

Technology Plan

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Introduction

The purpose of the "Ask the Expert" program is to use e-technology to provide a voice for conservation and education between Aquarium staff, educators and students that reaches beyond the Aquarium's and schools' walls. This implementation utilizes the Unfreeze/Change/Refreeze model due to its basis that, in order to make a change within an organization, the organization's current way of thinking and mode of operation must first be set aside, or unfrozen. At that point, the change and implementation of the technology plan may occur. After implementation, the organization may once again be up and running, only under its new way of thinking and mode of operation.

The "Ask the Expert" program has two (2) main goals: 1) Increase access to the Aquarium through live, on-line interaction, and 2) Improve students' attitudes toward science and increase students' interest in the science fields. Secondary goals include reaching a higher-level target audience to include high school students; creating interaction between behind-the-scenes animal expert personnel with school visitors; and expand on-line topics from sea turtles in Phase I to animal husbandry and aquarium tank maintenance in Phases II and III. To achieve these goals, the Aquarium will collaborate with local test schools to create an e-program that integrates with the schools' curriculum. The implementation of this program supports the National Education Technology Plan's initiative to provide every student access to e-learning and enable every teacher to participate in e-learning training.

According to the No Child Left Behind (NCLB) initiative, research has shown that, when it comes to science, "The longer students stay in the current system the worse they do. According to the 1995 Third International Mathematics and Science Study, U.S. fourth graders ranked second. By twelfth grade, they fell to 16th, behind nearly every industrialized rival and ahead of only Cyprus and South Africa." NCLB rallies every sector of society to work with schools to increase science excellence. Schools will improve achievement by partnerships with businesses, science centers, museums, and community organizations (See [Exhibit 14](#)).

The North Carolina Aquarium at Fort Fisher is one of three aquarium facilities in North Carolina. The purpose of the Aquariums is to inspire appreciation and conservation of North Carolina's aquatic environments. Last year, the North Carolina Aquariums educated over one million visitors.

The North Carolina Aquariums are a division of the North Carolina Department of Environment and Natural Resources (DENR) and accredited by the American Zoo and Aquarium Association (AZA). The Aquariums began operation as marine resource centers in 1976. They became public aquariums in 1986, and they are governed by the North Carolina Aquariums staff located in Raleigh, NC. Each independent location has its own operating budget. The Aquariums have completed expansion of two facilities,

Roanoke Island and Fort Fisher, and they are in the process of expanding Pine Knoll Shores.

The NC Aquarium at Fort Fisher provides two functions: (1) Education of the public through live exhibits, lectures, and support videos, and (2) Marine conservation and research. Publicized, visual features and functions of the Aquarium generate most of the visitors. Few visitors know the work that goes on behind the scenes at the Aquarium in the fields of marine biology research.

Staff at Fort Fisher Aquarium realizes their audience is predominantly parents, young children (K-8) and senior citizens. The Aquarium has expressed a desire to consider new promotional methods that will be more attractive to upper high school, undergraduate, and graduate classes. They want to inform these groups of the challenging activities at the Aquarium and to create a desire to be a part of a new learning experience.

Joanne Harcke, Conservation and Research Coordinator at the Fort Fisher Aquarium, has an active grant to study the biology, migration patterns, and post-release survival of rehabilitated loggerhead turtles. Prior to release, each turtle receives a tagged identification. Interested parties can find reports regarding the sea turtle project and the tagged turtles on the Turtle Trails Web site.

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Mission Statement

Using e-technology, we seek to provide a voice for conservation and education between Aquarium staff, educators, and students that reaches beyond the Aquarium and schools' walls.

Vision and Goals

Conservation and education is an ever-changing field. Technology provides the best resource for Aquarium staff to share developments and discoveries with educators and students. The North Carolina Aquarium at Ft. Fisher's live chat Web platform is the best way for knowledge to be spread because of its unique ability to reach outside of the Aquarium's and classrooms' walls.

The live chat Web platform provides an environment that will:

- Provide access to Aquarium personnel whose work is typically behind the scenes. Their work and perspective is not available to students who visit the Aquarium on a standard self-guided tour.
- Allow students to engage in dialogues with staff who strive to serve as role models for future marine scientists.
- Allow students to gain a perspective from a working specialist in the field of environmental marine research.
- Discuss topics and issues that are important to both Aquarium staff and students.
- Reach groups that are unable, due to distance or time, to visit the Aquarium but who have an interest in the research and topics that the Aquarium continues to develop.
- Reach groups from around the world that has an interest in and can benefit from the Aquarium's work in research and conservation.
- Create a real-time, virtual learning experience for both students and Aquarium staff.

