Moab MLP – BLM – USGS Ecosystem Service Valuation Study

Proposed Scope of Work

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Project Description:
The overarching goal of this project will be to build on the lessons learned from the Phase I Ecosystem Services pilot project through a direct application of one or more of the tools and methods to a BLM planning and decision making context. To that end, the Phase II Ecosystem Services project will work to meet the needs of the Moab and Monticello Field Offices in their effort to complete the Master Leasing Plan (MLP), which considers the leasing of public lands in east-central Utah for oil, gas and potash development and potential associated impacts on recreational uses on BLM and adjacent lands and regional water resources.

This effort will develop, document and apply an analytical framework that will lend supporting documentation to the analysis of the affected environment (Chapter 3) and assist with evaluating the proposed actions and alternatives (Chapter 4) of the MLP document. Our approach will include a literature review, spatial analysis and simulation modeling (where appropriate and feasible) to identify appropriate mineral development strategies as part of the MLP process. The analysis will focus specifically on water and recreational resources within the MLP boundary and associated adjacent lands, including State and National Park lands.

Ground & Surface Water
A review of available ground and surface water data sources will be completed to develop the most current inventory of water resource data for the region. This information will be used to document the potential impacts of increased water usage through oil, gas and potash development on regional aquifers and surface water flows. The information assembled through this effort will then be used to identify potential impacts of increased water consumption (by industry) on water sources used by livestock, wildlife species (to be identified by BLM), recreational interests, and other private and municipal water users.

Expected outcomes include an annotated bibliography of water resources data and reports for the region, a description of the relationship between ground and surface water supplies, including the
location of springs and their role in supporting wildlife diversity and livestock grazing, and an inventory of potential impacts of groundwater extraction in the region on existing and future residential, commercial, industrial and natural resource uses. A more concise description of expected outcomes will be developed as we determine what data and information are available and the most appropriate methods of analysis. Preliminary outputs will be shared with the Moab FO in December 2012, and all analysis will be completed by March 2013.

Recreational & Aesthetic Views
The Moab region supports a large and diverse tourist economy that draws visitors from across the globe and provides both direct (e.g. guides) and indirect (e.g. hotel and restaurant employees) impacts on regional employment. Issues such as the number, location and scale of mineral development sites are a primary concern as inappropriate development may lead to visual impacts that have an adverse impact on recreational resources and the industries they support. We will consider a broad range of stakeholders, including local employers and the diverse recreational pursuits (e.g. hiking, mountain biking, OHV driving/riding, camping, and boating) in this analysis.

This effort will assemble a database of spatial, quantitative and qualitative data to: 1) identify significant landscape features and viewscapes that contribute to the overall scenic beauty of the region (i.e. sources); 2) identify landscape features that detract or interrupt scenic viewsheds (i.e. sinks); 3) identify locations such as trails, campgrounds and roads sought by recreationists (i.e. users or beneficiaries) for their iconic views and sweeping panoramic landscapes; and 4) model and map the spatially explicit pathways that link the source, sink and use locations (i.e. flows). The results of the viewshed analysis will be used to identify locations or corridors on the landscape that are important for maintaining the iconic views of the region. These critical flow paths can be used for identifying and prioritizing sites for mineral resource development that minimize impacts on the visual resources of the region.

Expected products include an analysis of hiking, biking, rafting and motorized vehicle recreationist’s pursuit of the iconic views through a combination of simulation modeling and spatial analysis. The results of this effort will include a written report documenting data sources, data processing steps, analytical techniques and the identification of important landscape locations that provide a high density of visual enjoyment for a broad range of recreational and stakeholder groups. Landscape locations will be indexed according to the relative value of their overall contribution to visual enjoyment and, when possible, this index will be quantified in monetary terms. The monetization of recreational values will be determined using visitor survey and expenditure data, communication with guides and tour operators regarding costs and priority visitation sites, and consultation with Moab FO staff. To quantify the economic impacts (e.g. lower visitation rates, reduced expenditures) of a diminished recreationist experience (i.e. impaired or destroyed viewsheds) as a result of mineral resource development activities, a survey of the primary literature will be conducted to identify appropriate value estimates for a range of recreational pursuits. The results of the analysis (as well as desired intermediate steps) will be provided as spatial data sets. Summary maps from the analysis will also be included in the suite of deliverables. Preliminary outputs will be shared with the Moab FO in February 2013, and all analyses will be completed by March 2013.