

GREENFIELD LAKE
ENVIRONMENTAL EDUCATION
PROJECT PLAN

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FALL 2007

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EXECUTIVE SUMMARY

Environmental education, advocacy and action are the three mission objectives Cape Fear River Watch, Inc. Founded in 1993, this organization one of the oldest environmental organizations in the lower Cape Fear area and has three full time staff who serve a large membership of volunteers and ecological minded citizens. Their programs revolve around action, advocacy and education.

The epicenter of their activity is Greenfield Lake, a historic and diverse eco-system located near downtown Wilmington. This 90 acre lake is a city and state park with amenities including a walking / biking path, amphitheater, and paddle boat rental. An organization wants a formal environmental education program at Greenfield lake.

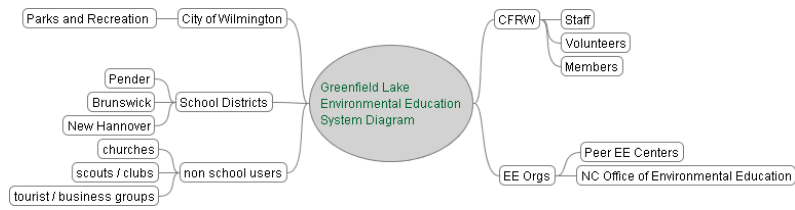
Currently, there is an educational program in place at the lake led by Joe Abbate, the naturalist and Greenfield Lake coordinator. This program serves the needs of primary and secondary school groups in New Hanover, Pender, and Brunswick counties. The current program is underfunded and unable to meet the demand of local school districts, which must schedule time at the few centers in the area or simply do without.

With the recent acquisition of grant money, CFRW wants to revamp the environmental education program at Greenfield Lake to provide the local school districts a quality educational experience on par with other environmental education centers in the region. This new education program will include a station based system where the classes are broken up into three to seven venues according to learning objective, such as wetland plants and animals, water quality, and water exploration. Each station has its own lesson plan that follows the philosophy of inquiry based, environmental education, and each station has tactile teaching aids that encourage learners to use their senses as they explore and expand their knowledge guided by a trained and capable staff person at all times.

Safety is a primary concern for the program which includes several safety briefings, orientations, and contingency plans in the event of an accident.

The objectives are to essentially pool and share resources among the area schools for outdoor environmental education. This type of outsourcing has already taken hold in the private sector and requires the work of an external agency (such as CFRW) to organize and promote such a project for the school districts. This would ensure that area students have access to environmental education.

System Diagram



PROJECT SCOPE

Problem Statement

Primary and secondary students in the Wilmington area need an outdoor education center in closer proximity to schools. Currently, students must travel 20 miles or more to receive quality outdoor education programs. These programs are costly in terms of time and expense.

Greenfield Lake is a city park managed for educational purposes by Cape Fear Riverwatch (CFRW), a nonprofit organization. CFRW currently runs programs in the area but these are not formalized and require an organized implementation to expand the effectiveness and usefulness of the park for schools in the area.

Problem	Cause
Students don't have a sense and understanding of natural ecosystems which is developed from participation in quality environmental education programs.	Schools in Wilmington don't have funding or time to travel to environmental programs outside of the city.
Solution	Outcomes
Creating an EE program at GFL will provide a low cost alternative EE program at GFL lake which respects the users time and address the need for students to understand the natural environment.	Students have a renewed sense of the natural world and interest in the natural sciences.

One solution for solving this problem is to create an organized environmental education program conducted at GFL managed by CFRW in support of all Wilmington area schools. This would allow schools to more easily meet the need of an environmental education program. Close integration with area schools would allow the schools to essentially outsource those educational objectives to the EE program. The benefit would be to all those involved as it would be a city asset put to good use, lowers the dependence on individual school resources, and raises the quality of outdoor education in the area. The outcome is more involved students, happier teachers, and a city wide quality of life asset.

Information Gathering

In order to provide a quality, integrated program, information about the need and specifications must be researched and correlated. Below is a list of Who and What about the needed information

What	Who	How
The format and scope of EE programs	CFRW staff and volunteers Other peer programs in the state Award winning programs nationwide	Conduct interviews with principles from other programs Conduct market research
The needs and specifications for interface between the program and the school system users	Teachers and administrators of schools currently using EE programs Teachers and administrators of schools currently NOT using EE programs or providing programs 'in house'	Interviews Internet survey

PROJECT OBJECTIVES

Delivery Strategies

The program will be conducted on the grounds of GFL. There will be several stations where the facilitator will guide the students to specific objectives. The location will determine the objectives. Students will stay at the station for an amount of time and then move to the next station. The program will be in accordance with common best practices of EE programs as determined by the information gathering stage and leverage the GFL venue.

Each station will have set objectives, scripted questions, and materials.