- Reassure both Aquarium staff and students that their discussions are private and secure with no outside access unless permission is given.
- Archive dialogues for reference in developing future programs, presentations, and chats with the same or different groups.

The live chat Web platform technology will provide the Aquarium staff a unique opportunity to address students on a level of learning and understanding that is currently not met by general, on-site programs. Aquarium personnel will manage the technology while the staff expert presents the material they have prepared, responds to questions, and guides the discussion. This technology provides an information outlet that will allow the Aquarium to easily reach outside of its walls and fulfill its mission while also serving as a leader and model in the field of environmental education and conservation.

Goal 1: Increase access to the Aquarium through live, on-line interaction.

Goal 2: Improve students' attitudes toward science.

Goal 3: Increase students' interest in the science fields.

Output:

- The Aquarium will have the necessary software to implement the change.
- The behind-the-scenes animal experts will interact with virtual school visitors.
- The Aquarium will reach a higher-level target audience.
- Key Aquarium staff will have training and support to implement the change.

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Implementation Plan

The implementation of the "Ask the Expert" program will occur in three (3) phases, each of which will take place over the course of a calendar year. Phase I, the trial phase, will focus in its entirety on the loggerhead turtle conservation efforts. Joanne Harcke will work with Sandi Celceski of Ashley High School to identify topics, themes, and issues that they wish to highlight in live chats. Sandi's Oceanography class will be the test group. A second group will be invited to participate no later than three (3) months into the program. The two subsequent phases will follow suit in the following two years, each starting with a test group and later inviting a second group to participate.

To preserve the credibility of the program, evaluation parameters have been established. These parameters, in the form of benchmarks and measures, will help redefine the goals and activities for Phases II and III as necessary (See [Exhibit 15](#)).

Goals & Benchmarks	Description of Strategies/Activities to Achieve Goals & Benchmarks	Timeline (Projected Date of Achievement)
Phase I: Turtle Conservation: January - December 2006		

<p>Fort Fisher Aquarium increases access through live, on-line interaction regarding loggerhead turtle conservation.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 5/31/2006, five (5) sessions completed • By 12/31/2006, eighteen (18) sessions completed. 	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software. 	End of October 2005
	<ul style="list-style-type: none"> • Training materials distributed for key Aquarium staff on DENR Internet policy (netiquette) 	End of October 2005
	<ul style="list-style-type: none"> • Organize and facilitate collaboration meetings between key Aquarium staff and test school on processes (scheduling, creating usernames, follow-up/evaluation, etc.) 	End of November 2005
	<ul style="list-style-type: none"> • Organize and facilitate collaboration meetings between animal expert and test school teacher on content to be delivered 	End of November 2005
	<ul style="list-style-type: none"> • Conduct a test of online sessions between Aquarium and test school 	Mid-December 2005
<p>Online interaction improves student attitudes toward science and increases student interest in the science fields.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 11/30/2005, a loggerhead turtle conservation program has been fully developed that meets the five core propositions of the National Teaching Standards while meeting the curriculum standards for Oceanography • By 12/31/2006, student evaluations have been received that will record student reactions to the program 	<ul style="list-style-type: none"> • Aquarium staff develops basic information on sea turtle project to be supplied to teachers/students prior to live chats 	End of September 2005
	<ul style="list-style-type: none"> • Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 	End of October 2005

	<ul style="list-style-type: none"> • Aquarium staff and teachers rework any problems that may have been identified. Final project is completed and ready for student interaction 	End of November 2005
Animal expert personnel is available for live, online chats to interact with school visitors.	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software 	End of October 2005
Benchmark: <ul style="list-style-type: none"> • By 1/1/2006, one (1) animal expert is trained, proficient, and participating in the live, online sessions 	<ul style="list-style-type: none"> • Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 	End of October 2005
	<ul style="list-style-type: none"> • Test online sessions between Aquarium and test school 	Mid-December 2005
<p>The Aquarium reaches a higher level target audience of high school students.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 1/1/2006, one (1) high school class is participating • By 3/31/2006, two (2) high school classes are participating 	<ul style="list-style-type: none"> • Aquarium advertises for a second test school. One school will have active involvement in the development of the online program. The second test school will simply participate in the program with no input for content 	End of January 2006

