NEPTUNE AQUACULTURE, INC.

May 16, 2000

Mr. Richard Weiner
Vice Mayor
City of Davie
Davie, Florida 33314-3339

Dear Mr. Weiner:

In keeping with our recent phone conversation Neptune Aquaculture is pleased to submit several preliminary proposals, in synopsis form, which would provide for Neptune to assume management control of the project while enabling the City to amortize its investment and Nova to continue using the site as an educational tool.

During our visit to the site, Mr. Papadoyianis and I found that many of the ideas or projects being used or contemplated are interesting and educational. However, from our viewpoint, the project is not now geared to operate as viable commercial entity. Following are some of the areas which should be addressed:

1] limited number of product and species being raised,
2] proposed species to be raised,
3] marketing plan or lack thereof,
4] heavy labor cost burdens,
5] harvesting system and controls
6] condition or lack of certain equipment ,

Unless corrections are made quickly, the city can only look forward to continuing to incur negative cash flow.

RESOLUTION:

The current facilities are being utilized for educational/research projects which are either not commercially viable, or lack the proper scale of operations to become

2234 N. Federal Highway, Suite 372 • Boca Raton, Florida 33431
(561)395-5397 • Fax(561)395-1776 • email: neptune@ntr.net

14545 J Military Trail, Suite 167, Delray Beach, Florida 33351
561-638-5974 or Fax 561-638-5724 email: foodfish@gate.net

viable. As such, the facility is in dire need of certain modifications in order to accommodate commercial production of select species on a for-profit basis. It is our opinion that the current product line must be changed. Although tilapia is growing in popularity throughout the United States, tremendous commercial production of this species in Latin American and Asian countries has made the product available at prices well below what the Davie facility can compete with. The market price of tilapia is anticipated to continue to decrease as foreign producers increase their production. The only viable way to compete in the tilapia market is to keep production costs extremely low, which is not an alternative for a small, closed system operation, such as the Davie site.

For such a facility, Neptune would target high profit margin species that could generate profits with limited production. The higher profit species would overcome the obstacle of higher production costs associated with a small facility. Additionally, a viable species mix would include such species as would benefit from the enclosed, closely managed facilities. In contrast, tilapia is a relatively easy species to cultivate, so competition is great, margin is low, and mass production is essential for profitability.

Although Neptune sells the majority of its current production to the seafood market, it has identified potential in several other niche markets. Through its current associations, and those acquired by management in more than 25 years of marketing to many aspects of the aquaculture and seafood industries, Neptune has established a worldwide network of wholesalers who are desirous of carrying its product line. Neptune, following acquisition of appropriate facilities such as the Davie site, is prepared to move forward and fill profitable market voids.

The species, production protocol, marketing, and profit potential will be addressed in detail in a future business plan once an initial proposal has been accepted.

REQUIREMENTS:

In order to bring the facility from its current state to one of profitability, Neptune would anticipate that a cash infusion of not less than $125,000 nor more than $175,000 will be required. The greater portion of this will go into lease hold improvements. A detailed "use of proceeds" will be provided when required.

PROPOSALS:

[these are only general outlines, specific details will be generated at a later date and after the City indicates a preference]

 # 1 _A "Joint Venture" entity would be created wherein, the City, Neptune and

Nova would share in future profits. Neptune would be contracted as the "managing partner" and would determine the nature of product and volume of production, type of improvements and marketing direction. Nova would provide the personnel [at a labor rate acceptable to Neptune] to operate the facility with Dr. Baca's as the on-site director. A use of proceeds budget would be created. The City would provide the funds required as mentioned above. Books and records would be open to all parties but maintained by Neptune.

Equity in the new entity would be as follows:

The City	40 % ,	Neptune	50 %,	Nova	10 %

 # 2 A "Joint Venture " would be created whereby the City would provide the capital required to improve the facility and institute the new marketing programs. Neptune would have a "set fee", five year, management contract and control all aspects of project.

