



GALLERY SCHEME LOBBY

LUMCON HOUMA | SCHEMATIC DESIGN 03 | 04.26.2019

ESKEW+DUMEZ+RIPPLE ARCHITECTURE. INTERIOR ENVIRONMENTS. URBAN STRATEGIES

## LUMCON's Blue Works

# LUMCON's Blue Works

Bridging STEM and the Oceans

## Introduction

At the intersection of technology and engineering and the most pressing coastal and ocean issues facing Louisiana and the world lies Blue Works. Both a new 27,000 square foot building and a new culture of coastal and marine education and research, Blue Works seeks to renew passion and commitment to ocean and coastal exploration and science. Simply put LUMCON plans a new collaborative technology space of innovation boldly exclaiming a positive message of exploration and discovery.

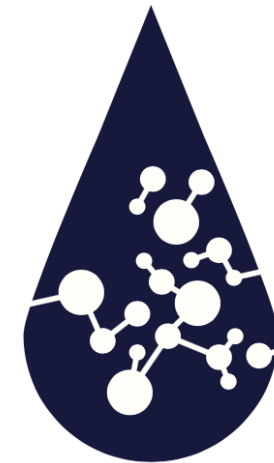
The expansion of LUMCON will better fulfill our mission to connect people, enrich education, and transform science.

**Connect:** The future requires better horizontal collaboration between academia, agencies, and corporations and vertical collaboration between citizens, students, and specialists.

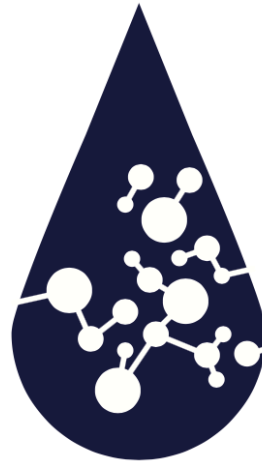
Louisiana's marine and coastal science and engineering expertise across higher education, government, non-profits, and business is unrivaled and can be leveraged. Blue Works provides the physical place and culture for these connections.

**Enrich:** Blue Works embodies LUMCON's mission of open science to engage all those who come through its doors, simply put, make STEM available to everyone. Meeting the technological and engineering challenges of a blue future requires this inclusivity, as well as, training and exciting current and next generation of scientists and engineers. Blue Works will instill a renewed appreciation for the oceans and coasts.

**Transform:** Through inclusivity, passion, and collaboration comes creative and novel ideas. The technological and engineering space and culture at Blue Works allows these innovations to become reality.



**LUMCON'S  
BLUE WORKS**



LUMCON'S  
**BLUE WORKS**

## The Blue Works Mission

Build capacity, knowledge, and passion  
at the intersection of blue science and technology  
to find innovative solutions and  
train the next generation of innovators.

## The Need for Blue Works

The unemployment of the region around LUMCON is consistently higher than the national average. As an example, September of 2017, the unemployment rate in Terrebonne Parish was 5.8%, 5.3% in Lafourche Parish, and 7.9% in St. Mary Parish compared to the national average of 4.2%. In June of 2016, the unemployment rates were 7.8%, 6.9%, and 10.4% when the national average was 5.0%. Although rates in 2019 are much closer to the national average, employment in the region remains volatile.

The downturn of the oil and support industries resulted in severe employment and economic losses. The Houma-Thibodaux area had the nation's fourth-worst economy in 2016. The area also has a higher rate of mortgage delinquencies compared to other regions nationally. This pattern persisted for several years and although rebounding, the economy in the region exhibits a classic boom and bust cycle.

Inspiring students early in the educational pipeline for careers in Blue STEM will ultimately lead to workforce development and economic growth. The mission of Blue Works is to be the first point in this pipeline and provide a regional asset to support other STEM initiatives. Blue Works also seeks to leverage regional expertise in engineering and technology developed out of energy sector to provide coastal and ocean solutions. Blue Works seeks to provide infrastructure and support for coastal and marine science and technology research and education within multi-partner campus that serves as a science and technology incubator.

The Terrebonne Economic Development Authority recently launched a five-year plan —based on a commissioned study—that seeks to strengthen the parish's economy by diversifying beyond the oil industry. Specific recommendations of this plan are well served by Blue Works.

