://www.acousticecology.org/wind/winddocs/property/Schneider_Ben Hoen on role of Property Value Guarantee.pdf
In addition,Hoen indicates if developers believe turbines won't devalue neighboring property they should guarantee it, and he's right:
https://www.wind-watch.org/documents/ben-hoen-on-need-for-property-value-guarantee/

#3 Will be in Harmony with the area? What is an objective criteria for "harmony"?

APEX states (Tab 2 page 5) "Under NC law where a use is identified as a conditional use in a zoned district, the use is presumed to harmonious with the area in which it is located."
However, in NCSOG publication (http://sogpubs.unc.edu/electronicversions/pdfs/ss22.pdf "Special Use Permits in NC Zoning" Apr. 2007 by David Owens, Owens states:

Harmony with the Area
Several older cases state that inclusion of a particular use as a special or conditional use establishes a presumption that the use is compatible with the surrounding area. ...
However, it is more accurate to say that inclusion of a use as a permissible special use within a zoning district establishes a prima facie showing of harmony with the properties in that district (rather than a conclusive finding

of harmony), and the burden is on the challengers to rebut the presumption of harmony at the particular site proposed.

A number of cases uphold special use permit denials based on neighborhood incompatibility. As an example:

In SBA, Inc. v. City of Asheville the court upheld the denial of a special use permit for a 175-foot telecommunications tower. There was uncontroverted evidence that the tower would be four times taller than existing buildings in the neighborhood. Twelve witnesses testified that the tower would be an eyesore. The court held that the applicant's own evidence, a computer-generated photograph superimposing the tower, corroborated the proposed tower's visibility and predominance over existing buildings and showed that it would be "in sharp contrast" to its surroundings. The court held this to be sufficient to establish that this particular tower would not be compatible with the neighborhood.

The Chowan County zoning ordinance, Art. 402 F describes the intent of the A-1 Agricultural District:

A-1, Agricultural District.
This district is primarily intended to accommodate very low density residential uses as well as associated public and institutional uses, low intensity commercial uses, and *agricultural-related industrial* uses which are interspersed throughout areas that are principally characterized as rural in nature. This district reflects the diverse nature of land uses within predominantly rural areas and, therefore, permits a wide array of land uses. *However, those intensive land uses, which could have an adverse impact on the rural nature, are not permitted* or are allowed only on a special use permit basis following a formal review and approval process. The district is specifically established for the following purposes:

1. To preserve and encourage the *continued use of land for agricultural, forestry, and open space purposes;*

2. To encourage small-scale and low intensity commercial uses that *primarily provide goods and services to residents* of the surrounding rural areas;

3. *To encourage only those industries which are agricultural-related*;

4. To encourage the concentration of more intensive urban land uses in and around identified growth areas that have the capacity to

accommodate the utility and traffic demands of such development, thereby avoiding premature conversion of farmland to urban uses; and

5. To discourage any use which, because of its character, would create premature or extraordinary public infrastructure and service demands. e.g. power transmission lines, easement requests for extensive rights of way, eminent domain actions, etc.

Industrial scale wind turbines up to 600 ft. tall fits none of these purposes.

#4 Will be in conformity with the land development plan, thoroughfare plan, or other plan officially adopted by the Board of County Commissioners.

The Chowan County/Town of Edenton Core Land Use Plan, Section IV, Plan For The Future states the following:
Section 4.2.1
Policy B10: Industries which are noxious by reason of the emission of smoke, odor,dust, glare, *noise,* and *vibration* and ... will not be permitted.
Policy B11: Industrial development and/or industrial zoning *will not infringe on established residential development.* When reviewing proposals for new industrial development or industrial zoning, the Town and County will ensure that the proposals are comparable with surrounding land uses and that identified adverse impacts are mitigated.
Policy B30: The Town and County shall maintain appearance and operational standards for nonresidential developments ... to require architectural design compatibility within the proposed developments, and to provide landscaping and screening to buffer adjoining residentially used or zoned properties.
Policy B31: The Town and County shall maintain development standards (such as limitations on the hours of operation, ...) ...in order to assist with mitigating potential negative impacts.
Section 4.2.2 B. Land Use Compatibility Policies
...County policies discourage the conversion of active, productive farm and forest land to urban uses.
Section 4.3.1 A. Residential Agricultural Classification.
Para. 7: ... However, those intensive land uses, which could have an adverse impact on the rural nature, are not permitted or are allowed only on a special use permit basis following a formal review and approval basis.
The district is specifically established for the following purposes:

1. To encourage the continued use of land for agricultural, forestry and open space purposes;

2. To encourage small-scale commercial uses that primarily provide goods and services to residents of the surrounding areas;

3. To encourage *only those industries which are agricultural -related;* and

4. To discourage any use, which, because of its character, would create premature or extraordinary public infrastructure and service demands.