Initially, equity in the project would be allocated as 70% to The City and 30% to Neptune. Nova would be encouraged to use the site as a learning center but would hold no equity. Books and records would be maintained by The City . A small "operating account" would be established to provide funds for daily operations.

As the operation became profitable and The City amortized its total investment, its equity would diminish on a proportional basis and Neptune's would increase by a like amount until such time that Neptune would hold 70% equity and The City 30%. The City would retain this equity position in lieu of rent and utilities payments.

3# Neptune would, through its Broward Fish Farms, Inc. wholly owned subsidiary take over complete charge of all operations at the Site. It would negotiate an arrangement with Nova for future involvement in the project.

The City would provide a loan to Neptune in the amount of $175,000. The loan would be used at Broward's discretion, but in keeping with a pre-approved use of proceeds . The loan would bear no interest for 3 years and thereafter would bear interest at a rate equal to 8% per annum. Payments to amortize the loan would begin in the 4th year of the loan would be repaid in the following 2 years. Neptune would have no responsibility for any previous loans or investments made by The City for the project.

Neptune would pay, as rent for the facility, an amount agreed upon by the parties. Furthermore, Neptune would retain a right of first refusal for the purchase of the property at a predetermined figure.

In closing, let me say that both Mr. Papadoyianis and I firmly believe the site has an excellent potential for profitability. With over 60 years of business experience, 25 of which has been exclusively in aquaculture, we feel confident that we can successfully transform the project into a profit center. Commissioners are encouraged to visit Neptune's Web-Site [Neptuneaquaculture.com] for more information on the Company's operations and future plans.

Sincerely,

Sal Cherch

Sal Cherch,
Chief Operating Officer

NOVA
SOUTHEASTERN
UNIVERSITY

George L. Hanbury, II

May 16, 2000

Bob Middaugh
Town Administrator
Town of Davie
6591 Orange Drive
Davie, FL 33314-3399

Dear ~~Mr. Middaugh,~~ Bob

Attached is a proposal from the Deans of our Wayne Huizenga Graduate School of Business & Entrepreneurship and our Oceanographic School to the Town of Davie for the continuation and expansion of the educational Aquaculture Research Complex. We feel our partnership with the Town of Davie has been productive educationally in the past, and I would like for you to share this new proposal with the Mayor and Town Council.

It should be understood, however, that this presentation has not been presented to the Board of Trustees of Nova Southeastern University. Any agreement of this nature would be subject to their approval. The President will be presenting this proposal to the Board this weekend, and I believe it would be beneficial if we could provide them with any suggestions or comments from the Mayor and the Town Council.

I apologize for my delay in responding to your request; however, the closure of the bonds for the new library has preoccupied all of my time. Your understanding of my delinquency is greatly appreciated.

Sincerely,

George

George Hanbury
Executive Vice President for Administration

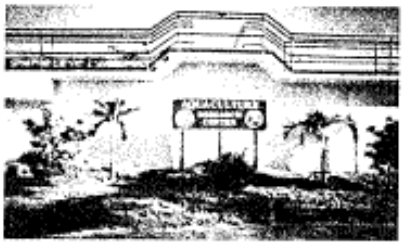
GLH/em

OFFICE OF THE EXECUTIVE VICE PRESIDENT FOR ADMINISTRATION
3301 College Avenue • Fort Lauderdale, Florida 33314-7796 • (954) 262-7555 • Fax (954) 262-3800 • hanbury@nsu.nova.edu

PROPOSAL FOR

THE CONTINUATION AND EXPANSION OF THE DAVIE AQUACULTURE RESEARCH CENTER (THE ARC) into the

DAVIE AQUACULTURE RESEARCH COMPLEX



Submitted to:

Town of Davie

Submitted by:

Nova Southeastern University
The Oceanographic Center
The School of Business and Entrepreneurship

MAY 2000

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1 INTRODUCTION

A feasibility study was conducted by NSU for the town of Davie to determine whether their abandoned wastewater treatment plant had potential for aquaculture. The results were promising enough to begin a joint venture between the two parties. An agreement was signed to initiate the Davie Aquaculture Research Center (ARC). Retrofitting for aquaculture was begun in November of 1996, and the dedication took place in February of 1997. Academic activities and sales of fish were initiated in September of 1997 and of hydroponics vegetables in February of 2000.