1. Two of the identified areas for economic growth, marine production and support services and coastal restoration, speak directly to Blue Works.
2. A need exists to create a culture, programs, and support infrastructure for entrepreneurship.
3. Efforts need to be devoted to building amenities that would attract and retain talent and that the region works together to strengthen the environment (e.g., coastal restoration) and modernize its infrastructure. The stakeholders would also like to see continued cooperation between industry and higher education institutions to improve training and skill development and to nurture entrepreneurship.

At the state and Gulf Coast scale, Blue Works benefits in many ways. At the core of the vision of this new campus is the adoption of the Board of Regents' Master Plan for Public Postsecondary Education Goal 2: Foster Innovation through Research in Science and

Technology in Louisiana including promoting multidisciplinary and multi-institutional collaborative research efforts. Blue Works also allows Louisiana to secure, maintain, and expand its historically and internationally prominent role in ocean and coastal research both in the Gulf of Mexico and abroad.

## Blue Works Core Values

### **INTERACTION AND VISIBILITY**

LEARNING AND RESEARCH ON DISPLAY,  
TRANSPARENT, AND OPEN

### **FLEXIBILITY**

ADAPTIVE SPACES AND SOLUTIONS

### **SPACE FOR DISCOVERY**

EXPRESSION AND EXCITEMENT ARE EMBODIED  
IN THE BUILDING, EDUCATION, RESEARCH, AND CULTURE

### **RESILIENCY**

BUILDING DURABILITY IN THE MARINE ENVIRONMENT,  
WORKING ON SOLUTIONS FOR MORE RESILIENT COMMUNITIES

### **HIGH PERFORMING**

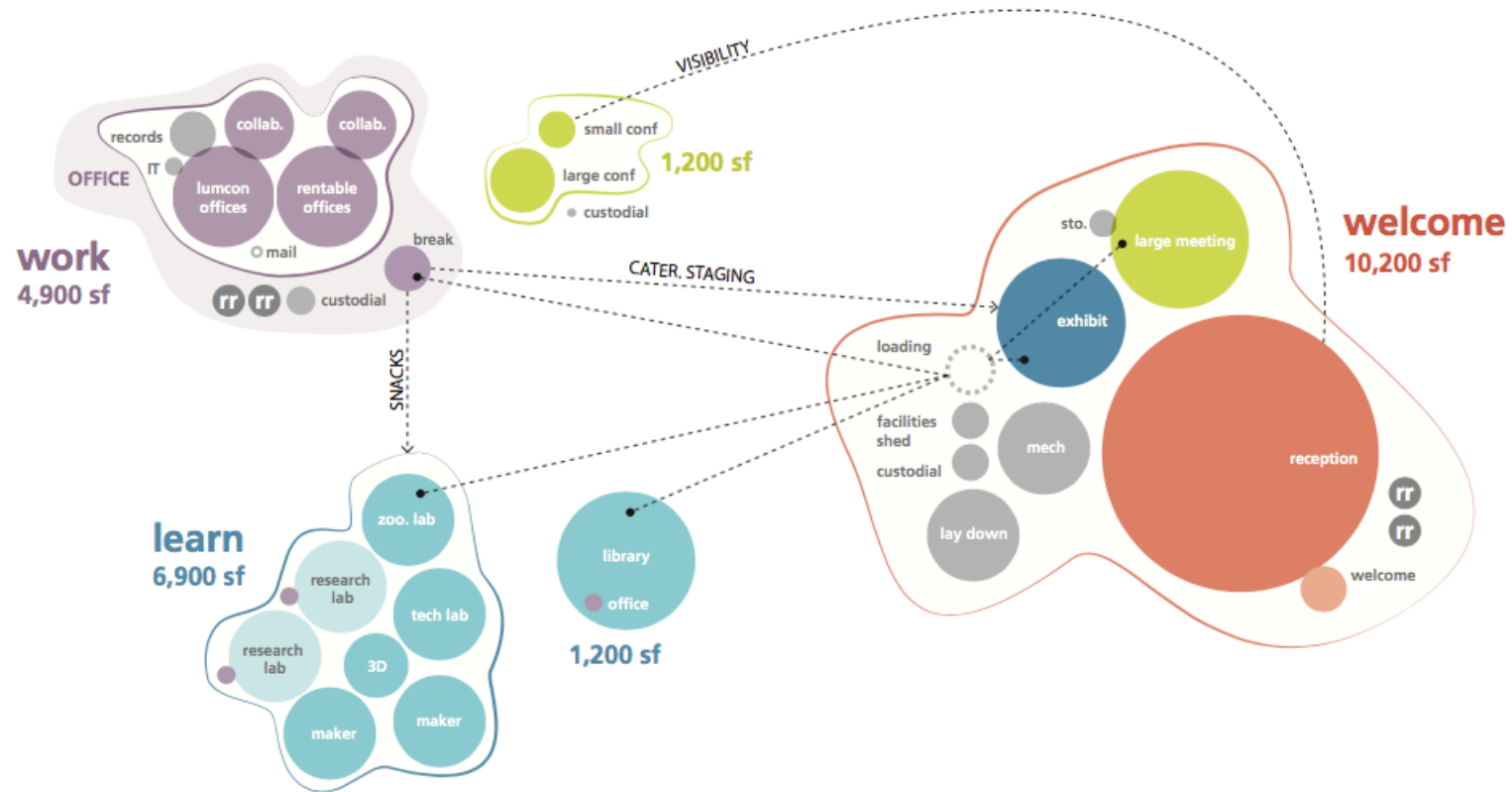
EFFICIENT AND RESPONSIBLE DESIGN,  
HIGH PRODUCTIVITY THROUGH PLAYFULNESS AND COLLABORATION