Section 4.3.1 E. Industrial Classification.

Para. 4: ... Consequently, the County's policy is to ensure the comparable location of industrial land uses and to require the necessary measures to mitigate adverse impacts.

An objective definition of "Industrial":

The **electric power industry** is the generation, transmission, distribution and sale of electric power to the general public.

4. Taxes. How will taxes be levied, who will pay the taxes, how much will the tax revenue be, will Apex try to use PILOT? It is noted that there was no representation from the Tax Dept. at the Technical Review. How much federal tax credits did Apex receive?

5. Art. 8.109 B (1) e requires that the site plan show planned locations of turbines, etc. and substation(s), ancillary equipment, building(s), etc. Where will a substation be located? Will there be any ancillary equipment or other buildings? It appears that all electricity generated will flow through Perquimans County. If Perquimans rejects the permit, where would you send the electricity?

6. The list of geographic locations (Lat. & Long.) of the turbines does not match the locations of the turbines shown on Google Earth. Why and how can the two be reconciled? If the Google Earth display is to get FAA approval, why are the actual geographic locations different?

7. The Chowan Planner lists a number of Major Goals & Objectives from the Core Land Use Plan, but she leaves out several that are pertinent:

- B10: Industries which are noxious by reason of the emissions of smoke, odor, dust, ***glare, noise, and vibration***, and those which deal primarily in hazardous products such as explosives, will not be permitted.
- B11: Industrial development and/or industrial zoning will not infringe on established residential development. When reviewing proposals for new industrial development or industrial zoning, the Town and County will ensure that the proposals are comparable with surrounding land uses and that identified adverse impacts are mitigated.
- Art. 4.2.2 B line 11: County policies discourage the conversion of active, productive farm and forest land to urban uses.
- Art. 4.2.2 E Water Quality Policies

The local policies support the maintenance, protect and enhancement of water quality. The town and county policies support land development that has minimal adverse impacts on water quality. Best management practices are encouraged to minimize stormwater impacts. Preservation of remaining portions of Bear Swamp is encouraged by county policies to protect aquifer recharge and wildlife habitat.

8. Staff Report: Staff Findings

5. The applicant shall obtain all applicable NCDOT permits required for any additional access to state maintained roads.

6. If required by the US Army Corps of Engineers a part of a 404 Individual Permit, an environmental Assessment must be completed and submitted to the County for review prior to issuance of a Building/Zoning Permit.

7. All other State and Federal Permits must be issued prior to issuance of a Building//Zoning Permit from Chowan County.

Have all these permits been obtained? If not, why are we considering this application - the application should not be considered by the county until all other permits have been obtained.

9. Will Apex provide the manufacturers recommend safety guidelines and operating instructions for each of the proposed wind turbines, unless they would like to select one. This would be in congruence with the board's requirements to protect the safety and health of the county citizens.

Written Questions & Comments Submitted at July 26, 2016 Planning Board Meeting

-What is the current land use on the 8,000 acres involved in the farm?

-Will trees need to be removed and land leveled?

-Will construction noise be an issue for the 8-10 month land preparation period?

-What does wind turbine noise sound like?

-Apex measured decibels, flicker, and blade throw to currently occupied buildings and public roadways, not property lines. This means property owners might not be able to safely or comfortably build between current building and property lines. This constitutes a "taking" and should be investigated.

-Since developing, building properly, and maintaining these turbines takes "x" amount of energy, electric, gasoline, oil, etc. what is the net output of energy after subtracting energy used to develop the project?

-It is time to look toward the future and consider cleaning up the environment for future generations. I am in favor of Timbermill wind project and would appreciate the Board's consideration of the permit.

-The project will improve our economy and give us clean energy and a better future. It will promote more jobs. I have studied Apex and think it is good project. I support it 100%.