The stated purpose of the ARC is to foster research and education in the field of aquaculture. Over the past three years, the ARC has been developing and testing methods for maximizing production; a great deal of aquaculture research has been conducted; graduate students have obtained their degrees; and education has been a mainstay. However, facilities enhancements and sales goals have not met the initial budget.

This document is a proposal to the town of Davie for NSU to take a leadership role in the operation of the ARC. As such, NSU would become responsible for renovations and salaries while Davie would provide a long-term lease of the existing facilities and land, as well as basic utilities.

The following positives were evaluated by NSU and resulted in this proposal:

- The facility is successful in aquaculture and hydroponics research, education, and production.
- Adjacent Davie land provides opportunities for expansion and state-of-the-art aquaculture.

- Combining efforts of NSU's School of Business and Entrepreneurship (SBE) with the Oceanographic Center (OC) will blend business education and skills with biological talents to insure success.
- The existing space is appropriate for an expansion and development which would include research, education, community service, and productivity.

2 CURRENT STATUS

2.1 DAVIE AQUACULTURE RESEARCH CENTER (ARC)

At the present time, the Davie Aquaculture Research Center has an inventory of products, equipment, and clients. These include:

- Inventory of 72,500 total fish (of these, 15,000 are saleable, or 18,750 lb, valued at $37,500).
- Inventory of 20,000 fingerlings, valued at $2,000.
- Inventory of 32,300 plants, valued at $8,075.
- Equipment and supplies with depreciated value of $7,000.
- Renovation assets of approximately $8,000.
- Seafood brokers with ongoing sales of $2,000 per month.
- Nurseries, landscapers, and groceries with sales agreements of $3,000 per month.
- Four graduate students in the midst of research.

These are significant assets and represent building blocks for the future.

2.2 ADJACENT LAND

The ARC facility (buildings and tanks) occupies an area of approximately 13,600 ft^2 (0.3 acre). An additional 61,600 ft^2 (1.4 acres) of the site is a field which was formerly drying beds and unused land. This land offers an ideal location and situation for a state-of-the-art aquaculture research, training, education, and production facility, built from the ground up, using modern design and equipment.

The SBE and OC have produced a concept for an aquaculture facility occupying the present ARC and adjacent land. After evaluation of a variety of modern-day aquaculture concepts, an Intensive Farm Center consisting of a tilapia production facility and an eel Production facility appear promising for lands occupied by the ARC. A Hydroponics Center would be integral in the complex. The utility of the current ARC, and upgrades necessary to bring it into a greater production mode also are feasible.

3 PROPOSAL FOR THE AQUACULTURE RESEARCH COMPLEX

Following various meetings between OC, SBE, Town of Davie, and NSU administration, it was agreed that a proposal would be submitted to the Town for lease of the facility and grounds by Nova Southeastern University. This proposal contains a description of the proposed Aquaculture Research Complex and general terms for contract preparation.

THE AQUACULTURE RESEARCH COMPLEX

The purpose of the Aquaculture Research Complex (The Complex) is to foster research, education, community service, and intense production in aquaculture and hydroponics.

Academic and educational activities will include the following.

3.1 AQUACULTURE BIOLOGICAL SCIENCES: RESEARCH AND EDUCATION

The Mission of **Davie Aquaculture Research Complex** will be to foster research and education in the field of aquaculture. This mission is completely consistent with the mission of the Oceanographic Center which is to carry out innovative, basic, and applied research and to provide high-quality, graduate and undergraduate education in a broad range of marine-science and related disciplines. The Oceanographic Center also serves as a community resource for information, research, and education on oceanographic and environmental issues. It is important to note that the current Davie Aquaculture Research Center has a tradition of testing methods for maximizing production in order to facilitate research and education. The new Aquaculture Research Complex will continue that tradition, but also include in its vision and activities the basic physiology and biology of the organisms that are being or may be grown. Support for upwards of 10 graduate students is envisioned. These students will be conducting directed independent study research as well as M.S. and Ph.D. thesis/dissertation research on various aspects of aquaculture. Student research efforts will benefit from direct association with and guidance from senior researchers from the NSU Oceanographic Center and from distinguished guest and visitor scientists who will utilize the ARC facilities to develop research designs and to generate research products (e.g., publications in the peer-reviewed scientific literature).

