STATE OF ALASKA

Department of Natural Resources
Division of Support Services

INFORMAL REQUEST FOR PROPOSALS (IRFP) 10-028-23
GEOGRAPHIC INFORMATION SYSTEM (GIS) SERVICES

ADDENDUM 1

ISSUED JUNE 12, 2023

This addendum is being issued to answer questions from vendors.

Important Note to Offerors: You are required to sign and return this page of the addendum document with your proposal. Failure to do so may result in the rejection of your proposal. Only the IRFP terms and conditions referenced in this addendum are being changed. All other terms and conditions of the IRFP remain the same. This Addendum is hereby made part of the IRFP and is a total of seven pages.

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COMPANY SUBMITTING PROPOSAL
AUTHORIZED SIGNATURE
DATE

QUESTIONS SUBMITTED BY OFFERORS AND ANSWER FROM THE STATE

Question 1:   *What level of complexity would you rate the example file geodatabase as relative to the 11 maps to be digitized? More, less, comparable?*

Answer 1:   The example file geodatabase (Circle Mining District Bedrock Geologic Map, https://dggs.alaska.gov/pubs/id/2515) is representative of a moderately complex geologic map in this context. DGGS asks the offerors to compare the raster image (PDF or ArcGIS Online Web Map) versions of the maps included in the IRFP to gauge the individual and relative size and complexity of the output geodatabases to be populated. The web locations of the map PDFs are indicated in the IRFP (Sec. 3.03 #4); the AGOL Web Map URL is https://geoportal.dggs.dnr.alaska.gov/portal/home/item.html?id=783010d1fcc0458a961c17cc6565e521.

Question 2:   *How many hours did the State spend on the feature creation, attribute editing, and QA/QC for the file geodatabase?*

Answer 2:   DGGS expects the time required to digitize the different maps to vary depending on the map complexity. We do not have a precise estimate of the time required for any individual map to be digitized, but believe the project is able to be accomplished according to the project schedule. Use of the ArcGIS Pro feature templates, provided by DGGS as described in the IRFP, should make digitizing linework and attribute assignment very efficient.

Question 3:   *With a three-month contract period for a total of 11 maps, is the contract winner expected to be able to provide a team or would an individual qualify to perform all the work?*

Answer 3:   The composition of the project team is left to the discretion of the offerors; the IRFP only requires that the offeror demonstrates experience and qualifications (Sec 4.03) and an understanding of the project (Sec. 4.04) that suggest the work can be accomplished.

Question 4:   *Please provide us with the list of features to be captured for the 11 projects within this contract.*

Answer 4:   All geologic data in an individual map's legend will be digitized using the ArcGIS Pro project, geodatabase, and feature templates to be provided by DGGS. Please refer to the map legends viewable on the original map sheets (see Answer 1 for online map locations). No basemap, cross section, or correlation of map units data will be digitized. Please see Attachment 1 to Addendum 1 for an example of the Digitizing Notes created for each map.

Question 5:   *Please provide us with list of attributes to be captured for each of the features.*

Answer 5:   The attributes to be captured for each of the features can be seen within the Esri feature classes and tables from the example AK GeMS geodatabase (see Answer 1). Many of the attributes, such as "existence_confidence" and "location_confidence_meters", will be automatically assigned by using

the ArcGIS Pro feature template and associated symbol when creating a feature; others will be readily calculated using a table join to the description_of_map_units table. DGGS expects that using the provided feature templates will make attribute assignment very efficient when compared to individually creating, symbolizing, and describing with attributes the features on the maps. Please see Attachment 1 to Addendum 1 for an example of the Digitizing Notes created for each map.

Question 6:   *Please clarify if features like contours need to be captured in any of these projects.*

Answer 6:   No basemap information, such as elevation contour lines, is to be digitized.

Question 7:   *We noted that a few scans of the maps are not legible, will better scans be provided for these maps.*

Answer 7:   The quality of the original paper maps included in the IRFP is variable, and that is evident in the scanned digital versions. DGGS has reviewed and re-scanned several of the maps prior to the IRFP publication, and we believe them to be legible, though some are more easily interpreted than others. Offerors should consider this in their proposals.

ATTACHMENT 1

Iditarod_b4_b5_quads Digitizing Notes
https://dggs.alaska.gov/pubs/id/2278

Digitizing Guidelines - General

1. The appropriate coordinate system for the map, the geologic_map feature dataset, and the product_info feature class have already been chosen, set and should not be changed or reprojected.
2. Digitize all features within the main mapped area (product_info boundary), no map marginalia information or smaller inset maps need to be captured during digitizing.
3. All features to be digitized within the map area will fall within the feature classes that have been provided. No new feature classes should be created.
4. All features to be digitized should use the provided feature templates. Each map will have feature templates generated for the data present in that specific map area. Do not create features without using the feature templates.
5. Fill out the applicable fields for each feature as defined by the feature template. Only fields specified within the template need to be populated.
6. Use the appropriate template for the feature digitized. If confusion occurs, ask DGGS before proceeding.
7. Decoration symbols such as fault types (i.e. right/left lateral, thrust, etc), Up/Down notations, plunging fold symbols, feature names, etc. can be ignored, and will be captured later during further DGGS conversion.

