Agency Conclusions:
Determination of NEPA Adequacy Worksheet

U.S. Geological Survey
19 April, 2016

Proposed Action:
Propagation Characteristics of High-Resolution Geophysical Surveys: Open-Water Testing

A. Description of the Proposed Action and any applicable mitigation measures.

Detailed description of the proposed action and applicable mitigative measures is provided.

B. Identify applicable National Environmental Policy Act (NEPA) documents and other related documents that cover the proposed action.

List by name and date all applicable NEPA documents that cover the proposed action.
Yes

List by name and date other documentation relevant to the proposed action (e.g., biological opinion, historical/cultural resource consultations).
Yes

C. NEPA Adequacy Criteria

1. Is the new proposed action a feature of, or essentially similar to, an alternative analyzed in the existing NEPA document(s)? Is the project within the same analysis area, or if the project location is different, are the geographic and resource conditions sufficiently similar to those analyzed in the existing NEPA document(s)? If there are differences, can it be explained why they are not substantial?

Objective of the proposed action to be conducted this summer (2016) is:

> "…to record the acoustic characteristics of a suite of low-energy sound sources/sound source configurations that are typically used by the USGS, other federal agencies, and affiliated researchers to image the seafloor, sediments below the seafloor, and gas emissions in the water column…The tests would capture how the acoustic waves of the various sound sources react with the seafloor at different water depths (i.e., wave/seafloor interaction) and different bottom types (i.e., absorption and reflectivity of the seafloor)…Although the USGS typically deploys these types of sound sources continuously for days or longer along adjacent survey lines, the sources on this cruise would be operated for only a few hours at a time as the ship passes through the CSA hydrophone arrays. Thus, the use of each acoustic source for the planned activity would be intermittent/non-continuous and of short duration."

It is a characterization study rather than a geophysical survey and the length of time that the soundings would be performed is much shorter than a traditional marine seismic survey. All of the project components except for low-energy air gun operations would qualify for application of DOI CE, CFR 46.210(e). Mitigation measures to be applied for the non-air gun sources would be as specified in the USGS NEPA Handbook.

The draft determination indicates that the low-energy air gun operations at Site 5 would fall under the "Operations for Which Incidental Take of Marine Mammals is Not Anticipated or Authorized" described in the NSF-USGS PEIS. While the proposed study area (Atlantic Ocean, offshore Virginia and Maryland, from the inner continental shelf to the outermost shelf) was not specifically identified in the PEIS as a "Detailed or Qualitative Analysis Area", the PEIS broadly addresses marine seismic surveys being conducted by the USGS located along U.S. continental margins. The draft determination further indicates that the overall characteristics for the NW Atlantic NSF-USGS PEIS Alternative B scenario are most similar to those at the Site 5. Overall, however, the proposed activity would use smaller seismic sources and would not conduct operations along long, densely spaced tracklines for a 3-dimensional survey as compared with the NW Atlantic DAA survey scenario.

Monitoring and mitigation measures for the air gun sources would include those established by the NSF-USGS PEIS and the associated USGS ROD.

2. Is the range of alternatives analyzed in the existing NEPA document(s) appropriate with respect to the new proposed action, given current environmental concerns, interests, and resource values?

The five sites have been specifically chosen with various seafloor characteristics and water depths to optimize equipment testing and achieve the project objectives. The sites would be within the U.S. Exclusive Economic Zone and beyond the 3-nautical-mile nominal state water boundary (Submerged Lands Act), except for a site offshore the federally-maintained Wallops Island. The Wallops site straddles the 3-nm state water limit for Virginia and is the only site with the required seafloor and depth characteristics based on exhaustive data compiled by the USGS over decades of research. The other alternative would therefore be a no action alternative.

3. Is the existing analysis valid in light of any new information or circumstances (such as recent endangered species listings)? Can it be reasonably concluded that new information and new circumstances would not substantially change the analysis of the new proposed action?

There is a detailed analysis provided to support the conclusion that the proposed air gun source should be considered a low-energy source. The technical experts who prepared the analysis estimate that the 180 dB (RMS) value would never be exceeded within the 100 m mitigation zone that determines whether the activity is considered "low-energy" and can be operated according to Alternative B under the NSF-USGS PEIS.

Their detailed analysis also concludes that the maximum 1900-m-radius 160 dB (RMS) full mitigation zone around the vessel for the largest source configuration (two 30 in^3 GI-guns) and 995-m-radius for a single 30 in^3 GI-gun are easily within observable range, and the proposed activity would qualify for completion under the no-take precepts of the NSF-USGS PEIS. Furthermore, new modeling results (Appendix A) show the mitigation zones may actually be far smaller, meaning that the activity likely has an even smaller impact than anticipated by the most conservative analyses.

The only available Biological Opinion issued to the USGS for Atlantic activities in the past five years commences at water depths greater than those that are the focus of this activity. No recent Endangered Species listings in the proposed area of operations and in the summer season have substantially changed the analysis in the existing NEPA documentation. The USGS and other agencies have previously worked at Sites 1 through 4, and none has historical or cultural significance and no marine mammal or endangered species were encountered. Relevant States' Federal Consistency listings were reviewed and it was determined that the study area was unlisted, so no further action is required with respect to the Coastal Zone Management Act. No takes of marine mammals, no disturbance of endangered or protected species, and no impacts to coastal zone use or resources are anticipated.

The existing analysis remains valid and no new information was identified that would substantially change the analysis in the NSF-USGS PEIS.

4. Are the direct, indirect, and cumulative effects that would result from implementation of the new proposed action similar (both quantitatively and qualitatively) to those analyzed in the existing NEPA document?

The draft determination indicates that the cumulative impacts would be significantly smaller than the analyzed scenario in the PEIS since the air guns for the study would be run non-continuously for less than 10 hours total and not along continuous, densely spaced tracklines for multiple days. The impact would also be less since the water depth is greater than 100 m, not within the 0-160 m depth range used for the modeling analysis in the PEIS.

5. Are the public involvement and interagency review associated with existing NEPA document(s) adequate for the current proposed action?

Yes. No additional public involvement and interagency review is required for the proposed action.

Conclusion

In my opinion, the existing NEPA documentation and use of the DOI CE fully covers the proposed action and constitutes USGS's compliance with the requirements of the NEPA.