

**CITY OF KEENE  
NEW HAMPSHIRE**

**JOINT PUBLIC WORKSHOP  
PLANNING BOARD/  
PLANNING, LICENSES, AND DEVELOPMENT COMMITTEE  
MEETING MINUTES**

Monday, January 12, 2015

6:30 PM

Council Chambers

**Planning Board Members Present**

Michael Welsh, Chair  
Gary Spykman  
Christine Weeks  
Councilor James Duffy  
Andrew Bohannon  
Mayor Kendall Lane  
Nathaniel Stout

**Planning Board Members Not Present**

Eleanor Vander Haegen

**Planning, Licenses and Development  
Committee Members Present**

Councilor Emily Hague  
Councilor Bettina Chadbourne  
Councilor Carl Jacobs  
Councilor David Meader

**Planning, Licenses and Development  
Committee Members Not Present**

David Richards, Chairman

**Staff Present**

Rhett Lamb, Planning Director  
Michele Chalice, Planner

**1. Roll Call**

Chair Welsh called the meeting to order at 6:30 pm and a roll call was taken.

**2. November 10, 2014 meeting minutes**

Michael Welsh offered the following correction: Page 9, roll call vote for 07-C. Mr. Welsh stated that he recalls voting in favor of this item.

Mr. Lamb stated that this can be corrected by staff looking at the video of the last meeting.

A motion was made by James Duffy that the Joint Committee accept the November 10, 2014 meeting minutes as amended. The motion was seconded by David Meader and was unanimously approved.

**3. Public Workshop**

Don McCormick, CEO and Founder of The Local Farms Project, presents the Keene Energy and Agriculture Project.

Planning Director, Rhett Lamb addressed the Committee first. Mr. Lamb stated that in 2009/2010 the City pursued a grant through the EPA and the partnership with Don McCormick started at that time to better use the City's landfill gas collection system. Mr. Lamb then introduced Don McCormick.

Mr. McCormick addressed the Committee next. Mr. McCormick stated that that concept for this started when the City looked at the need for building community resilience in the face of some big challenges. However, there are some challenges that agriculture and energy are facing which needs to be addressed. There is also a competition for resources and is happening at all levels. The biggest challenge in all of this is time, but there are solutions at hand.

Mr. McCormick went on to say that the Keene Energy and Agriculture facility is an integrated energy and food system. What was looked at was using some of the unused portion of the closed landfill gas collection system. Currently there is an energy plant that could be turned into a combined heat and power facility and their task would be to upgrade the existing collection system and add a heat component. Generating energy from this landfill gas has a 20% efficiency rate and when you add heat to that the efficiency rate rises approximately to about 68%.

Mr. McCormick then referred to a rendering of the green house which consists of a hard shell for the outside of the building. It would also be an aqua culture facility for raising fish. The facility would be close to 11,000 square feet in size and intends to have the capacity to be the distribution location for other farmers in town. The hydroponics portion is highly engineered for raising vegetable. The main crop that would be grown would be leaf lettuce (sustainably produced and organically grown). The aqua culture system will produce about 70,000 pounds of fish. The building will also include office and classroom space. The design of the facility is so that everything in nature works together and nothing is wasted.

A single rain event will produce 13,250 gallons of water for this green house facility and there are going to be cisterns on the roof to collect the water. There is also 60,000 gallon of aqua culture on site which is another pool of water.

Mr. McCormick stated that they also wanted to find a nutrient supply that was ideal for plants that could be produced organically on site; aqua culture is a great way to do that. He added that at the same time they are growing a healthy market fish they are also building nutrients for the crops. He went on to say that sustainability on the technical side makes for a good magazine article but sustainability on a community relationship level, building collaborations with organizations in the City, providing a resource for other farmers in the area which have all been an essential component of the Keene Energy and Agriculture Project. He noted that they have built a relationship with Antioch University, Dartmouth College, Keene State College and UNH and have provided them with great learning and resource opportunities.

Mr. McCormick then outlined the key outputs:

- 500,000 pounds of herbs and salad mixes annually to the local market
- Local and sustainable brand development
- 66,000 pounds of fresh tilapia
- 25 high quality jobs with benefit and career training
- Algae and sustainable local food system development research
- Research and education partnerships
- Greenhouse gas reduction and zero waste
- Replicable business model, technical knowledge and training
- Public private partnerships in sustainable development of local food systems and education

Mr. Spykman thanked Mr. McCormick for his presentation and asked how the capped landfill will produced bio gas at levels that are useful and what happens when it starts tapering off and doesn't produce sufficient gas to power the facility. Mr. McCormick agreed that this is already at

a decline and what they have done is to map out the productivity of what happens with such a decline and what supplemental resources are necessary. He stated that it is premature to start a conversation at this time but he would like to eventually start a discussion about solar power at the landfill.

Ms. Weeks asked about snow on this structure. Mr. McCormick stated that they work with a company that designs for snow loads. He explained that they use a double film on the top of the roof which melts the snow fast and moves it on to the gutters which helps collect water year round.

Mr. Bohannon asked for the geographic radius of where the food will be distributed. Mr. McCormick stated that they are working for about 50 miles.

Councilor Duffy commended the presentation and stated that he is excited about this project. Councilor Duffy asked about research to use algae for bio fuel. Mr. McCormick stated that this is very doable at this site and Keene State has something similar they are working on and he would like to partner with them to work on it.

