

Kansas Wetland and Stream Delineations Using Mobile Computing Technologies



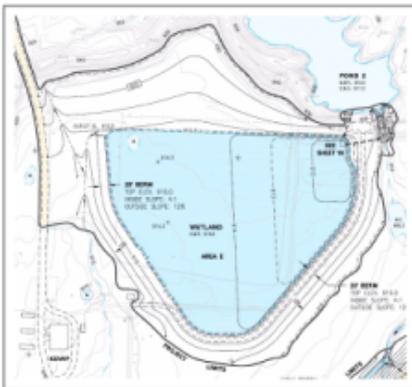
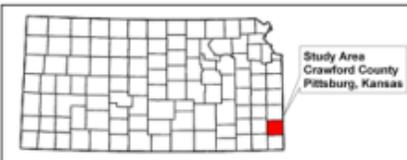
U.S. Department of the Interior - Office of Surface Mining



Abstract

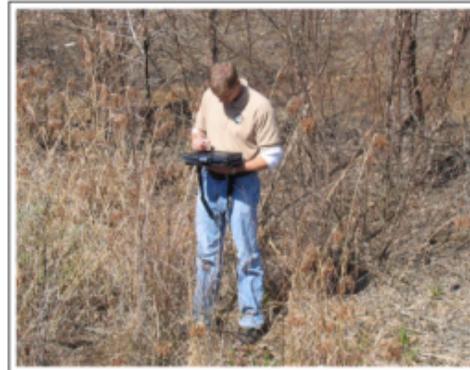
Office of Surface Mining (OSM) Mid-Continent Region personnel provided technical assistance to the State of Kansas to obtain the necessary Clean Water Act Section 404 permit authorizations from the Corps of Engineers. These permit authorizations were for two Kansas AML sites scheduled for restoration. The two AML sites were part of the Kansas State Park system and were in need of safety improvements and environmental restoration. At the sites, public safety was at risk because of degraded access roads and leaking dams created by past surface mining operations. Likewise, in addition to addressing public safety, reclamation activities resulted in the creation of new wildlife habitat areas, increased plant community diversity, decreased excessive sedimentation, and created additional critical habitat for the endangered gray bat.

OSM personnel fast-tracked the projects by conducting stream and wetland delineations and submitted a project jurisdictional determination for Corps approval. Additionally, floristic value and stream assessment techniques were used to rate the quality and function of the impacted sites within the project area. Using these assessments, site conditions were quantified and a comprehensive mitigation plan was developed to offset any losses to the aquatic environment. Spatial information delineating wetland transects, stream course routes, and wetland boundaries were captured in the field using GIS applications and mobile devices provided through the TIPS program. OSM technical assistance and TIPS mobile computing technologies aided in the clear presentation of project activities to obtain the necessary 404 permit approval from the U.S. Army Corps of Engineers. In spite of the complexity of the project, Section 404 permit authorizations were granted from the Corps within several weeks after the permit applications were submitted for the two projects.

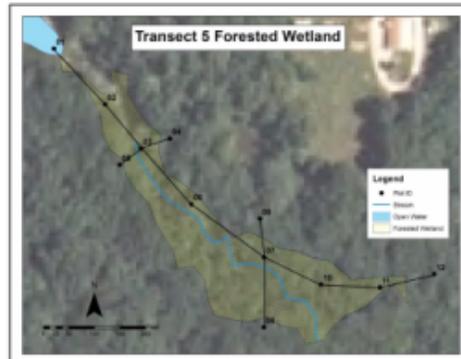


Comprehensive Mitigation Plan Design and Analysis

Hardware and Software



An OSM employee uses the latest mobile computing technology provided through the TIPS program to assess the suitability of a wetland wildlife mitigation site



Transect points and wetland and stream delineation boundaries were mapped using mobile computing technologies