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Title: Multimedia Project

## INTRODUCTION & BACKGROUND

The Delaware National Estuarine Research Reserve (DNERR) is located at the St. Johns Reserve about 10 miles from Dover Delaware and is charged with providing educational outreach to the citizens of Delaware relating to wetland ecology and preservation. This outreach incorporates the public and private school sector as well as the public in general. In addition, DNEER serves as a living laboratory for scientists. Scientists are given access to the facilities of the Reserve for conferences, and for individual research. The proposed project is in response to the education outreach mandate and focuses on an important ecological feature of Delaware. The proposal is for an online multimedia presentation describing the Delaware River Watershed and its importance to the cultural and spiritual connection that exists between humans and our environment. It is hoped that this project will inspire students and the general public to visit the Reserve and experience the hands-on exhibits that are featured in the main Welcome Center.

The Instructional Design Model: Several design models seem appropriate for this project. While The Instructional Design Model for Distance Training (IDM-DT) as described by Schreiber was originally considered, it was discarded since the model is more appropriate for a , training project in a business environment.(Schreiber, 1998) The ADDIE Model was also considered as described in Morrison, Ross and Kemp. (Morrison, Ross, & Kemp, 2007, pp. 14-18). However that model relies heavily on the identification of the characteristics of the learners, and their needs. In this case, the learners represent a wide variety of the general public and specific generalities would be difficult to determine. Instead the instructional design selected for

this project is the 3-Space Design Strategy as discussed by Moonen. (Moonen, 2002) Because the project will rely on a variety of subject matter experts from scientists to members of the Lanape Indian Tribe, it is believed that the counterbalance of the structured approach with the associative approach will provide the best opportunity for successful communication within each space. Additionally, the Consensus Space, the Task Space and the Implementation Space format allows for continuous revision and updating as the project develops.

Rationale for the multimedia-learning environment: The watershed incorporates most of the State of Delaware and is in itself a multimedia experience. Not only the visual aspects but the sounds of the watershed are important to the overall experience. In addition, using the oral storytelling of the Lanape Indians will add a rich perspective on the history of the watershed and underscore the watershed's importance to humanity. The multimedia environment will allow the learner to see the entire watershed in relation to Delaware, plus experience the sounds associated with the watershed while observing videos that can show the development and erosion of the watershed over a lengthy period of time. Such perspective cannot be understood through direct observation. By using multimedia the learner can obtain a macro view of the physical make-up of the watershed, its history and legends. This variety of scope is well suited to the multimedia environment.

Key characteristics of the target group: The users of this project are a highly diverse group. Students in junior and senior high school may be primary users but there are many Colleges and Universities in Delaware that are offering courses in ecology. Additionally, any member of the public in general with an interest in the impact of the watershed on hunting, fishing, farming, and the development of human life should find some benefit in the offerings of this project. Second, it is important to make the presentation interesting and relevant enough that

teachers will want to incorporate the project into their curricula. These individuals make up what Fresen and Boyd refer to as the clients. (Fresen & Boyd, 2005, p. 318). By focusing on the clients we can determine some characteristics. First, they are not scientists in the field of ecology, but they share a self motivated interest to learn more about a geographic phenomenon of their own habitat. They are diverse in terms of age, socioeconomic level, gender, ethnicity, physical abilities and limitations, and technological skills. Accessing this project will probably be voluntary and not required. In short, this project must be intriguing and motivating on its own merits, and must show immediate relevance to the lives of those who use it.

Advantages and disadvantages of multimedia learning: The advantages of multimedia for the project serve to attain and maintain the attention of the younger learner and the curious user who may have only a short attention span. As the important elements of the subject matter itself are multifaceted, the ability to provide both sights and sounds are endemic to the topic. The use of video and audio will be liberally used. This may inhibit those individuals who have physical limitations that negate the advantage of audio or video activities. Therefore, offerings should be made redundant by providing both audio and visual capabilities where possible. Disadvantages include the requirement that the learners and their tools be able to access all of the multimedia functions available. For example, some school computers may not have speakers attached. Another disadvantage is the diversity of practitioners needed, such as graphic artists, programmers, subject matter experts, and audio and video technicians. Producing an interactive and attractive project will require coordination of many individuals. Finally, it may be difficult to provide a project that can address the variety of learning styles that will be represented by the clients.

