2/14/2013
To: City of Milwaukee
From: Sweet Water Foundation 501(c)(3)
Re: Update with respect to Outdoor Auaponics Greenhouses and Fish House

#### Loan expenditures to date

With the support of the loan from the City of Milwaukee, SWO has designed and constructed the basis for a state of the art commercial aquaponics food production system which will serve as an international model for year round commercial food production in a controlled urban environment. These controlled environment agriculture (CEA) systems are currently located on the outdoor field directly adjacent to the 2151 S Robinson building. Please see attached photos for the site location, concept design, and newly created aquaponics systems.

This new outdoor system design maximizes energy through the optimization of natural light (no additional grow lights) and radiant heat from the water to maintain temperatures conducive to support production levels in the greenhouse for year round intensive commercial agriculture production. Over the course of the 2012/2013 winter, we have been closely monitoring one of the systems and have successfully sustained consistent production levels and a healthy environment for our perch despite the dramatic fluctuation in weather. We plan to continue monitoring the systems over the course of the full year and release a series of white papers and/or journal publications periodically with updates on the status of the systems across the seasonal shift in temperatures and environmental conditions.

Building upon the City of Milwaukee's momentum in the realm of Urban Agriculture and the recommendations of the IBM Smarter Cities Milwaukee Report, this new commercial greenhouse aquaponics system design is indicative of a replicable model for commercial urban agriculture on contaminated, brownfield, or vacant industrial lots in Milwaukee's climate zone.Given the success of this system to date, we have received much interest from entities seeking to translate the model regionally, nationally, and globally given the increased global concerns about drought and ongoing environmental crises. As such, we are also working on a number of collaborations with various Universities within Milwaukee (including MSOE and UWM's School of Fresh Water Sciences) and across the U.S. Each of these Universities have expressed interest in the utilization of the revamped Sweet Water site as a research and design platform for 21st century technologies with a particular focus on renewable energy and urban aquaculture, and innovations in year round food production.

#### SWF partnership with Veterans to maintain and continue development of the systems

Along with its many ongoing partnerships for intergenerational and interdisciplinary education in the STEAM (Science, Technology, Engineering, Art, Math) disciplines throughout the city of Milwaukee, SWF is currently partnering with the Center for Veterans Issues to pilot the first complete growing season of our new aquaponics system. Building upon the ongoing successes of a two year partnership with CVI and NABVETS and in direct support for the Organic Therapy Project, SWF will host and train 4 US military veterans on our new Greenhouse Aquaponics site to produce vegetables for sale. One of the clients who will be purchasing the produce is the Milwaukee Center for Independence (MCFI), which is also contracted with 30 local schools to provide lunches. SWF will also continue to supply the customer base of restaurants, grocery stores and farmers' markets that SWO has established over the past 4 years. The remainder of the 2 acre site will be used as farm production through the use of a series of raised bed container gardens.

This partnership is currently extending into Chicago as the recently formed NABVETS chapter in Chicago is seeking the expertise and guidance of SWF and CVI/NABVETS to catalyze a number of workforce development, reentry, social entrepreneurship models, and community economic development projects based upon the Organic Therapy Model. It is our belief that this collaboration has the potential to develop into a national model.

It is our intention that the Sweet Water farm will continue to be a site for job training for US military veterans, as well as education for schools and the general public, for many years to come.



## Sweet Water 2.0 (Greenhouse Aquaponics System)



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# 2151 Aerial View (Outdoor Property)



circa spring 2009



circa spring 2011