Deliverables

Administrative:	Operational:
Market research form	Large map of GFL with Station map
Potential user database	Instructor 'lesson plan' for each station
Internet survey	Instructor material for each station
Awareness material	Instructor handbook guide
Reporting information sheet	Safety card

Benefits:

The benefits of a quality EE program in the center of Wilmington are that more students will have access to deeper understanding of the natural world which promotes engagement in classroom subjects and decreases discipline and engagement problems.

Budget:

The cost should not exceed \$1000 dollars to conduct the first course. However, the program will be structured such that budget may increase without changing the scope.

PROJECT SPECIFICATIONS

Description of the training

The teachers will contact CFRW to plan a time for the training at least two weeks in advance. They will receive the necessary pre-requisite material including: permission slips, awareness materials, driving directions, and program and safety overview. The teacher and the instructor or CFRW representative will decide on the length of the program and what objectives / stations will be covered. This will ensure that the teachers and students are ready for their experience at GFL

Once the learners and teachers arrive on site, the instructor and at least one CFRW staff will greet them. The staff person will give a logistics talk that includes introductions, a safety briefing, and a headcount. After the logistics are accounted for, the instructor gives an orientation talk. This talk is to set the ground rules and make sure the student understand what is expected of them during the training. During the orientation students learn an overview of the lake environment such that any station they attend will be in context.

During this greeting, the staff person and instructor use a materials and training aids (such as maps, live wildlife, etc.) to engage the students and entice focused involvement in the days activities.

Next, the instructor takes the whole group or, if there are multiple instructors, portions of the whole to individual stations. For a list of all stations, please see the appendix.

At each station, the instructor reminds the students of specific safety concerns and introduces the learning objectives for that station. At each station, the instructor has a 'lesson plan' that includes a detailed materials list, scripted questions, time schedule, background references (for teacher preparation). Also, they have teaching aids (such as field glasses, magnifying glasses, fishing equipment, underwater viewers, laminated information cards, etc.)

Each station will have hands on activities, PBL activities, games, and etc according to the instructor's preference

CONSTRAINTS

Constraints:	Implications:
<p>This training must be conducted at the GFL venue and be tailored for outdoor instruction following best practices of experiential, discovery, outdoor, environmental education in order to be competitive with regional EE programs</p>	<p>CFRW will need to conduct market research in environmental education programs in order to match or exceed their quality.</p> <p>All material must be tested and durable to survive the outdoor environment.</p>
<p>This training must be at least partially operational within a budget of \$1000. New funds are expected as fundraising increases.</p>	<p>The program will be designed to scale as funds increase.</p> <p>The program will be developed ‘in-house’ and with the assistance of volunteers from the membership and community.</p>
<p>CFRW has only two paid staff members. These two people will be responsible for the implementation of this plan.</p>	<p>Volunteers will be utilized to assist in planning, developing, and implementing the program.</p>

ALTERNATIVE ANALYSIS

Alternative Analysis #1	Constraints
CFRW could contract an established EE organization to implement the program at GFL	<p>This solution would require more funds than are currently available.</p> <p>Further, the community based, volunteer supported nature of this plan is aligned to the philosophy of the CFRW.</p>
CFRW could hire new full staff to implement the program at GFL.	This would require more funds than are currently available and add administrative overhead that comes with another full time employee.
CFRW could provide self service materials for teachers to conduct EE at GFL.	This solution would not meet the requirements of the school districts. A professionally trained environmental educator will meet the objectives and requirements for school districts.

DEVELOPMENT TEAM AND POSITION DESCRIPTION

Project Manager (CFRW staff)

- Responsible for:
- Selecting and supervising the project team members
 - Designing the scope and work breakdown structure
 - Working within the budget
 - Ensuring quality at each stage of the project

Subject Matter Expert – Environmental Education (CFRW staff or Volunteer)

- Responsible for:
- Ensuring the educational content of each station is in accordance with EE doctrine and best practices
 - Designing and developing station activities and lesson plans in accordance to the to the policies of CFRW

Instructional Designer (Volunteer)

- Responsible for:
- Conducting front end analysis and information gather activities
 - Designing and developing training aids for the stations
 - Designing and developing document templates of the project including:
 - Letterhead and form letters
 - Training material lesson plans
 - Group manifest templates
 - Designing instructor guides and student materials

Environmental Educator – (CFRW staff, volunteer)

- Responsible for:
- Delivering training using the lesson plan
 - Assisting with the design and development of all course materials

School Liaison and Awareness coordinator – (CFRW staff, volunteer)

- Responsible for:
- Champion the project and the idea of EE in order to educate the public about the need for and benefits of EE
 - Interface with the schools and community in order to generate interest and users for the program
 - Assist in the design and development of awareness materials