### **INTEGRATION**

BUILDING, DOCK, AND CAMPUS AS SINGLE UNITY  
HORIZONTAL OF VERTICAL COLLABORATION

### **TO CONNECT, ENRICH, AND TRANSFORM**

A VISIBLE ASSET TO THE  
COMMUNITY, STATE, AND GLOBE



## PROGRAM ADJACENCIES

LUMCON HOUMA | SCHEMATIC DESIGN 03 | 04.26.2019

ESKEW+DUMEZ+RIPPLE ARCHITECTURE, INTERIOR ENVIRONMENTS, URBAN STRATEGIES

## The Building and Spaces

Public access to all the spaces described below is essential to the mission and vision for Blue Works. Blue Works seeks to create a place where people can freely use tools and supplies; to create and invent projects that are personal and unique to them. They are designed to prepare students by providing them personal access to the technologies that will define the future workforce. They are designed to allow researchers access to the technologies that will open their research. These spaces will serve as the center of innovation where students and faculty, both as researchers, develop ideas and bring projects into reality.

Blue Works mission is embodied in a series of spaces including:

### Welcome (10,200 sf)

- Reception and welcome area: The physical introduction to LUMCON and Blue Works that engages all who enter and immediately inspires them
- Exhibit space: From interactive displays of remote operated vehicles and touch screen exhibits to kinetic art and LEGO sculptures, a place to energize and inspire
- Spaces to coalesce and tackle “big questions”
  - Informal Interaction Space: Organic spaces to allow conversation, reflection, and collaboration
  - Large Meeting Room: A place to host seminars, lectures, and meetings to engage and inspire
  - Large Conference Space: Group space for collaboration, synthesis, and catalysis
  - Small Conference Space: Group space for collaboration, synthesis, and work

### Learn (8,400 sf)

- Library: Space to house the most valuable of LUMCON’s collection and to build information at the intersection of coastal and ocean science and engineering/technology
- Zoological Laboratory: A state-of-the art space to preserve vital long-term biological collections as wells as electronically transform them into digital models available for education and research
- Technical Laboratory: Lab for building, troubleshooting, and innovating new electronics, robotics, and computers
- Maker Space 1: Labs for experimentation and innovation for our users, researchers, students, and the public to connect, with marine science in ways they cannot do elsewhere
- Maker Space 2: Labs for experimentation and innovation for our users, researchers, students, and the public to connect, with marine science in ways they cannot do elsewhere



- 3D Print Laboratory: A room containing a bank of 3-D printers allowing education and research ideas to become reality
- Research Laboratory 1: Lab for a LUMCON faculty scientist to conduct research at the intersection of coastal and ocean science and engineering/technology
- Research Laboratory 2: Lab for a LUMCON faculty scientist to conduct research at the intersection of coastal and ocean science and engineering/technology

#### Work (4,900 sf)

- Spaces to allow LUMCON, Consortium, agency, and corporate partners to promote collaboration and synthesis:
  - Office Suite/Collaborative Space 1
  - Office Suite/Collaborative Space 2
  - Records
  - IT

## Programs and Opportunities for Sponsorship

### Reception and Welcome Area

**Program:** As the introduction to LUMCON, the personnel and area provide the first interaction with, and set the initial culture of, Blue Works.