<p>Key Aquarium staff who will be users of the DigiChat software are qualified in computer applications including the DigiChat software.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 10/31/2005, eight (8) key Aquarium staff trained in DigiChat software • By 10/31/2006, four (4) key Aquarium staff qualified to participate in live, online sessions 	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software 	<p>End of October 2005</p>
<p>Key Aquarium staff who will be users of the DigiChat software are trained in DENR Internet policy (netiquette).</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 10/31/2005, all eight (8) key Aquarium staff are trained in DENR Internet policy (netiquette) 	<ul style="list-style-type: none"> • Informational material for key Aquarium staff on DENR Internet policy (netiquette) 	<p>End of October 2005</p>
<p>DigiChat software is ready for live, online interaction.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 1/1/2006, software is installed, tested and operational for live, online sessions 	<ul style="list-style-type: none"> • Software is purchased 	<p>First of October 2005</p>
	<ul style="list-style-type: none"> • Software is installed 	<p>Mid-October 2005</p>
	<ul style="list-style-type: none"> • Software is tested 	<p>End of October 2005</p>
	<ul style="list-style-type: none"> • Test on-line sessions between Aquarium and test school. 	<p>Mid-December 2005</p>

<p>User database is created and operational.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 1/1/2006, user database is ready for user information to be input 	<ul style="list-style-type: none"> Establish needs and goals of database 	End of October 2005
	<ul style="list-style-type: none"> Meet with database creator to communicate needs and goals of database 	First of November 2005
	<ul style="list-style-type: none"> Finalize database 	First of December 2005
<p>Animal experts and moderators use low-risk equipment to ensure reliable chat sessions.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 11/1/2005, systems are purchased By 12/1/2005, systems are tested By 1/1/2006, systems are in place 	<ul style="list-style-type: none"> Purchase systems 	First of November 2005
	<ul style="list-style-type: none"> Test systems 	First of December 2005
	<ul style="list-style-type: none"> Place systems into operational status 	First of January 2006
<p>Technical support is readily available for all concerned parties.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 1/1/2006, DigiChat service agreement is purchased and in place By 1/1/2006, Aquarium Helpdesk process is agreed upon By 1/1/2006, school Helpdesk process is in place 	<ul style="list-style-type: none"> Review service agreement which is included with managed host software 	First of December 2005

Goals & Benchmarks	Description of Strategies/Activities to Achieve Goals & Benchmarks	Timeline (Projected Date of Achievement)
Phase II: Add Animal Husbandry: January - December 2007		
<p>Fort Fisher Aquarium increases access through live, online interaction regarding loggerhead turtle conservation and animal husbandry.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 5/31/2007, seventeen (17) sessions completed • By 12/31/2007, twenty-eight (28) sessions completed 	<ul style="list-style-type: none"> • Training classes for key Aquarium animal husbandry staff on DigiChat software 	End of October 2006
	<ul style="list-style-type: none"> • Training materials distributed for key Aquarium animal husbandry staff on DENR Internet policy (netiquette) 	End of October 2006
<p>Online interaction improves student attitudes toward science and increases student interest in the science fields.</p> <p>Benchmark:</p>	<ul style="list-style-type: none"> • Aquarium staff develops basic information on animal husbandry project to be supplied to teachers/ students prior to live chats 	End of September 2006
<ul style="list-style-type: none"> • By 11/30/2006, an animal husbandry program that meets the five core propositions of the National Teaching Standards while meeting the curriculum standards for 	<ul style="list-style-type: none"> • Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 	End of October 2006

<p>Oceanography has been fully developed</p> <ul style="list-style-type: none"> By 12/31/2007, student evaluations have been received that will record student reactions to the program 	<ul style="list-style-type: none"> Aquarium staff and teachers rework any problems that may have been identified. Final project is completed and ready for student interaction 	<p>End of November 2006</p>
<p>Additional animal expert personnel is available for live, online chats to interact with school visitors.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 1/1/2007, one (1) additional animal expert is trained, proficient, and participating in the live, online sessions. 	<ul style="list-style-type: none"> Training classes for key Aquarium staff on DigiChat software 	<p>End of October 2006</p>
	<ul style="list-style-type: none"> Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 	<p>End of October 2006</p>
<p>The Aquarium continues to reach a higher level target audience of high school students.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 1/1/2007, one (1) additional high school class is participating By 3/31/2007, two (2) additional high school classes are participating 	<ul style="list-style-type: none"> Aquarium advertises for a second test school. One school will have active involvement in the development of the online program. The second test school will simply participate in the program with no input for content 	<p>Mid-December 2006</p> <p>End of January 2007</p>