In addition to the beneficial educational activities that research provides, a more formal system of aquaculture education will be fostered, promoted, and developed. This effort will build upon the existing graduate level courses already offered in aquaculture and are expected to include:

- An undergraduate major in aquaculture (curriculum already developed). This major is a natural addition to the current science offerings and should promote retention in the sciences by providing a greater diversity of opportunities for undergraduate science majors.

- Additional graduate courses in aquaculture biology. Current offerings can be expanded. The demand appears to be present and the new facilities can provide the infrastructure for such new courses.
- Joint graduate courses with the Wayne Huizenga School of Business and Entrepreneurship on the business of aquaculture.
- Distance education courses on aquaculture biology and business (joint with the WHSBE). These distance efforts may include the more traditional cluster concept, but also are envisioned to consist of web-based online courses as well.
- Continuing education aquaculture workshops and short courses.
- Community outreach projects.
- Tours of the ARC for numerous school groups.

The educational and research opportunities to be fostered by the Davie Aquaculture Research Complex represent dramatic and distinct benefits to both the general field of aquaculture from broadening the knowledge base and also to the formal education of a wide variety of students ranging from graduate, undergraduate, and the interested layperson.

3.2 BUSINESS AND ENTREPRENEURSHIP: RESEARCH AND EDUCATION

The Wayne Huizenga Graduate School of Business and Entrepreneurship has become a partner with the Oceanographic Center in the new Davie Aquaculture Research Complex. The WH SBE brings a diverse and credible academic program to the partnership.

The goal of the WH SBE master's division is to produce complete managers-managers who can cope successfully with the rapidly changing demands of business, government, and public/private organizations. To meet these demands, the Huizenga School offers seven master's programs: Accounting (weekend, online), Business Administration (one-year, weekend, online), International Business Administration, Public Administration, Health Services Administration, Business Administration in Health Services Administration, Human Resource Management, and Taxation. All masters' programs are offered in Fort Lauderdale at the Huizenga School campus and at select cities throughout the U.S., Bahamas, Jamaica, Panama, and Canada. Building on its reputation for flexible program scheduling, the Huizenga School offers master's programs in different formats to meet the needs of its customers. Working professionals pursue the master's programs utilizing the 18-month/weekend-delivery format at over 30 select locations. M.B.A. students pursuing the one-year M.B.A., attending on weekdays at the Huizenga School campus, and fulltime MIBA students participate in optional internships that will allow them to put their newly acquired knowledge to work solving real business problems. The Huizenga School also offers the MBA and MACC, online versions of the Master's of Business and Master's of Accounting programs. Using internet-based learning technologies and synchronous and asynchronous communication methodologies including email, electronic bulletin boards, chatrooms,

and streamed video and audio, the programs break through the barriers of time and space imposed by the traditional classroom.

The doctoral division offers qualified candidates a unique opportunity to pursue their studies in an environment that promotes the application of advanced academic knowledge to the problems of business and government. Designed for bright, entrepreneurial, and motivated professionals, the doctoral programs offer the opportunity and challenge to participate in a curriculum that is carefully balanced to ensure the depth and rigor associated with doctoral education, while ensuring applicability to the real world of business and industry, government, and education. For the busy Executive, the format of these programs allows participation by individuals with substantial professional commitments. Additionally, the programs provide training to those pursuing a career in academia either following or in lieu of a career in industry. The Huizenga School offers three doctoral programs, each with an individual academic focus, and all advancing the knowledge, skills, and abilities expected from doctoral education. These include Business Administration, International Business Administration, and Public Administration.