**Mission:** Conveying inclusion, excitement, and awe

**Equipment Cost:** \$9,480.00

**Personnel:** Receptionist (Salary & Fringe: Yr1 \$49,000, Yr2 \$51,450, Yr3 \$54,023, Yr4 \$56,724, Yr5 \$59,560, Total 5yrs: \$270,756)

**Total Year 1:** \$58,480

**Total Years 1-5:** \$280,236

### Exhibit space

**Program:** The exhibit space will be open to the public. The space will be immersion of the technology and culture of Blue Works. Their experiences here will shape and drive their experience at Blue Works. This space will be welcoming, accessible, and able to motivate curiosity about other Blue Works programs and the Blue Works community. The exhibition displays will convey that everyone is welcome, have highly interactive educational displays and exhibits that teach concepts within marine science, showcase marine science technologies, and excite the senses of visitors to Blue Works. The exhibitions will connect to visitors' lives by teaching to different learning styles, responding to cultural and environmental issues as they relate to marine science, and showcasing advances in marine science. The exhibition space can be used for community events, as well as, educational and collaborative spaces.

**Mission:** Inspiring people's creativity and human innovation to advance marine science

**Equipment Cost:** Exhibits, lighting, display signage/monitors, wall and floor coverings, and specialty electrical (\$703,200)

**Personnel:** Curator/Educator (Salary & Fringe: Yr1 \$63,000, Yr2 \$66,150, Yr3 \$69,458, Yr4 \$72,930, Yr5 \$76,577 Total 5yrs: \$348,115)

**Total Year 1:** \$766,200

**Total Years 1-5:** \$1,051,315

### Informal Interaction Spaces:

**Program:** Distributed throughout Blue Works, these spaces will serve as incubators of collaboration, brainstorming, and creativity. They are spaces in which innovation will both achieve its first step and overcome obstacles.

**Mission:** Creating microcosms of collaboration

**Equipment Cost:** \$48,800

**Personnel:** None

**Total Year 1:** \$48,800

**Total Years 1-5:** \$48,800

### The Auditorium

**Program:** More than room of chairs, this is a place to engage with knowledge and blur the line between speaker and audience. This is a place where audiences become part of the latest in innovative blue science.

**Mission:** Inspiring all with words, sound, and images

**Equipment Cost:** \$67,800

**Personnel:** None

**Total Year 1:** \$67,800

**Total Years 1-5:** \$67,800

### Large Conference Space

**Program:** Synthesis requires formal safe spaces where collaboration is culture and networks are facilitated. This is a place for those from diverse disciplines to focus on a major questions and research in marine and coastal science. This is a place to increase the scale and ambition of scientific vision and to define avenues for synthesis.

**Mission:** Synthesizing at a grand scale

**Equipment Cost:** \$57,240

**Personnel:** None

**Total Year 1:** \$57,240

**Total Years 1-5:** \$57,240

### Small Conference Space

**Program:** This is a place for small groups to collaborate intensively to address major questions and collaborate productively.

**Mission:** Moving collective vision into product

**Equipment Cost:** \$24,840

**Personnel:** None

**Total Year 1:** \$57,240

**Total Years 1-5:** \$57,240

## Library

**Program:** The Blue Works library's primary focus is its collection on blue engineering, technology, and innovation. The library will also provide a haven for rare volumes not yet in digital format, a place to preserve knowledge before it is lost. More than just a collection, the library provides the building blocks of knowledge needed for innovation.

**Mission:** Providing the building blocks of knowledge needed for innovation

**Equipment Cost:** \$102,000

**Personnel:** Librarian (Salary & Fringe: Yr1 \$70,000, Yr2 \$73,500, Yr3 \$77,175, Yr4 \$81,034, Yr5 \$85,085 Total 5yrs: \$386,794)

**Total Year 1:** \$172,000

**Total Years 1-5:** \$488,794

## Zoological Laboratory

**Program:** The innovation that life finds in the face of obstacles can inform and inspire technology and engineering. Moreover, the physical specimens are the first step in big data to monitor changing coasts and oceans. The zoological laboratory is the space where biological collections meet the digital age.