<p>Key Aquarium animal husbandry staff who will be users of the DigiChat software are qualified in computer applications including the DigiChat software.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 10/31/2006, three (3) additional key Aquarium staff trained in DigiChat software • By 10/31/2006, three (3) additional key Aquarium staff qualified to participate in live, online sessions 	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software. 	<p>End of October 2006</p>
<p>Key Aquarium animal husbandry staff who will be users of the DigiChat software are trained in DENR Internet policy (netiquette).</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 10/31/2006, all three (3) additional key Aquarium staff are trained in DENR Internet policy (netiquette) 	<ul style="list-style-type: none"> • Informational material for key Aquarium staff on DENR Internet policy (netiquette). 	<p>End of October 2006</p>

<p>Additional animal experts and moderators use low-risk equipment to ensure reliable chat sessions.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 11/1/2006, systems are purchased • By 12/1/2006, systems are tested • By 1/1/2007, systems are in place 	<ul style="list-style-type: none"> • Purchase systems 	First of November 2006
	<ul style="list-style-type: none"> • Test systems 	First of December 2006
	<ul style="list-style-type: none"> • Place systems into operational status 	First of January 2007

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Goals & Benchmarks	Description of Strategies/Activities to Achieve Goals & Benchmarks	Timeline (Projected Date of Achievement)
Phase III: Add Aquarium Tank Maintenance: January - December 2008		
<p>Fort Fisher Aquarium increases access through live, online interaction regarding loggerhead turtle conservation, animal husbandry and aquarium tank maintenance.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 5/31/2008, twenty-nine (29) sessions completed • By 12/31/2008, forty-three (43) sessions completed 	<ul style="list-style-type: none"> • Training classes for key aquarium tank maintenance staff on DigiChat software 	End of October 2007
	<ul style="list-style-type: none"> • Training materials distributed for key aquarium tank maintenance staff on DENR Internet policy (netiquette) 	End of October 2007

<p>Online interaction improves student attitudes toward science and increases student interest in the science fields.</p> <p>Benchmark:</p>	<ul style="list-style-type: none"> • Aquarium staff develops basic information on animal husbandry project to be supplied to teachers/ students prior to live chats 	<p>End of September 2007</p>
<ul style="list-style-type: none"> • By 11/30/2007, an animal husbandry program that meets the five core propositions of the National Teaching Standards while meeting the curriculum standards for Oceanography has been fully developed • By 12/31/2008, student evaluations have been received that will record student reactions to the program 	<ul style="list-style-type: none"> • Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 	<p>End of October 2007</p>
	<ul style="list-style-type: none"> • Aquarium staff and teachers rework any problems that may have been identified. Final project is completed and ready for student interaction 	<p>End of November 2007</p>
<p>Additional animal expert personnel is available for live, online chats to interact with school visitors.</p>	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software 	<p>End of October 2007</p>
<p>Benchmark:</p> <ul style="list-style-type: none"> • By 1/1/2008, one (1) additional animal expert is trained, proficient, and participating in the live, online sessions 	<ul style="list-style-type: none"> • Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 	<p>End of October 2007</p>

	<ul style="list-style-type: none"> • Test online sessions between Aquarium and test school 	Mid-December 2007
<p>The Aquarium continues to reach a higher level target audience of high school students.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 1/1/2008, one (1) additional high school class is participating • By 3/31/2008, two (2) additional high school classes are participating 	<ul style="list-style-type: none"> • Aquarium advertises for a second test school. One school will have active involvement in the development of the online program. The second test school will simply participate in the program with no input for content 	End of January 2008
<p>Key aquarium tank maintenance staff who will be users of the DigiChat software are qualified in computer applications including the DigiChat software.</p> <p>Benchmark:</p> <ul style="list-style-type: none"> • By 10/31/2007, three (3) additional key Aquarium staff trained in DigiChat software • By 10/31/2007, three (3) additional key Aquarium staff qualified to participate in live, online sessions 	<ul style="list-style-type: none"> • Training classes for key Aquarium staff on DigiChat software 	End of October 2007

