

BOEM ENVIRONMENTAL STUDIES PROGRAM: ONGOING STUDIES

Region: Alaska

Planning Area(s): All Alaska

Title: MAG-PLAN Modification: New Data Collection, Testing, and Streamlining of OCS Economic Impact Model for Alaska (AK-08-10)
(Short Title: MAG-PLAN Alaska Upgrade Study)

BOEM Information Need(s) to be Addressed: MAG-PLAN provides the quantitative basis for the mandatory equitable sharing analysis in 5-year program development and the required employment forecasts for 5 year and lease sale Environmental Impact Statements (EISs) and Environmental Assessments. Testing and improvement of MAG-PLAN Alaska, along with incorporation of the most recent data available, will substantially improve confidence in user efficiency and BOEM forecasts of employment and personal income expected to result from proposed OCS activities on the Alaska OCS. Better data will aid broader BOEM efforts to understand the local and regional consequences of the program as industry activities expand or contract. This study addresses aspects of USGS Recommendation 7.02.

Total Cost: \$589,000

Period of Performance: FY 2009-2012

Conducting Organization: Northern Economics, Inc.

Principal Investigator: Patrick Burden

BOEM Contact: [Jerry Brian](#)

Description:

Background: The BOEM maintains two versions of an OCS Economic Impact Model (EIM) called MAG-PLAN to provide a consistent bureau-wide approach to estimating employment, personal income, and similar results of OCS activities. Each version is a Microsoft Access-based, 2-stage model that uses OCS-specific “cost functions” to estimate the industry expenditures required to complete a given activity, such as drilling an exploration well or operating a production facility. The second stage uses region-specific economic multipliers from the commercial economic modeling system IMPLAN to forecast employment, personal income, and other variables resulting from the initial industry expenditures.

There are four major reasons to upgrade MAG-PLAN Alaska:

1. BOEM employees used MAG-PLAN for the latest round of 5-year program and EIS analyses and identified certain problems in the model including file instabilities.
2. Almost all model data came from engineering cost estimates (extrapolating from onshore and State-waters projects) developed for two studies (Arctic IMPAK and Sub-Arctic IMPAK) about a decade ago. MAG-PLAN Alaska adjusts this data to account for inflation, but that adjustment does not fully account for changes that have occurred over

the interim, including advances in technology and significant industrial investment in the Alaska OCS.

3. Much of the supporting model data is inadequate for frontier planning areas, which have attracted far more industry interest than was apparent when earlier model planning decisions were made. The frontier planning areas are sufficiently different from the Beaufort Sea and Cook Inlet, respectively, that more targeted data and revised cost functions are needed.
4. The internal sector-allocation equations in the model will have to be changed to make MAG-PLAN compatible with recent changes in the way industry inputs data to IMPLAN.

The BOEM has created a Modeling Review Board (MRB) to assist in the technical oversight of this MAG-PLAN upgrade effort. The MRB consists of a group of consultants (including the project manager for the two studies that provided the current MAG-PLAN Alaska data) who will provide expert advice to BOEM regarding all aspects of this contract. The MRB will provide expertise in evaluating the review and testing of the actual model, suggest possible improvements and solutions to problems, and provide review and comments on all deliverables.

Objectives: The objective of the MAG-PLAN Alaska Upgrade Study is to strengthen and refine the Bureau's procedures for estimating the onshore economic effects of OCS-related activities by updating and enhancing the current version of MAG-PLAN Alaska.

Methods: This project will involve coordinating five linked but separate research efforts:

1. testing and streamlining MAG-PLAN functionality;
2. identifying and collecting industry expenditure data;
3. creating better "Offshore Modeling Area" data and model structure for frontier planning areas;
4. revising industry sector codes to match current IMPLAN sectoring scheme and incorporating the new codes into MAG-PLAN equations; and
5. documenting all efforts.

Current Status: Awaiting final report

Final Report Due: May 2012

Publications Completed: None

Affiliated WWW Sites: <http://www.boem.gov/akstudies/>

Revised Date: March 2012