

BLM-COLORADO DIGITAL DATA SPECIFICATIONS GUIDE

Last Revised 2/2017

Supplement to

Handbook of Guidelines and Procedures for Inventory, Evaluation, and
Mitigation of Cultural Resources
Bureau of Land Management
Colorado State Office
New Information Highlighted

GIS and GPS Data

Because of its emphasis on data security, the Colorado OAHP serves as BLM's primary repository for geospatial inventory and site location data. Consequently, BLM and the OAHP operate under the same set of geospatial parameters. Some field offices have additional requirements. Permittees may request details about these requirements from the field office of interest.

GPS Data Collection

Data collected by GPS must meet a ± 5 m. accuracy standard. You should also independently confirm that the GPS equipment that you are using in the field is correctly recording their locations. Therefore, it is essential that USGS topographic maps, aerial photos, printouts of digital ortho-photo quads, or other hard-copy maps are still brought to the field. If the GPS equipment is proving to be inaccurate, or if satellite coverage is not available, you must record sites and isolated finds using hard-copy methods, and create shapefiles in GIS upon returning from the field. Differential correction is strongly encouraged, but *raw .ssf files will not be accepted by the BLM.* ***BLM will not accept geospatial data in any format except shapefiles.***

If you are using a GPS unit that does not run ArcPad, you must find a source for converting your field data into shapefiles. Note that BLM will not provide tech support for this process; please contact the manufacturer of the software or application that you are using.

Reminder: physical datums may no longer be placed in the field. Only electronic datums are acceptable.

Shapefiles

BLM and SHPO are aware that ESRI is phasing out shapefiles in favor of feature classes, however, at present neither entity is prepared to receive feature class data. If you regularly use feature classes, you must convert them to shapefiles before sending them to BLM.

Projected coordinate systems:

NAD_1983_UTM_Zone_13N

or

NAD_1983_UTM_Zone_12N

Offices may choose to send everything in Zone 13, but must indicate on the site form that "Zone 12 being projected into Zone 13". Some offices no longer accept Zone 12 data; please check with the field office with which you are working before sending data.

Geographic coordinate system: **GCS_North_American_1983**

Geometry type: **Polygons *only***

[sites must have accurate boundaries, isolated finds buffered 4 meters, and lines buffered to the size of the inventoried area or linear feature (e.g., a 100'-wide inventory corridor should be buffered 15.7 meters)].

Metadata: **Attribute table metadata is sufficient.**

Attribute tables: **Attribute tables** must conform to those presented in Appendix I, and also available from:
<http://www.historycolorado.org/oahp/gis-information>

Sites and surveys must not be provided in a single shapefile. The shapefiles may contain multiple features, but site shapefiles that contain multiple sites must be accompanied by the SHPO attribute tables that clearly differentiate sites by Smithsonian Number.

Site boundaries may not be identified by a generic graphic shape (circle, oval, rectangle, etc.). All ***sites*** must be recorded with multiple vertices that precisely form the site boundary. ***Isolated finds*** may be created from a datum point, but must be buffered and submitted to the BLM as polygons (the standard buffer is 4 meters).

BLM will not accept .kmz or .kml files in lieu of shapefiles or feature classes.

Please use the "Repair Geometry" tool before sending shapefiles to BLM (in ArcGIS, it can be found in ArcToolbox under Data Management Tools > Features). If you find errors, it is advisable to correct them before submission.

Shapefiles must be provided to BLM (not directly to the SHPO). Important requirements:

- Shapefiles must have *short, uncomplicated names*, that follow basic best practices (for example, use an underscore rather than a "dot", as a "dot" tells the computer that an extension is about to follow). This is especially essential when naming linear features, e.g. "5BL358_1" is preferable to "5BL358.1".
- Please place shapefiles in a compressed file before emailing or uploading.
- **Do not nest compressed files in other compressed files.**
- Transmission options:
 - Email
 - Uploading to a secure company website

- BLM and SHPO discourage submission of data on CDs, as they are both environmentally unfriendly and their use is being phased out by computer manufacturers. **Most field offices will no longer accept CDs; please consult the local specifications presented in Appendix II.**
- SHPO does not incorporate submitted GIS files into their database until verified by paper forms, so changes are possible if shapefiles are submitted before paperwork is complete.

SITE FORM AND REPORT DOCUMENTATION

ELECTRONIC REQUIREMENTS¹

All documentation must be submitted to BLM (not directly to the SHPO).

Draft site forms and reports must be submitted to BLM electronically before ***preferably unbound²*** hard copy finals are mailed. Final PDF versions saved as either PDF/A-1a or PDF/A-1b, and are updated with SHPO and BLM numbers, must also be provided to BLM at the end of the project. PDFs created from scanned hard copies (usually compiling image files) must be run through OCR to make them searchable, or converted to PDF/A. Most BLM archaeologists prefer to receive *drafts* in Word (.doc or .docx) format in order to use the reviewing tool. PDF format is less desirable for *review*, but is the only format in which *final* reports and site forms will be accepted.