<p>Key aquarium tank maintenance staff who will be users of the DigiChat software are trained in DENR Internet policy (netiquette).</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 10/31/2007, all three (3) additional key Aquarium staff are trained in DENR Internet policy (netiquette) 	<ul style="list-style-type: none"> Informational material for key Aquarium staff on DENR Internet policy (netiquette) 	<p>End of October 2007</p>
<p>Additional animal experts and moderators use low-risk equipment to ensure reliable chat sessions</p> <p>Benchmark:</p> <ul style="list-style-type: none"> By 11/1/2007, systems are purchased By 12/1/2007, systems are tested By 1/1/2008, systems are in place 	<ul style="list-style-type: none"> Purchase systems 	<p>First of November 2007</p>
	<ul style="list-style-type: none"> Test systems 	<p>First of December 2007</p>
	<ul style="list-style-type: none"> Place systems into operational status 	<p>First of January 2008</p>

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Communication Plan

The Coalition Team is responsible for communicating both the vision and goal setting directives for this program to the Change Management Team. The task of communicating further details are then turned over to the Change Management Team. The Change Management Team is responsible for the bulk of the communication. This will include updates to all interested parties on data gathering, planning, program implementation, and evaluation. The team recognizes the importance of keeping interested parties informed of the changes that will have a direct or indirect impact on the Aquarium, the school groups involved, and the community. The communication

strategy identifies the different objectives that should be communicated, who should be informed of the objectives, the communication tools that will be used, and the people responsible for conveying the messages.

The Coalition Team members consist of executive director, one (1) information technologist, one (1) marine biologist, one (1) teacher, local Aquarium board member, and funding coordinator.

The Change Management Team members consist of executive director, local Aquarium board member, two (2) marine biologists, two (2) teachers, two (2) parents, webmaster, two (2) information technologists, and funding coordinator.

Responsibilities:

- **Executive Director and Local Aquarium Board Member** – Presentations to DENR division office, NCA Society and selected high school; formal news releases; and public broadcasts
- **Local Aquarium Board Member and Funding Coordinator** - Liaison between potential funding agencies, central office personnel, and the aquarium board
- **Marine Biologists** – Keep other marine biologists, immediate supervisor and executive director informed
- **Teachers and parents** - Keep other teachers, parents and students informed and compile data from feedback
- **Webmaster and two (2) information technologists** - Maintain program-related website and ensure systems run efficiently for program implementation (See [Exhibit 16](#)).

Throughout the implementation of the program, all key stakeholders will be kept continuously informed of the various stages of the program utilizing a variety of methods. Emails and presentations will be the major source of communication for all of the key stakeholders and team members. Reports will be communicated in both the data gathering and planning stages.

The entire Change Management Team will be responsible for determining the content of each method of communication. Key changes and communication between team members will occur in brainstorming sessions. These sessions will determine how to make the program more viable, visible, and successful for all parties. The goals for the program, (Aquarium staff be accessible and students increase their interest in science) must remain in sight at all times. The ideas that come out of these brainstorming sessions will then be communicated in an email to all stakeholders where feedback can be given and evaluated. Updates on program progress will be delivered in emails to the entire group. The cost for communication should be nothing or minimal.

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Infrastructure Design

Presently, the Fort Fisher Aquarium is using the following computer-related technology resources:

1. **Hardware:** Forty-three (43) PC compatible, Pentium desktop computers with 128-512

megabytes of Random Access Memory (RAM), 20-40 gigabyte (GB) hard disk drives, 533-3000 megahertz processors, 10/100 network cards, and CD-ROM, CD \pm RW, DVD-ROM or DVD \pm RW, one (1) Seagate 20/40 GB internal tape drive (See [Exhibit 6](#)).

2. **Software:** All computer systems use Microsoft Windows 98/2000/XP Operating Systems and Symantec AntiVirus version 9.1 (Corporate Edition - MLA). Additionally, five systems have Microsoft Office 2000, three have Adobe PhotoShop and two have Corel Draw. All specialty software has single-user licenses (See [Exhibit 7](#)).
3. **Network:** Server software – Novell Netware 5.1 (with MLA licensing and maintenance agreement – unlimited users and servers), with F-Prot AntiVirus.

