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ENDANGERED SPECIES PROTECTION EFFORTS: THROUGH DESIGN AND INTO CONSTRUCTION

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Abstract

The U.S. 222 project in Berks County Pennsylvania involves eight miles of new and reconstructed highway to create a limited access facility. Final design and construction were divided into three sections following the Spring 1997 Record of Decision. However, in the fall of 1997, the bog turtle (*Clemmys muhlenbergii*) was declared a federally threatened species, and soon after the U.S. Fish and Wildlife Service raised concerns regarding the proximity of the southern section of the Warren Street project to known turtle populations. Field investigations in the spring of 1998 confirmed the presence of populations within the southernmost design section, necessitating formal consultation under the Endangered Species Act.

Coordination with USFWS, the U.S. Army Corps of Engineers, and the Pennsylvania Fish and Boat Commission ensued. A biological assessment of the species in the project area, the project's potential effects, and proposed mitigative measures was written and used as the basis for the USFWS's final biological opinion, which concluded no adverse effect for the species and now serves as the framework for managing the Warren Street project as it relates to the species. However, to ensure this conclusion, design alterations and other measures were required to ensure the project could move forward.

The effects that the discovery of bog turtles had on the development of the project plans and timetable were significant. Avoidance, minimization, and mitigation measures were evaluated, and those that were ultimately adopted to best protect the species while allowing the roadway improvements to move forward included design modifications, construction limitations, and monitoring efforts. Specific measures involved redesigning two box culverts into single span bridges, careful sequencing of construction activities around the bog turtle's physiological requirements (i.e., hibernation), disturbance limits to minimize activity near identified habitat, barriers to preclude turtles in the construction zone, and an ongoing tagging and monitoring study to identify habitat and behavior. These efforts have required, and continue to require, close cooperation between PENNDOT and the regulating agencies.

As the southern section prepares to move into construction early in 2003, challenges in managing the project around the bog turtle populations continue. The first real tests for exclusionary and protective measures await, as do interactions with the construction contractor. This first construction season should provide much insight for managing the remainder of the project in light of the bog turtle's presence.

Biographical Sketch: Since receiving her master's degree in environmental policy from the University of Pennsylvania in 1999, Ms. Howsare has worked as an environmental planner, researching and writing environmental documentation and coordinating the environmental aspects of transportation projects. She has been heavily involved in the coordination of two large final design efforts and has prepared and successfully directed several federal and state permit applications for regulated impacts. Prior to her career in the environmental field, Ms. Howsare worked as a chemist. She received her B.A. in chemistry from the University of Pennsylvania in 1991, and is currently a member of the American Chemical Society.