**Mission:** Inspiring with the diversity of life

**Equipment Cost:** \$312,000

**Personnel:** Curator (Salary & Fringe: Yr1 \$77,000, Yr2 \$80,850, Yr3 \$84,893, Yr4 \$93,594, Yr5 \$93,594 Total 5yrs: \$425,474)

**Total Year 1:** \$389,000

**Total Years 1-5:** \$737,474

## Technical Laboratory

**Program:** To truly create and innovate, you must have the ability to make components that are unique to a build. Having access to the tools and supplies needed to fabricate components is essential. This lab will be at the center of true innovation and complete creative freedom for visitors. This space will allow for greater flexibility in what Blue Works visitors can create.

This space will be equipped with laser cutters for 2D/3D design and fabrication, 3-D scanners, a high precision milling machine, a vinyl cutter for making flexible circuits and crafts, a large wood routing machine, large format printer, and camera equipment for project documentation.

**Mission:** Allowing ideas to become solid

**Equipment Cost:** \$156,000

**Personnel:** Technician (Salary & Fringe: Yr1 \$77,000, Yr2 \$80,850, Yr3 \$84,893, Yr4 \$93,594, Yr5 \$93,594 Total 5yrs: \$425,474)

**Total Year 1:** \$57,240

**Total Years 1-5:** \$57,240

### 3D Print Laboratory

**Program:** Access to 3-D printing helps prepare students for college and STEM careers by providing relevant skills that make them more competitive in academia and the workforce. 3-D printing can advance scientific research by allowing researchers to build specialized components at relatively low costs and in less time than outsourcing the creation of the needed components.

**Mission:** Allowing ideas to become solid

**Equipment Cost:** \$144,000

**Personnel:** None

**Total Year 1:** \$144,000

**Total Years 1-5:** \$144,000

### Maker Space 1

**Program:** The Maker Lab is a place where people can gather to create, invent, and learn. In this space visitors can design, build, code, test, and display their projects. They will be places for groups to gather and openly share knowledge, designs, and collaborate in ways that is not currently available publically in Louisiana. These spaces can be used for group educational programing that can either be directed or self-directed learning. These spaces can also be used by visitors to work on projects unique to their interests. Regardless of how the spaces are used, they will be spaces where visitors can learn and use technologies, building supplies and components, and equipment they may otherwise not have access to. They can get help from Blue Works employees, visiting researchers, or other visitors with a project they are currently working on or they can start a new project. These spaces will be equipped with electronic workbenches with docking stations for projects builds, prototyping circuits, programming, and testing projects.

**Mission:** Creating, inventing, and learning by all

**Equipment Cost:** \$132,780

**Personnel:** Educator (Salary & Fringe: Yr1 \$70,000, Yr2 \$73,500, Yr3 \$77,175, Yr4 \$81,034, Yr5 \$85,085 Total 5yrs: \$386,794)

**Total Year 1:** \$202,780

**Total Years 1-5:** \$519,574

## Maker Space 2

**Program:** See Maker Space 1

**Mission:** See Maker Space 1

**Equipment Cost:** \$132,780

**Personnel:** Educator (Salary & Fringe: Yr1 \$70,000, Yr2 \$73,500, Yr3 \$77,175, Yr4 \$81,034, Yr5 \$85,085 Total 5yrs: \$386,794)

**Total Year 1:** \$202,780

**Total Years 1-5:** \$519,574

## Research Laboratory 1

**Program:** The intellectual anchor of the Blue Works, this space provides an area for a new generation of scientist. Research here is led by a faculty member, but anyone crossing the lab threshold becomes a team member, working at the intersection of disciplines applying technology to address the most pressing issues of coastal and ocean ecosystems. The space and scientist contained within embody the culture of Blue Works and LUMCON to connect, enrich, and transform.

