**Sustainability Scenarios for NGDS Hub Service Deployment and Metadata Collection and Management**

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Four NGDS hubs have been thus far tasked with hosting web services for thier surrounding data providers (other state surveys or institutions) who lacked the technical capability to host their own data in web service format. NGDS tier 3 data services are discrete data types where aspects are controlled by static schemas. One aspect that is specified in the schema is the layer name of a given data type. As the hubs host services of these data types from mulitple states, they therefore serve multiple services of the same data type. The current construct of the CKAN NIAB (Node-In-A-Box) application is problematic for hubs or other entities who might serve multiple Teir 3 web services of the same type. This is due to the GeoServer web server platform used in NIAB where only one layer name can exist in any given GeoServer instance. Thus, NGDS hubs may not be able to use NIAB for future service deployment and management as is recommended for individual data providers. The following scenarios express the options available for hubs to continue serving data for surrounding data providers.

Scenario 1: Hubs continue to use ArcGIS Server; Hubs continue to use the UI at repository.stategeothermaldata.org

Currently, NGDS hubs use ArcGIS software to deploy web services and manage the associated data formats (geodatabases, feature classes, data tables). When AASG project deliverables (datasets) are deployed as web services, a metadata entry is made at repository.stategeothermaldata.org for that dataset with distributions that include the links to the live web services (WMS, WFS, ESRI rest page).

The current workflow of AASG deliverables (data) processing includes the creation of metadata for the services, where a ‘New Resource’ is created at repository.stategeothermaldata.org. Moving forward with this scenario, hubs will be resposible for creating metadata at repository.stategoethermaldata.org , which will require minimal additional training for hubs as they are already familiar with the interface. The biggest hurdle will be to assist the hubs in properly integrating the metadata entry point into their current workflow.

Scenario 2: Hubs continue to use ArcGIS Server; Hubs use NIAB for creation and management of metadata for services, but not service deployment

As creating Teir 3 web services using NIAB becomes problematic for hubs, this scenario proposes that services are deployed as usual with ArcGIS Server. Instead of entering the metadata for the services at repository.stategeothermaldata.org, the hubs would use NIAB simply for the creation and management of that metadata.

When a “Link to a data service” is added as a resource in NIAB (creating a metadata record), it is possible to add multiple service distributions. These distributions are the WMS/WFS links. Once a metadata record is created for a service in NIAB, locate the Edit button on the page of the resource. Here, go through the “Link to a data service” workflow once more to add an additonal link. This will be added to the same metadata record. The hurdle here is much the same as Scenario 1; hubs will decided which methods of metadata management best fit their workflow.

Scenario 3: Hubs begin using NIAB for service deployment and metadata creation and management

As outlined in the introduction text above, GeoServer web server will not allow mulitple services having the same names. These names are specified by the schema, and must be used for the service to be schema-conformant. As NGDS hubs serve the same data types in web service format for multiple states, the most likely scenario moving forward is Scenario 1 or 2.