- Draft documents must not be “locked” or “secured”, as this prohibits electronic review.
- PDFs of reports and site forms must be compiled before being submitted BLM. ***BLM will not compile PDFs for contractors.***
- Site forms must be submitted in files that contain MDFs, component forms, maps, photographs and other documentation in a single file, by Smithsonian number. IFs must include the IF form and map, along with any other relevant documentation, in a single file, by Smithsonian number.
- **Site and IF forms** must follow the naming conventions:

5_**** (site or IF)**

5_****_* (linear)**

where 5**_ is the county abbreviation (e.g., 5PA_), **** is the site number (and point number, if appropriate).

¹ See the main BLM Handbook and 2014 BLM protocol for other reporting requirements.

² SHPO also prefers unbound reports. Check with your local BLM field office.

- **Please ask BLM to obtain document numbers (vs. asking the SHPO yourself)**, as BLM also needs this information and will need to supply you with its number as well.
- **Reports** must follow the following naming conventions, based on the SHPO document number:

****_LM_R****** or ****_LM_NR******

where the first ** are the two-letter county code (e.g. FN),
 "R" for results (likely, if you are submitting a site form) and
 "NR" for no results or no new information about a site, with
 the last series of **** as a SHPO-assigned consecutive
 number (e.g. FN_LM_NR1 or FN_LM_R236)

- **Photographs** should follow the SHPO and SHF standards found at:
http://www.historycolorado.org/sites/default/files/files/OAHP/crforms_edumat/pdfs/1527photo.pdf

- **Electronic report and site form submission options:**

- **Email.** *Only if* the documents small enough and contain no sensitive information (e.g., a limited results form). Email is not considered to be secure, and BLM's firewalls sometimes reject emails with attachments.
- **Secure company FTP site.** Many of the larger contractors have their own FTP sites, and can provide BLM access. As long as the site is secure, this is a desirable option.
- **DO NOT USE GENERIC FILE-SHARING SITES** such as DropBox, Google Drive, etc. Because of the well-known security issues with these sites, BLM is discouraged or prevented from accessing them on government computers.
- **Please do not submit shapefiles, reports and forms by CD.** If it is infeasible to provide the electronic data using online file-sharing, a few BLM offices may still accept CDs, but most have phased out this policy and will no longer accept CDs.

APPENDIX I: REQUIRED ATTRIBUTE TABLE FIELDS

SITE ATTRIBUTE TABLE

Attribute	Definition
ID	Unique sequential numeric ID for a given spatial feature. (LEAVE BLANK)
AREA	Area of the spatial features in the data set (Calculate via GIS)
PERIMETER	Perimeter of spatial features in the data set. (Calculate via GIS)
ACRES	Acreage of the site calculated by the GIS from the spatial features in the data set. (Should match site form information)
SITE_	Smithsonian site number in SHPO format (ex 5ME.4000 or 5GF.342).
BND_CMPLT	Boundary completeness. Refers to the completeness of the site boundary. Values for this field will either be Y (YES the boundary is complete) or N (NO the boundary of the site is not complete or unknown) or 9 if the completeness of the site boundary has not been checked.
VER	(LEAVE BLANK for OAHP use)
DATE	Date site was digitized in GIS.
LINEAR	Enter 1 or 0. A "1" denotes that the site is a linear site. A "0", the default, is used for all non-linear sites.
ZONE	This is the UTM zone in which the site is located.
X	The X coordinate in UTM meters of the center point of the site (can be automatically calculated by GIS but must match with info on site form)
Y	The Y coordinate in UTM meters of the center point of the site (can be automatically calculated by GIS but must match with info on site form)
SOURCE	Source of the data (consultant's firm or company name)
CONF	Confidence given to the spatial accuracy of the digitized feature. Values for this attribute consist of LC (Low Confidence – ex: digitizing from hand drawn maps, or not field checked), HC (High Confidence – collected via GPS units in the field) or P (Paleontological).

SURVEY ATTRIBUTE TABLE

Attribute	Definition
ID	Unique sequential numeric ID for a given spatial feature. (LEAVE BLANK)
AREA	Area of the spatial features in the data set
PERIMETER	Perimeter of spatial features in the data set
ACRES	Acreage of the survey area calculated by the GIS from the spatial features in the data set
DOC_	Unique SHPO number referring to a specific report document.
CONF	Confidence given to the spatial accuracy of the digitized feature. Values for this attribute consist of LC (Low Confidence – ex: digitizing from hand drawn maps, or not field checked), HC (High Confidence – collected via GPS units in the field) or P (Paleontological).
VER	(LEAVE BLANK FOR OAHP use)
ZONE	UTM Zone the survey is located in. If a survey crosses two zones, digitize it in the zone in which the most land is covered.
X	The X coordinate in UTM meters of the center point of the survey.
Y	The Y coordinate in UTM meters of the center point of the survey.
AGENCY_	Any project number unique to the agency responsible for the document (BLM Numbers).
SOURCE	Source of the data if received from an external source. (Consultant Firm or Company Name)
DATE	Date the shapefile was created.