**Mission:** Producing transformative results at the intersection at science and technology

**Equipment Cost:** \$300,000

**Personnel:** Assistant Professor (Salary & Fringe: Yr1 \$109,200, Yr2 \$114,660, Yr3 \$120,393, Yr4 \$126,413, Yr5 \$132,733 Total 5yrs: \$603,399)

**Total Year 1:** \$409,200

**Total Years 1-5:** \$758,117

## Research Laboratory 2

**Program:** See Research Laboratory 1

**Mission:** See Research Laboratory 1

**Equipment Cost:** \$540,000

**Personnel:** Assistant Professor (Salary & Fringe: Yr1 \$137,200, Yr2 \$144,060, Yr3 \$151,263, Yr4 \$158,826, Yr5 \$166,767 Total 5yrs: \$758,117)

**Total Year 1:** \$677,200

**Total Years 1-5:** \$1,298,117

### Office Suite/Collaborative Space 1

**Program:** The excel Blue Works requires a support core vital for the realization of the mission.

**Mission:** Supporting with service to mission

**Equipment Cost:** \$93,230

**Personnel:** Accountant (Salary & Fringe: Yr1 \$70,000, Yr2 \$73,500, Yr3 \$77,175, Yr4 \$81,034, Yr5 \$85,085 Total 5yrs: \$386,794)

Assistant Accountant (Salary & Fringe: Yr1 \$63,000, Yr2 \$66,150, Yr3 \$69,458, Yr4 \$72,930, Yr5 \$76,577 Total 5yrs: \$348,115)

Sponsored Programs Officer (Salary & Fringe: Yr1 \$63,000, Yr2 \$66,150, Yr3 \$69,458, Yr4 \$72,930, Yr5 \$76,577 Total 5yrs: \$348,115)

**Total Year 1:** \$289,230

**Total Years 1-5:** \$1,176,254

### Office Suite/Collaborative Space 2

**Program:** This is a space for state, federal, academic, and business partners to take residence and share in the Blue Works mission.

**Mission:** Bringing cool people to do cooling things to Blue Works

**Equipment Cost:** \$132,780

**Personnel:** None

**Total Year 1:** \$52,358

**Total Years 1-5:** \$52,358

### Records

**Program:** It is not glorious, but paperwork has to go somewhere.

**Mission:** Putting paper in its place

**Equipment Cost:** \$32,220

**Personnel:** None

**Total Year 1:** \$32,220

**Total Years 1-5:** \$32,220

### Information Technology

**Program:** I.T. will be the most essential support component in Blue Works. It will allow not only internet access throughout the whole building, but it will also enable various spaces (3D Printing, Maker Spaces, and Robotics) to communicate with each other. Finally, it will be the "brains" of what will be a Command and Control Center for LUMCON administrative personnel during times of degraded coastal weather conditions, allowing real-time monitoring of the DeFelice Marine Center before, during, and immediately after tropical storms have impacted the Louisiana coastline.

**Mission:** Transferring and sharing blue digital knowledge

**Equipment Cost:** \$96,000

**Personnel:** IT Specialist (Salary & Fringe: Yr1 \$70,000, Yr2 \$73,500, Yr3 \$77,175, Yr4 \$81,034, Yr5 \$85,085 Total 5yrs: \$386,794)

**Total Year 1:** \$166,000

**Total Years 1-5:** \$482,794

### Facilities

**Program:** The mission and culture of Blue Works is dependent on the building itself. The function and maintenance of this icon sets the stage. Facilities in both staff and space are the guardians of Blue Works.

**Mission:** Preserving and guarding Blue Works

**Equipment Cost:** \$96,000

**Personnel:** Custodian (Salary & Fringe: Yr1 \$49,000, Yr2 \$51,450, Yr3 \$54,023, Yr4 \$56,724, Yr5 \$59,560 Total 5yrs: \$270,756)  
Maintenance (Salary & Fringe: Yr1 \$56,000, Yr2 \$58,800, Yr3 \$61,740, Yr4 \$64,827, Yr5 \$68,068 Total 5yrs: \$309,435)

**Total Year 1:** \$185,400

**Total Years 1-5:** \$660,591



## Overall Budget for Blue Works

Salaries					
Total Yr1	Total Yr2	Total Yr3	Total Yr4	Total Yr5	5yr Total
\$1,093,400	\$1,148,070	\$1,205,474	\$1,265,747	\$1,329,035	\$6,041,725
Total FFE					
\$3,036,329					
Operation (Utilities & Security) Cost					
Total Yr1	Total Yr2	Total Yr3	Total Yr4	Total Yr5	5yr Total
\$215,000	\$225,750	\$237,038	\$248,889	\$261,334	\$1,188,011
Operation Cost and Salary					
Total Yr1	Total Yr2	Total Yr3	Total Yr4	Total Yr5	5yr Total
\$1,308,400	\$1,373,820	\$1,442,511	\$1,514,637	\$1,590,368	\$7,229,736
5 Year Total Cost					
\$10,266,065					