Digitizing Guidelines – Feature Class Specific

1. contacts_and_faults
   a. All contact and fault features are captured in the same layer.
   b. Line features should be planarized.
   c. Line features should be snapped to each other leaving no gaps or dangles.
   d. Any line intersecting the map boundary should be snapped to the product_info polygon.
   e. Any line that is on the map boundary should use the specific "Boundary – outer edge of map" line style provided in the feature template.
   f. Map boundary lines should be coincident with the product_info polygon.
   g. All bodies of water should be digitized with the "Boundary – contact with hydrographic feature" line style.
   h. All contacts_and_faults lines should follow the provided topology.
2. map_unit_points
   a. Not a specific feature on the map that must be digitized.
   b. One point will be placed in each unique lithology with corresponding correct lithologic unit.
   c. Only one point needed for a bounded lithology.
3. orientation_points
   a. For each orientation point, three attributes will need to be entered, which are map unit observed, inclination, and azimuth.
   b. Use the feature template in the create feature pane to place the correct symbol for the given orientation point.

    c. Record the map unit abbreviation (use DMU map unit names) for the map unit in which the orientation point is included. Prompted before placing point.

    d. Record the inclination for the orientation point read directly from the map, will be from 0 to 90 degrees. Prompted before placing the point.

    e. Place the orientation point on the correct map location.

    f. After placing the point, click the Attributes button in the Selection section within the Edit ribbon at the top of the page.

    g. Then use the azimuth field within the Attributes pane to set the correct azimuth for the given orientation point. You can use the up/down arrows to scroll through the numbers. Values will be from 0 to 360 degrees. Hit the Enter button and make sure that the Auto Apply button is checked at the bottom of the screen. Adjust the azimuth until the placed digital orientation point matches the orientation of the symbol on the map.

Digitizing Guidelines – Map Specific

1. Igneous Dikes
   a. On this map there are three different igneous dike types. TKdi can be mapped as a polygon and will be mapped using the contacts_and_faults feature class. TKd, TKdi, and TKdm can be represented on the map as line features and will go into the map_unit_lines feature class.
2. TKdi will have an associated map_unit_point when forming polygons, while the dikes represented by line features will not.

Using Topology Editing

Topology is the way that interrelated features are organized and connected in space. It can be thought of as how the points, lines, and polygons interact and are related spatially. In the maps, we define given topology rules that the GIS software will check. It is good to run topology checks often when digitizing and especially before submitting weekly work to DGGS. For more general information on map topologies see the following website: Topology— ArcGIS Pro | Documentation, or watch an introduction video at: https://youtu.be/ksAY1QJSKi4.

1. Make sure that the topology feature class is added to the map from the geodatabase.
2. To start editing with a topology, first click on the Edit tab at the top of the ribbon.
3. Then select the topology from the drop down menu in the Manage Edits section of the ribbon. The topology name will be Topology_Digitizing. This topology will only look for errors within the contacts_and_faults feature class.
4. Click on Error Inspector, and a new window will open.
5. Expand the view extent until all digitized lines can be seen.
6. Within the Error Inspector window, click on the Validate button. You will now receive a list of errors that were found.
7. You can sort by types of errors, and zoom into individual issues. Work through fixing the errors and re-validate to make sure the errors have been solved. When Validate is running, it will only apply the topology rules to what is within the view extent. Make sure to have full extents when checking for errors.
8. Faults that do not end on another line, will show up as topology errors, known as dangles. These dangles with faults are common and can be marked as exceptions.

Feature Classes with Data Descriptions and AK GeMS Symbol Codes

map_unit_points

1. Map unit points for each lithology – one point for each lithology feature

cartographic_lines

1. Cross Section lines – shown locations of cross sections – (31.10)

fossil_points

1. One symbol for both plant and invertebrate fossil (10.01.01)

geochron_points

1. K-Ar age date localities – (ak.102.02)

geologic_points

1. Pingo – (14.01)
2. Adit – (19.03.09)

orientation_points

1. Strike and dip of beds
   a. Inclined – (06.02)
   b. Vertical – (06.03)
   c. Overturned – (06.04)
2. Strike and dip of cleavage
   a. Inclined – (07.02)
   b. Vertical – (07.03)
3. Strike and dip of joints
   a. Inclined – (04.03.02)
   b. Vertical – (04.03.03)

structure_lines

1. Anticline
   a. Identity and existence certain, location accurate – (05.01.01)
   b. Identity and existence certain, location inferred – (05.01.05)
   c. Identity or existence questionable, location inferred – (05.01.06)
2. Syncline
   a. Identity and existence certain, location accurate – (05.05.01)
   b. Identity and existence certain, location inferred – (05.05.05)
   c. Identity or existence questionable, location inferred – (05.05.06)

contacts_and_faults

1. Contacts
   a. Identity and existence certain, location accurate – (01.01.01)
2. Boundaries
   a. Outer edge of map – (31.08)
   b. Contact with hydrographic feature - (30.02.29)
3. High Angle Fault
   a. Identity and existence certain, location accurate – (02.01.01)
   b. Identity and existence certain, location approximate – (02.01.03)
   c. Identity and existence certain, location concealed – (02.01.07)
   d. Identity and existence questionable, location inferred – (02.01.06)
4. Thrust Fault
   a. Identity and existence certain, location accurate – (02.08.01)
   b. Identity or existence questionable, location accurate – (02.08.02)
   c. Identity and existence certain, location concealed – (02.08.07)

geologic_lines

1. Traces of bedding from aerial photographs – (01.01.01)

map_unit_lines

1. TKdm - intrusive dike - (0410)
2. TKdi – intrusive dike – (AX30)
3. TKd – intrusive dike – (2760)

cartographic_points

1. Major oxide chemical analysis – (31.21)
2. Bearing of paleocurrent – (01.04.07)
3. Geochemical sample locality – (31.21)