**Basemaps in GeMS questions**

1. How to include basemap web services in GeMS packages?

-Basemap data are not necessary for GeMS deliverable

-as a record of what was used, needs to be recorded (in Miscellaneous Map Info table or map metadata), don’t list as a data source unless it was used in the interpretation

-put in map metadata rather than database metadata

-For any basemap data, could publish it first and link to it

1. Include shading and DTMs?

-Refer to other published source if possible; if you want to produce a basemap dataset for the geologic database, put the basemap data in another geodatabase folder

-For buried surfaces from borehole data, isolines, etc., include as a new interpretation in the map geodatabase. Often this data deserves its own publication.

1. Is there any particular format the basemap data should be in, mxd’s, etc?

-Feature dataset in geodatabase; if not immediately relevant to the geologic interpretation, put it in a different folder in appropriate OGC format in the GeMS map package

-MXD is nice. Getting the data is more important than a pretty MXD.

-Can we include geotiff as basemap data, instead of including a MXD? Yes

1. Should basemap fonts, styles, etc. be included in the package?

-Yes, if you are including basemap data in the package that requires it to reproduce the map package

1. What kind of metadata is required for basemaps, if any?

-It has to pass the state’s digital review

-NGMDB can’t speak for STATEMAP requirements right now though

**State round-robin**

Lainey AL – USGS 7.5 minute topo tiffs are their basemaps, younger mappers include shaded relief. I haven't fully utilized it, but the USGS National Map Topographic Map Template does a pretty good job of pulling all the vector data (once you've downloaded it) and recreating a USGS topo quad - while allowing more customizability of what data you want included. Haven’t produces a GeMS compliant map yet.

Mike AK – Serving basemaps in many different ways, maybe moving to services? Exploring the use of vector tile caches for basemaps

Linda ID – Very similar to AL, tiffs from topos, with shaded relief

Mark IL – 7.5 minute topos in Illustrator; Illinois primarily uses the latest USGS 7.5 minute quad topo. We construct the basemap using a combination of loading the vector data from the PDF into Illustrator using MAPublisher and the geodatabase containing the topo data. We have our own standards for symbology - those are applied in Illustrator. We start off with the USGS contours but when the geologists request it, we create our own contours from the lidar. Record quality level of lidar contours.

Matt IN – Use state data, Open Street Maps, and USGS sources; create own contours with LiDAR; using ArcGIS Pro (not Illustrator, because of file management)

Chris ME- vector basemaps are stored in database; use different data sources such as USGS GNIS and E911, generate own basemaps from sources

Vicki MO – create basemaps with state data

Jacque MN – MN creates their own basemaps, they use DNR lidar for contours

Greg NH – creating basemaps from lidar and other sources, they create their own contours, would like to include the basemap data in GeMS package

Etienne NRCAN – they have a tool that extracts the topo bases for each map, it’s a separate geodatabase with MXD, stylefile and fonts, everything is included

Douglas, Jim Ohio – they don’t include basemap info with digital maps and haven’t submitted a GeMS package yet; they use a cache of topos, statewide road network, and USGS topos

Sarah G West Virginia – first GeMS deliverable this year; in the past included the basemap to recreate maps; currently mappers are using lidar, USGS, USFS, and NHD data; would like to include a shaded relief topo map with GeMS package

James WY – create basemaps from USGS 7.5 minute topos, they don’t include basemaps with deliverables right now

Caroline WI – use National Map or state agency data. Have not included the basemap data in any geologic databases, GeMS or otherwise; do a lot of surficial mapping, i.e., hummocky ground; peat mapping (as map unit, currently)