Guidance for submitting GeMS-compliant map databases

NOTE: This guidance was developed by staff associated with the National Geologic Map Database (NGMDB), to assist State, Federal, and University authors in: (1) preparation of GeMS-compliant GIS files, and (2) submittal for publication and for repositing in the NGMDB's Trusted Digital Repository.
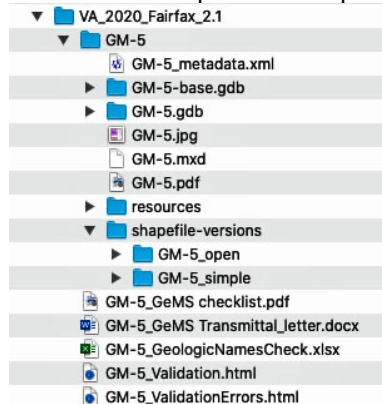
The GeMS website (https://ngmdb.usgs.gov/Info/standards/GeMS/) provides links to the (ArcMap and ArcGIS Pro) scripts for checking your map database for GeMS compliance. These scripts check for topology and content adherence to the GeMS standard and provide possible matches between Geolex and the formal geologic names used on your map. We recommend that you execute the scripts iteratively, as you build the map database, rather than waiting until just before submitting the files.

The GeMS zip file should be submitted via the NGMDB's Connect web site (https://ngmdb.usgs.gov/connect/). If you don't have a login, please request one via ngmdb@usgs.gov. If you have technical questions about GeMS, please contact us at gems@usgs.gov. If you have questions about the submittal process, please contact us at ngmdb@usgs.gov.

Users will download these GeMS files, and so we strive to provide some commonality among them, hence the guidance given below. That commonality also will, in the long term, help map authors, their agencies, and the NGMDB. As you prepare your GeMS files, please monitor the total size when bundled into a zip file. It's been our experience that GeMS zip files for typical geologic maps of 24K and 100K scale are in the range of 20-50 MB. If your zip file exceeds the NGMDB's current file size upload limit (100 MB), please contact us at ngmdb@usgs.gov, to determine how to submit the file. For map compilations, file size may greatly exceed our current upload limit, and we'll provide guidance for you. As this submittal process evolves, we may need to increase our upload limit.

Please follow this guidance, and contact us with any questions or concerns:
- The submitted GeMS files must be contained in a single .zip file (i.e., no zip files within that zip file).
- When preparing your submittal, please consult the details provided in the GeMS documentation (https://pubs.er.usgs.gov/publication/tm11B10); see especially Tables 3, 4, and 5, but note that those Table's specification for several zip files was intended for data publications, whereas here, we are specifying a requirement for an archival, single zip file.
- Please use the Checklist (at the GeMS site, under "Resources") to ensure that you're including the required files, and include it in the zip file. The Checklist is intended to assist you, and will not be the final determiner of whether your submittal is GeMS compliant. The Checklist is in PDF format, but you may submit it in a Word or text document if you so choose.
- Regarding how the zip file should be named and organized, any filename is permissible, but we recommend this convention: <State postal code>_<Federal Fiscal Year of award>_<a name for the map>_<version number>.zip. Syntax for the version number is suggested to be <major>-<minor>. For example, "VA_2020_Fairfax_2-1.zip".
- Any file organization is permissible, but we recommend a simple structure as shown below. This structure includes the base map and the simple version of the shapefile, although neither is required:

- If you include photos, charts, and graphics in the resources directory, we suggest they be of moderate resolution (e.g., 150 dpi) so that file size can be kept to a minimum without sacrificing readability.
- If your GeMS package exceeds the above-mentioned upload limit (100 MB), please consider the following:
  - Has the geodatabase been compacted? Compacting cleans storage and unused space that results from frequent editing and can greatly reduce the file size.
  - Will omitting the print-quality (300 dpi) PDF sufficiently reduce the size of the zip file? If so, please just include a browse graphic (e.g., 150-200 dpi jpg) in the zip file, and contact ngmdb@usgs.gov to submit the PDF separately (i.e., not through the GeMS submittal form). This situation is especially common for map compilations that include several published maps.
  - The simple version of the shapefile is not required, and so you may wish to omit it.
- If the base map you used is customized and not available online, and you wish to include it in the submittal but the zip file exceeds our 100 MB limit, please contact us at ngmdb@usgs.gov and we will arrange to upload it using a method other than the NGMDB Connect site.