Also provided is the Institute of Entrepreneurship and Executive Education. The mission of the Institute is to create positive, memorable, and effective learning experiences through innovative, non-degree executive, management, and professional education programs. The Institute offers various public open-enrollment programs throughout the year and industry and company specific customized courses that support strategic objectives and help develop solutions to issues facing a company.

Consumer appetite for fresh seafood increases annually. The Aquaculture industry is growing as the proportion of cultured metric tons of aquatic species outpaces the tonnage of captured species. The WH SBE will leverage this need and the new Davie Aquaculture Research Complex to develop and provide excellent educational experiences for students in the business of aquaculture. Under the guidance of professors, students will learn sound business practices as they manage the Aquaculture operation, market the various products, and develop strategies for growth and profitability. Students will also obtain experience in creating business policy while serving on the 'Board of Trustees".

Distinguished external advisors and SBE faculty will guide this board. The student "Board" will make decisions related to increasing market share, niche markets, the value of additives, health food marketing, Asian marketing, other ethnic marketing, live fish marketing, specialty crops (e.g., eels, sturgeon), and new cash crops (e.g., striped bass). Also, the value of being good "corporate citizens" and active members of the Davie community will be emphasized

Additionally, a series of specialty courses in the business of aquaculture and on-line, distance education format aquaculture business courses (in association with the Oceanographic Center) are envisioned. The creation of unique learning opportunities and student centered activities drive this initiative. The synergy between SBE faculty

and Oceanographic Center researchers and educators will do well to ensure success of the business oriented academic programs and to provide an outstanding educational experience for masters and doctoral students at the Davie Aquaculture Research Complex.

3.3 FACILITIES

The Aquaculture Research Complex is to be comprised of three component Centers. Facilities will include:

3.3.1 AQUACULTURE RESEARCH CENTER (ARC)

This is the original aquaculture facility, with first harvests taking place in the fall of 1997. It contains eight 70,700-80,000 gallon tanks, each capable of producing about 10,000 pounds of tilapia fish. The water treatment and filtration system is composed of biofilters, particle filters, oxygen concentrators and tanks, hydroponics units, and created wetlands. The biofilter system is comprised of four 30,000 gallon tanks, two for particle settling and two for nitrogen conversion. Following settling and biofiltration, water is passed through a 150 particle filter for removal of finer particles. Then it is mixed with oxygen and pumped either into the fish tanks or into a hydroponics system. In the fish tanks, it provides oxygen-rich, clean water for growth of fish and plankton (natural fish food rich in phyto-nutrients). These fish are sold live when they reach 1 1/4 pounds.

3.3.2 INTENSIVE FARM CENTER (IFC)

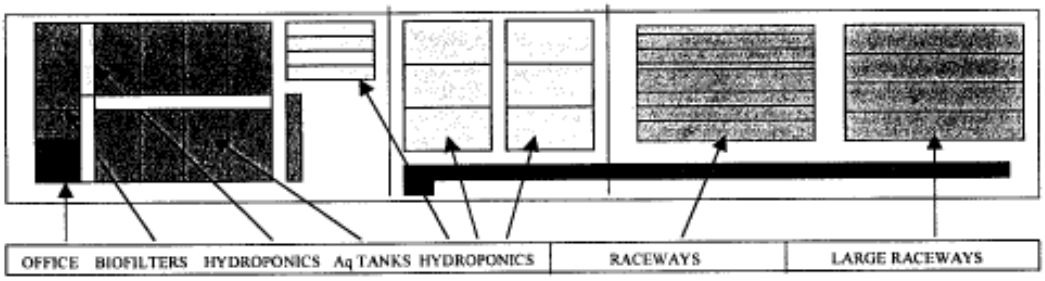
Using a system of high-tech raceways, the IFC provides research and production for species and methods of the future. Raceways and large raceways will be used for high density production of tilapia, eel, and other promising species (such as bass and sturgeon). The system is based on a design (termed "Roanoke" system) developed over the last few years wherein fish are rotated in high-density raceways such that harvest occurs on a regular basis once the system is started. The project is planned for startup in the Spring of 2000.