Network Hardware – Two 24-port Dell 10/100 managed switches connected to T1 line via fiber optic cable through GBIC port, one 16-port NetGear 10/100 hub and one Cisco 2600 Series router, which provides connectivity to the LAN/WAN using T1 connection (See [Exhibit 8](#) and [Exhibit 13](#)).

4. **Personnel:** Thirty-one (31), on-site, technical and administrative staff members, all qualified in computer applications. A Webmaster and a LAN Administrator are available from Raleigh, NC, to maintain and troubleshoot the Web and the network as required (See [Exhibit 9](#)).
5. **Facilities:** Individual staff offices with computers, plus two (2) fifteen-student classrooms and one (1) 250-person auditorium. Available audio/video equipment includes a video camera, projectors, VCRs and DVD players. Facilities are air-conditioned, wired for T-1, broadband network with adequate lock and key security (See [Exhibit 10](#)).

The majority of the technical staff at Fort Fisher Aquarium is computer literate. They make extensive use of the available computer-related technology resources for research, documentation, and communication purposes. Staff communicates with the parent organization, fellow marine biologists, research facilities, sponsors, and the public using the Internet, primarily through e-mail communication.

Implementation of the change plan will require many of the Aquarium's already-in-place technology resources. The current technological conditions (such as T1 line and server environment) exceed the software's requirements, so no new equipment will need to be added.

The current Web site will need modifications to include acceptance of on-line registration and passwords, live questions and answers, and archiving, all of which are included in the DigiChat managed host account. In addition, the Aquarium at Fort Fisher and the LAN Manager and Webmaster need to establish procedural guidelines. It will be imperative to ensure that updates to the Aquarium's Web site are timely and effective. The Web site will need to reflect current online offerings at all times, and likewise, measures will need to be taken to fix broken links and remove old, outdated session offerings. Archived sessions will need to be placed on the Web site in a timely manner and removed at the appropriate expiration date (See [Exhibit 9](#) and [Exhibit 12](#)).

Obtaining hardware, infrastructure, learning resources, and technical support required have been established clearly listing benchmark measures with a timeline (See [Exhibit 15](#) & [Exhibit 17](#)).

Staff Development

Online training classes, offered by the software provider DigiChat, in the use of the new technology change software, will be required for key Aquarium personnel. Additionally, informational materials detailing North Carolina's state-mandated etiquette procedures will be distributed to the key Aquarium staff participating in the project.

The Aquarium has ample technologically skilled personnel to roll out the technology plan with minimal training. (See [Exhibit 9](#)). However, because the technology change software will be new to all involved and the usage of it will be live, it will be necessary for the involved personnel to receive training prior to implementation. Likewise, because of the importance of the state's netiquette policies, it is essential that all parties involved are aware of how the live sessions must be conducted.

The staff development plan has been established clearly listing goals, benchmarks and measures with a timeline (See [Exhibit 15](#) and [Exhibit 17](#)).

Technology Support

Technical support for the DigiChat software is included in the managed chat hosting account, which is recommended for the Aquarium's "Ask the Expert" program. Unlimited technical support is available for customers in good standing via DigiChat's support chat rooms and by telephone.

The NC Aquariums' LAN Manager, Chris Mills, will be responsible for setup, installation, and training for the specialized software involved with the technology change. Jim Connoly, the Aquariums' Webmaster, will be responsible for the procurement of the DigiChat software used at the heart of the program.

The technology support services plan associated with the "Ask the Expert" project has been established clearly listing goals, benchmarks and measures with a timeline (See [Exhibit 15](#) and [Exhibit 17](#)).