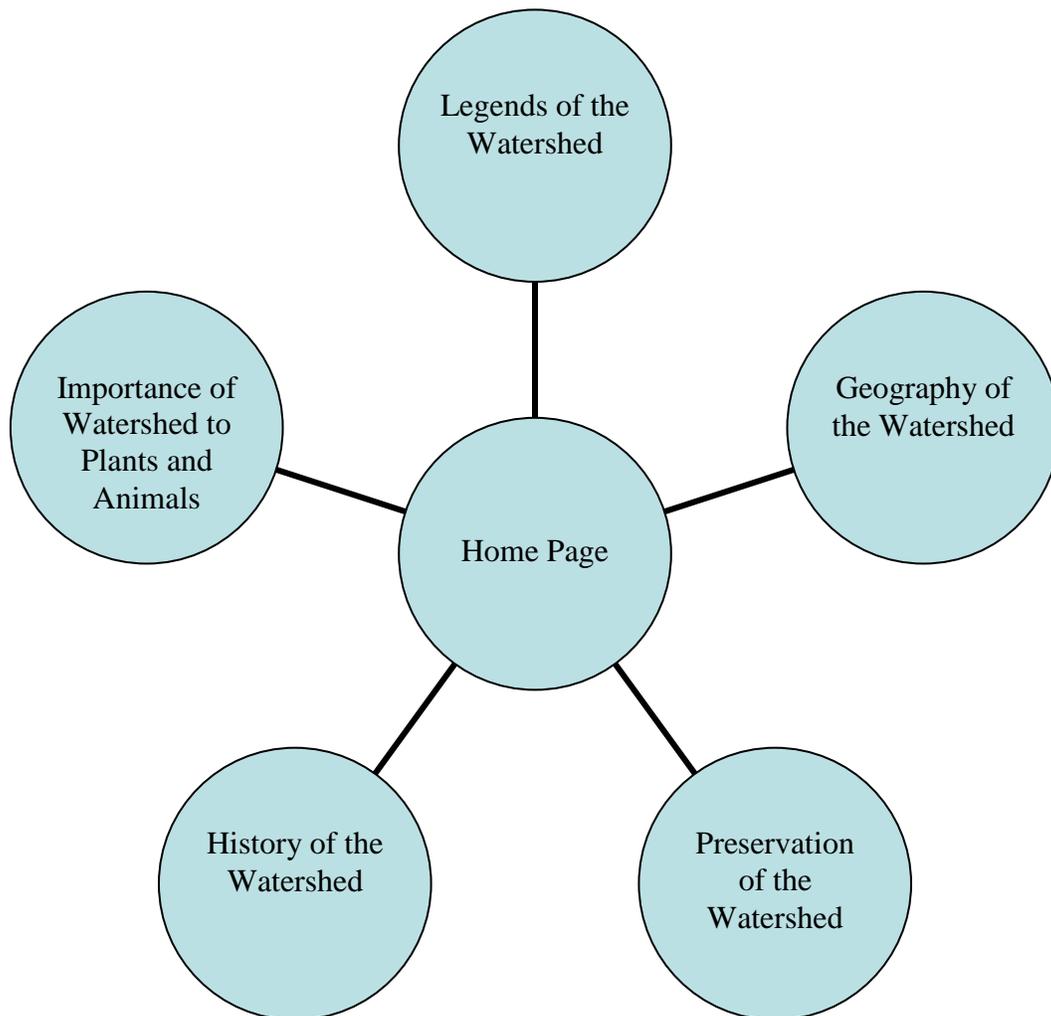
## THE PROJECT

Media selection criteria: The project will make use of several types of media. As a result, it may require the services of several experts to produce the final product. Bates points to the cost involved in developing a multimedia presentation. (Bates & Poole, 2003, p. 262) However since DNEER is part of the Department of Natural Resources and Environmental Control, (DNREC) there is a reasonable amount of access to such experts, material and equipment. The media used will be text, video and audio, as well as maps, charts and photographs. Larger files should be available in a compressed format to minimize space requirements while maintaining an acceptable quality of presentation. The selection of each medium will be based on pedagogical and usability criteria. From a pedagogical perspective all the media must be relevant, clearly understood, and follow a logical sequencing structure. From a usability perspective the media should be memorable, easily negotiated, and efficient. Ultimately the experience of using the project should be as tangibly variable as the watershed itself.