3.3.3 HYDROPONICS RESEARCH CENTER (HRC)

The HRC occupies a central part of the Complex, but it is also integrated throughout the facility. In hydroponics systems, the return water provides all of the nutrients (nitrogen and phosphorous) and minerals (iron, magnesium, calcium), and dissolved solids necessary for growth. No chemicals, fertilizers, pesticides (except for natural soaps, bacteria, and plant extracts), or fungicides are used in the HRC. Three systems are in production: hydropipes, tray raceways, and ponds. Water is recycled through the hydropipes and the raceways and is returned to the ARC and IFC with considerable reductions in nutrients. The last step for about 3% of the return water is to feed and water the wetlands ponds. These ponds contain cultures of the native wetland plants

pickerelweed and arrowhead, and the saltwater plant red mangrove, for use in wetlands restoration projects. Vegetables and herbs from the hydropipes and raceways are sold fresh to stores and supermarkets, and wetlands plants are sold to nurseries.

Aquaculture Research Center **Intensive Farm Center**



As shown in the above drawing (not to scale), the three components are about equal-sized. The ARC is about 90% complete, the HRC is about 25% complete, and the IFC has not been constructed.

3.3.4 NEW CLASSROOM

As part of the facilities, a new classroom and wet lab facility will be constructed as part of the first floor of the original Davie plant building. This will be air-conditioned and have requisite seating and cabinetry to foster educational opportunities both in terms of lecture and laboratory experiences.

4 PROPOSED AGREEMENT

In a report to the Town of Davie (NSU, August 1999) which gave the status of the ARC, several options for the future of the facility were briefly described. Of these, option 3 was:

Town leases facility and adjacent property to University/private party; that party adds upgrades to ARC to tie in adjacent property operations

While the Town would lose some control of operations, the Town would still be involved with and could share in the benefits of the project.

Positives were identified as

- Financial responsibility, include necessary upgrades, passed on to NSU.
- Lease and/or profit share would add funds to recoup Town's investment.

The following agreement is proposed.

The parties herein represented by Nova Southeastern University (The University) propose an agreement, detailed as follows:

1. The Town shall enter into a long-term lease agreement with Nova Southeastern University, for the facility known as the Aquaculture Research Center and associated lands, for the purpose of aquaculture and hydroponics.

2. Associated lands shall consist of a parking area encompassing Lot 579, and lands encompassing Lots 580-590 (all within the Everglade Land Sales Co. Subdivision, as shown and described on a survey plat dated 1/6/95 by M.E. Berry & Associates, R.L.S.).

3. The lease for this property shall be interest free, for forty (40) years and consist of the following:

   A) Year 1: NSU would pay Davie monthly for electric, phone, and sewer and water for a total of $10,485.31 annually. The University shall utilize its grounds maintenance department to maintain the ARC grounds.

   B) Year 2: NSU would pay Davie as above in 3a and $10,000.

   C) Year 3 and subsequent years: NSU would pay as above in 3b plus would provide a 30% share in the net profit of the ARC Tilapia sales.

4. The lease period shall commence on September 1, 2001, and the current agreement between the Town and NSU shall remain in effect until that time.

5. Prior to commencement of the lease, the Town shall continue to honor and support the existing agreement with Nova Southeastern University; the existing agreement shall become void at the commencement of this lease agreement.

6. The Town shall provide the following as part of this lease agreement:
   a. Emergency electrical supply and maintenance
   b. All existing equipment, machinery, and supplies

7. The University shall provide the following as part of this lease agreement, commencing on the commencement date of the lease:
   a. All salaries and wages of Complex employees
   b. Coordination of all operations, management, marketing, and sales
   c. All equipment, machinery and supplies necessary
   d. All construction associated with Complex as of the date of this agreement
   e. Fiscal management
   f. All insurance

8. The University shall be allowed to begin construction of the Complex, without cost to the Town, and prior to commencement of the agreement, by mutual acceptance of the principles of this proposal by both parties.