Budget

Table 1-Project Budget Summary for Years 2006/2007/2008

Direct Cost	2006	2007	2008	Total
Hardware	\$2,200.00	\$2,200.00	\$2,200.00	\$6,600.00
Software	768.88	938.88	1,468.88	3,176.64

Peripherals	280.00	280.00	280.00	840.00
Consumables	200.00	350.00	550.00	1,100.00
Shipping	380.00	720.00	1,080.00	2,180.00
Storage	525.00	n/a	n/a	525.00
Training	250.00	250.00	250.00	750.00
Documentation	300.00	n/a	n/a	300.00
Public Information	60.00	60.00	60.00	180.00
Total Requested	\$4,963.88	\$4,798.88	\$5,888.88	\$15,651.64

Table 2-Project Budget Details for Years 2006/2007/2008

Direct Costs	Description	2006	2007	2008	Total
Hardware	<ul style="list-style-type: none"> Two (2) top-of-the-line laptops per year 	\$2,200.00	\$2,200.00	\$2,200.00	\$6,600.00
Software	<ul style="list-style-type: none"> Digi-Chat managed chat hosting account for twenty-five (25) simultaneous users first year, fifty (50) simultaneous users second year, two hundred (200) simultaneous users third year Digi-Chat set-up fee 	719.88	839.88	1,349.88	2,879.64
		49.00	99.00	149.00	297.00
Peripherals	<ul style="list-style-type: none"> Two (2) mice each year Two (2) computer cases each year 	80.00	80.00	80.00	240.00
		200.00	200.00	200.00	600.00

Consumables	<ul style="list-style-type: none"> Ink, toner, CDs 	200.00	350.00	550.00	1,100.00
Shipping	<ul style="list-style-type: none"> Round-trip shipping of props to and from schools for live chat sessions 	380.00	720.00	1,080.00	2,180.00
Storage	<ul style="list-style-type: none"> Locked cabinet for laptop storage 	485.00	n/a	n/a	485.00
	<ul style="list-style-type: none"> Shipping of locked cabinet 	40.00			40.00
Training	<ul style="list-style-type: none"> On-line DigiChat training 	250.00	250.00	250.00	750.00
Documentation	<ul style="list-style-type: none"> Creation of usership database 	300.00	n/a	n/a	300.00
Support	<ul style="list-style-type: none"> Included with managed chat hosting accounts which remain in good standing 	n/a	n/a	n/a	n/a
Public Information	<ul style="list-style-type: none"> Creation and placement of banner ad for Aquarium Web site. 	60.00	60.00	60.00	180.00
Total Requested		\$4,903.88	\$4,798.88	\$5,888.88	\$15,651.64

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Funding

This program will seek a grant through AZA (American Zoological Association). The AZA Conservation Endowment Fund Grants plays a vital role as zoos and aquariums strengthen the links between their educational programs at home and their conservation initiatives in nature.

The Turtle Trails project that is a part of Joanne Harcke's work with the NC Aquarium at Ft. Fisher has already been awarded a three year grant through AZA. It is our belief that they are the best source of funding to seek because Turtle Trails is already an established, strong educational program.

This technology plan will enable that program to develop and extend its audience to an

even wider base. The alliance between Turtle Trails and this technology plan have strong goals that echo AZA’s mission of education in nature. These components make this technology plan an attractive, cost-effective, sensible, and logical choice for funding for the AZA Conservation Endowment Fund.

Table 3-Project Timeline for Year 2006/2007/2008

Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Phase I: LOGGERHEAD TURTLE CONSERVATION: January-December 2006												
Outcome - Objective 1:												
• Hold training classes for key Aquarium staff on DigiChat software										2005		
• Distribute training materials to key Aquarium staff on DENR Internet policy (netiquette)										2005		
• Organize and facilitate collaboration meetings between key Aquarium staff and test school on processes (scheduling, creating usernames, follow-up/evaluation, etc.)											2005	
• Organize and facilitate collaboration meeting between animal expert and test school teacher on content to be delivered											2005	
• Conduct a test on on-line sessions between Aquarium and test school												2005
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Outcome - Objective 2:												

<ul style="list-style-type: none"> • Aquarium staff develops basic information on sea turtle project to be supplied to teachers/ students prior to live chats 										2005		
<ul style="list-style-type: none"> • Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 										2005		
<ul style="list-style-type: none"> • Aquarium staff and teachers rework any problems that may have been identified; final project is completed and ready for student interaction 											2005	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 3:

<ul style="list-style-type: none"> • Training classes are held for key Aquarium staff on DigiChat software 										2005		
<ul style="list-style-type: none"> • Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 										2005		
<ul style="list-style-type: none"> • Test on-line sessions between Aquarium and test school 												2005

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 4:

<ul style="list-style-type: none"> Aquarium advertises for a second test school; one school will have active involvement in the development of the online program while the second test school will simply participate in the program with no input for content 	2006												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Outcome - Objective 5:

<ul style="list-style-type: none"> Training classes on DigiChat software are held for key Aquarium staff 										2005		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 6:

<ul style="list-style-type: none"> Informational material is distributed to key Aquarium staff on DENR Internet policy (netiquette) 										2005		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 7:

<ul style="list-style-type: none"> Software is purchased 										2005		
<ul style="list-style-type: none"> Software is installed 										2005		
<ul style="list-style-type: none"> Software is tested 										2005		
<ul style="list-style-type: none"> Test on-line sessions between Aquarium and test school 												2005
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 8:

• Establish needs and goals of database											2005		
• Meet with database creator to communicate needs and goals of database												2005	
• Finalize database													2005
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Outcome - Objective 9:

• Purchase systems												2005	
• Test systems													2005
• Place systems into operational status	2006												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Outcome - Objective 10:

• Review service agreement which is included with managed chat hosting account													2005
Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Phase II: Add ANIMAL HUSBANDRY: January-December 2007

Outcome - Objective 1:

• Hold training classes for key Aquarium staff on DigiChat software												2006	
• Distribute training materials to key Aquarium staff on DENR Internet policy (netiquette)												2006	
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	

Outcome - Objective 2:

<ul style="list-style-type: none"> Aquarium staff develops basic information on sea turtle project to be supplied to teachers/ students prior to live chats 										2006				
	<ul style="list-style-type: none"> Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 										2006			
		<ul style="list-style-type: none"> Aquarium staff and teachers rework any problems that may have been identified; final project is completed and ready for student interaction 											2006	

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 3:

<ul style="list-style-type: none"> Training classes are held for key Aquarium staff on DigiChat software 										2006				
	<ul style="list-style-type: none"> Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 										2006			
		<ul style="list-style-type: none"> Test on-line sessions between Aquarium and test school 												2006

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 4:

<ul style="list-style-type: none"> • Aquarium advertises for a second test school; one school will have active involvement in the development of the online program while the second test school will simply participate in the program with no input for content 	2007											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 5:

<ul style="list-style-type: none"> • Training classes on DigiChat software are held for key Aquarium staff 										2006		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 6:

<ul style="list-style-type: none"> • Informational material is distributed to key Aquarium staff on DENR Internet policy (netiquette) 										2006		
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Outcome - Objective 7:

• Purchase systems											2006	
• Test systems												2006
• Place systems into operational status	2007											
Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

Phase III: Add AQUARIUM TANK MAINTENANCE: January-December 2008

Outcome - Objective 1:

<ul style="list-style-type: none"> Hold training classes for key Aquarium staff on DigiChat software 										2007		
<ul style="list-style-type: none"> Distribute training materials to key Aquarium staff on DENR Internet policy (netiquette) 										2007		

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 2:

<ul style="list-style-type: none"> Aquarium staff develops basic information on sea turtle project to be supplied to teachers/ students prior to live chats 										2007		
<ul style="list-style-type: none"> Aquarium staff and teachers identify topics, themes and issues that they wish to highlight in live chats. Student activities (pre-chat, chat and post-chat) have been discussed and prepared 										2007		
<ul style="list-style-type: none"> Aquarium staff and teachers rework any problems that may have been identified; final project is completed and ready for student interaction 											2007	

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 3:

<ul style="list-style-type: none"> Training classes are held for key Aquarium staff on DigiChat software 										2007		
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<ul style="list-style-type: none"> • Training materials on DENR Internet policy (netiquette) are distributed to key Aquarium staff 										2007		
<ul style="list-style-type: none"> • Test on-line sessions between Aquarium and test school 												2007

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 4:

<ul style="list-style-type: none"> • Aquarium advertises for a second test school; one school will have active involvement in the development of the online program while the second test school will simply participate in the program with no input for content 	2008											
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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 5:

<ul style="list-style-type: none"> • Training classes on DigiChat software are held for key Aquarium staff 										2007		
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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 6:

<ul style="list-style-type: none"> • Informational material is distributed to key Aquarium staff on DENR Internet policy (netiquette) 										2007		
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	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
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Outcome - Objective 7:

<ul style="list-style-type: none"> • Purchase systems 											2007	
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<ul style="list-style-type: none"> • Test systems 													2007
<ul style="list-style-type: none"> • Place systems into operational status 	2008												

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