External Environmental Education Program evaluator

- Responsible for:
- Summatively evaluating the program for possible accreditation or inclusion in an larger organization

BUDGET ESTIMATE

Expense	Amount	Total
Project Manager		
Subject matter experts	\$100 / day	\$200
Instructional Designers	\$100 / day	\$200
Environmental Educator	\$50 / training day	\$50
School Liaison and Awareness coordinator	\$25 / presentation	\$25
Personnel Total		
Materials		
Environmental Educator's guides	\$10 / guide	\$30
Printing services (awareness material, documentation, etc.) including laminating	Included in CFRW budget	\$0

Learning aids	Included in the environment around GFL	\$0
Materials total		\$
Locations		
GFL	Included in the city of Wilmington charter with CFRW	\$0
Locations total		\$0
Summative Evaluation		
Evaluation of instructor guides	\$0 (volunteer user testing)	\$0
Evaluation of training program	Varies based on organization	Variable
Evaluation total		\$
Total Budget estimate		\$

FORMATIVE EVALUATION PROCEDURE

Formative evaluations will be conducted twice during the development of the program; first after the completion of each station's material and then during a 'dress rehearsal' two weeks before actual learners and introduced to the program. The purpose of a formative evaluation is to gather feedback for improvement of the materials.

- The project manager, and the trainer will conduct a one on one, 'user testing' evaluation with volunteers for each station.
- A full 'dress rehearsal' will be conducted using small groups of volunteers as the student population.

The feedback from both stages will be used to make final changes to the material before the opening of the program.

SUMMATIVE EVALUATION PROCEDURE

Summative Evaluations will be conducted after 6 months or 10 training sessions, whichever comes first. The purpose of the summative evaluation is to judge whether or not the program met the requirements and specifications of this plan.

- During a live session with actual learners, the entire implementation of the program will be evaluated on the basis of environmental learning theory and state objectives.
- Participants will receive a questionnaire type survey to evaluate the programs perceived effectiveness.

About accreditation, environmental organizations can evaluate the program for inclusion in a larger organization of environmental education programs. The evaluation benchmark would be inclusion in a larger organization of environmental organizations. The desire for this will be determined after one year of operation.

RISK MANAGEMENT

Risk#1 Scheduling

Condition:				
Consequence:				
Probability:	probability	Medium	High	Extreme
		Low	Medium	High
		Minimal	Low	Medium
		Severity of Consequence		
Response:				

Risk#2 Non-adoption by the community

Condition:				
Consequence:				

Probability:	probability	Medium	High	Extreme
		Low	Medium	High
		Minimal	Low	Medium
	Severity of Consequence			
Response:				

Risk#3 Program doesn't meet standards of quality for EE program

Condition:				
Consequence:				
Probability:	probability	Medium	High	Extreme
		Low	Medium	High
		Minimal	Low	Medium
	Severity of Consequence			
Response:				

PROJECT WORK

Deliverables:

The project deliverables will include:

Administrative:

- Market research form – A form used to collect detailed, systematic information about the current options for EE programs to our target market
- Potential user database – A list of the school's contact information in the target market. This database should be handled like a sales contact management list.
- Internet survey – An information gathering tool to discover the specific needs of the target market

- Awareness material – promotional / information material for the target market with the purpose of enticing interest and use of the program.
- Reporting information sheet – to collect information about the program users in order to determine use and success of the program. This would include details about the number of students and teacher per session and school involved

Operational:

- Large map of GFL with Station map – A map of GFL with the stations and their objective clearly marked.
- Instructor ‘lesson plan’ for each station – Detailed materials list, scripted questions, time schedule, background references (for teacher preparation)
- Instructor material for each station – Detailed materials list, teaching aids, laminated photographs,
- Instructor handbook guide – for use by the instructors,
 - An overview of the program
 - philosophical foundations of EE programs to understand how to handle unexpected situations
- Safety card – a information card to be carried by all instructors that has the emergency contact information for the school and safety contingencies.

Major Milestones:

Milestone	Estimated Completion Date
Kick off meeting – In this meeting, team members will be introduced and project goals, communication plans, and schedule will be discussed and agreed upon.	
Complete Station Layout map and course summary	
Complete Station lesson plans	
Complete Environmental Educator handbook	
Complete Awareness materials	

Complete formative evaluations	
Revise and finalize all materials	
Conduct first session of the GFL Environmental Education program	
Complete Summative Evaluation	

Communication Plan:

Execution of this plan will take approximately 6 months. During that time there will be 6 meetings of the team. Not every member will be required to attend, but time will be set aside during the ‘first Saturday meeting’ which is held every month for members of CFRW.

Outside of meetings, the project manager will facilitate the communications among team members with email and a shared document on Zoho. This shared document will have a task list with team member assignments. This will allow all team members to be aware of the status of the project at any given moment.