Different presentation/delivery modes: This project initially will be made available as an online offering. Since the project should be accessible by all of the major browsers, some attention to the idiosyncrasies of those browsers should be taken into account by the programmer in the early stages of development. The project does not offer any synchronous interactivities that might be characteristic of other multimedia presentations. The advantage is that the project can be updated on an “as-needed” basis. However, the project will also be available on CD so that it can be available to learners who may have limited access to the Internet. The CDs will be available at the Reserve at no charge, and they will be sent to schools, churches, and civic clubs upon request.

The project team: The variety of media contemplated in this project requires a diversity of people, knowledge and talents. These individuals are the ‘Practitioners’ as described by Fresen & Boyd in their role players model. (Fresen & Boyd, 2005, p. 318). In addition to the project manager, there will need to be a subject matter expert from DNERR and another from the Lenape Indian Reservation. The Lenape input is a crucial part of the presentation because their part as the care-taker of the watershed since pre-America history is intimately intertwined in the history of the region. In addition to these individuals, the project will need also a technical developer to handle the video elements, an audio technician to record, mix and produce the audio elements, a graphic artist to design the visual presentation of the project and finally a program developer to develop the computer platform that will house these elements. The project team, therefore, will comprise seven individuals. While these people all possess explicit talents, the individuals all exist within the Delaware State personnel and are therefore, within the reach of DNEER.

Content outline: The project will be divided into six general areas beginning with the Home Page. From that point the learner can choose to access any of five hubs: The History of the Watershed; The Geography of the Watershed; The Legends of the Watershed; The Importance of the Watershed to Plant and Animal Life; and The Preservation of the Watershed. Each of the major hubs will also provide links to movies, animations, stories and sounds of the environment. In addition, short quizzes and other interactive choices will stimulate the learner as well as provide feedback on the knowledge gained. All of the hubs and subtopics will link to any other hub or back to the home page. Below is a representation of the major topic areas.



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## CONCLUSION

Competition and opportunities: A short SWOT analysis will serve to determine the environment in which this project dwells. As an agency of the State of Delaware, DNERR is charged with providing educational outreach to the Citizens of Delaware. As such the project carries the resources available through State support and thereby offers an implied seal of approval. This public image is quite favorable to the acceptance of the project as an authoritative

offering. Any weaknesses arise from the same source. As a State funded project it is subject to severe scrutiny and must maintain high scientific standards in order to defend itself from public and political criticism. The opportunities available in this project include a strengthening of awareness of the Lenape Indian Tribe throughout the State. Additionally, it is hoped that this project may act as a catalyst to increase teaching and learning of the ecology, and the protection and preservation of a valuable Delaware geographic asset. Finally, the threats to the project may come from some similar programs available from museums and other water conservation groups. It is hoped that DNERR can overcome the threats based on the research facility that is funded by the State of Delaware and NOAA, and that it can provide meetings, seminars, and tours that offer hands on experiences through directly interacting with the watershed.

The roll-out. The timetable from start to finish is estimated to be about three months.

The proposed schedule is as follows;

Time Frame	Activity Goals
Week 1	Meet with the development team and define the learners and the learning goals. Begin planning the storyboard.
Week 2	Finalize the storyboard and plan the episodes and how each may address a specific learning goal.
Week 3	Write scripts. Meet with Lenape Indians to record legend stories of the Watershed.
Weeks 4-6	Film videos, create animations and remix the audio files.
Week 7	Complete development of the computer programming.
Week 8	Organize the elements into the program and complete the first draft.
Week 9	Present the project for beta testing with a focus group.
Week 10	Make revisions based on beta test results
Week 11	Post the final project online.
Week 12	Produce CDs for distribution based on the online version.

Many of the items in this schedule will be working simultaneously over a several week period.

Obviously some setbacks that may occur, for example bad weather may delay filming of the

videos of the watershed, but the deadline date should be maintained as closely as possible. Once posted, the project will be continually updated and revised.

The results of this project hopefully will benefit a variety of constituents. It will benefit the citizens through increased knowledge and appreciation of their environment; the Lenape Indians by increased recognition of their history, lifestyle and importance to the Delaware community; and DNEER by increased recognition of their work as a focal point for the environmental preservation of Delaware.

Works Cited

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