Councilor Jacobs asked whether Mr. McCormick would be using existing power. Mr. McCormick stated that they would be with extensive upgrades made to it. The Councilor asked whether the necessary renovations to the power plant would dovetail with this project. Asst. Public Works Director, Duncan Watson stated that the work Public Works has planned has nothing to do with the Keene Energy and Agriculture Project and this is work that needs to be done. The bottom end overhaul work on the existing generator will be done in the next two weeks and will be ready for the new work to begin.

Councilor Hague stated that she is excited to hear about algae cultivation and possibly capturing algae for fuel purposes and asked whether this would require an additional structure. Mr. McCormick stated that his plan is to work with the City to locate this.

Mr. Stout noted that he wasn't sure if this facility was going to be a distribution center or not and asked whether they should also consider that cost as well in terms of the sustainability of the entire center. Mr. McCormick stated that they have built a software system that meets the purchasing requirements of grocery stores. The grocery stores have agreed that if this facility can provide them with a food certification certificate and custody tracking, they will bring their truck to the facility and not only pick up food from Keene Energy and Agriculture Project but also pickup produce from local farmers.

Mr. Spykman noted that if the applicant was to use artificial lighting they might be able to get more levels in the same footprint and asked why this has not been considered. Mr. McCormick stated that what Mr. Spykman is suggesting is called vertical farming but as this process gets better this would be something that would be efficient but at this point felt it would be inefficient.

Ms. Weeks asked whether there are different nutrient levels in different types of lettuce and asked whether this facility will be growing the most nutritious kind. Mr. McCormick answered in the affirmative and explained that the darker greens have more nutrient value and the lettuce they have selected has flavor as well as nutrient value. Ms. Weeks asked whether this facility will contribute to the Community Kitchen. Mr. McCormick stated that he has set a goal of 10% of the products for food banks.

Chair Welsh asked why the choice of tilapia and not trout or some other kind of fish. Mr. McCormick agreed that from a local marketing point of view there is a value of growing a higher value fish but his interest is growing a fish that will help the nutrient system as well as this facility serving as a model for sustainable food development especially in water deprived countries. He noted that tilapia will produce one pound of flesh for two pounds of feed, which is extremely efficient.

Councilor Jacobs asked what Mr. McCormick plans on feeding the fish. Mr. McCormick stated that it would be algae as well as corn and soy.

Councilor Hague asked about rainwater collection and noted that New England is known for not having the cleanest rain and asked whether any filtration is being thought of. Mr. McCormick stated that everything that comes from the roof goes into a mechanical filtration, into a carbon filtration and then UV sterilization before it is stored.

Mr. Spykman pointed out that this is an ambitious project that will come in stages and asked when this is going to be a project that is going to ultimately make money or whether it was going to need public funding. Mr. McCormick stated that they are competing with people who are buying water and heat and the number one cost of this type of operation is labor, then it is heat, power and lastly nutrients. He indicated that this business can work only if it is economically rewarding. He added that the investors have invested in this project because they are looking for return on their investment. \$800,000 of the 2.5 million comes from private investors.

Ms. Hague asked how long it will take for the City's portion to be paid back. Mr. McCormick stated that the estimation is about 13 years.

Mr. Lamb noted that one of the key elements of the City's 2007 Climate Adaptation Plan was to develop better local food infrastructure.

Vice-Chair Welsh asked about the schedule for this project. Mr. McCormick stated that the engineering drawings are being prepared for the site plan and they should be forwarded to the City within a month and construction is estimated to begin by the end of April to the May. Employees who will be working with the aqua culture should be starting sometime in June or July, in September crop is scheduled to start with October 15<sup>th</sup> as the goal for market.

Mr. Stout asked about the ownership model. The Local Farms Projects is owned by Mr. McCormick and four other investors and this project is considered to be an LLC, so there are members involved. The City Agreement includes gas rights and a certain amount of leased land that the project can be developed.

Vice-Chair Welsh stated that he likes the desire to incorporate the resources that are available locally and felt that students in the area would be eager to work in this facility and suggested that students be used for more than just laboratory work. He asked how many tours this facility will be conducting to showcase this facility to other communities. Mr. McCormick stated that they have the technical resources to serve other businesses who want to replicate something similar to this. He added that where they go is determined by how well they succeed with this facility.

Ms. Weeks asked whether there could be any consideration given to partnering with the Industrial Education Program at Keene State College and offer credit to students learning this

technology in other communities. Mr. McCormick stated that he hopes they can develop the resources to do this but he does have to be careful what they promise and their first goal will be on running a business successfully.

Vice-Chair Welsh asked for public comment.

Ms. Abigail Abrash Walton of 73 High Street asked how many jobs this facility will be providing. Mr. McCormick stated that they will be creating 25 jobs and will offer living wages with benefits.

Ms. Chalice noted that transporting salad often would require plastic and asked how this would be considered sustainable. Mr. McCormick stated that if a community has a good recycling program, this should not be an issue. He indicated that there will be a message encouraging recycling but they are looking at alternative packaging options as well.

Vice-Chair Welsh thanked Mr. McCormick for his presentation.

3. Next Meeting **Monday**, February 9, 2015

Mr. Lamb referred to the CIP tour which is scheduled for January 24<sup>th</sup> and the Committee should be getting communication from the Manager's office.

4. Adjourn

The meeting adjourned at 7:45 PM.

Respectfully submitted,

Krishni Pahl,  
Minute Taker

Reviewed by Rhett Lamb, Planning Director