

## National Geospatial Data Asset (NGDA) Lifecycle Questions & Baseline Maturity Assessment Tool

### How to Calculate the Maturity

The maturity metrics are designed to include activities that represent no activity to a very mature activity for each question presented. The lowest level is subsequently ranked the lowest, conversely the highest is ranked highest. Using this approach each question has anywhere from 3-5 metrics. These are broken out into percentages from 0-100% as in Table 1:

Number of metrics for Assessment Question	Metrics Applied
3	0%, 50%, and 100%
4	0%, 33%, 66%, and 100%
5	0%, 25%, 50%, 75% and 100%
NA	Question not included in total. Only Question 5 has a NA option.

The dataset is then assigned a maturity for each stage as found in Table 2.

Maturity	Aggregated Value	Visualization (See Figure 1)
No Activity	0-0.99%	
Early maturity	1-33.9%	
Mid-level maturity	34-66.9%	
More mature	67-100%	

Figure 1 is an example of how the maturity for each dataset is displayed including the general questions and lifecycle stages and the Theme rollup.

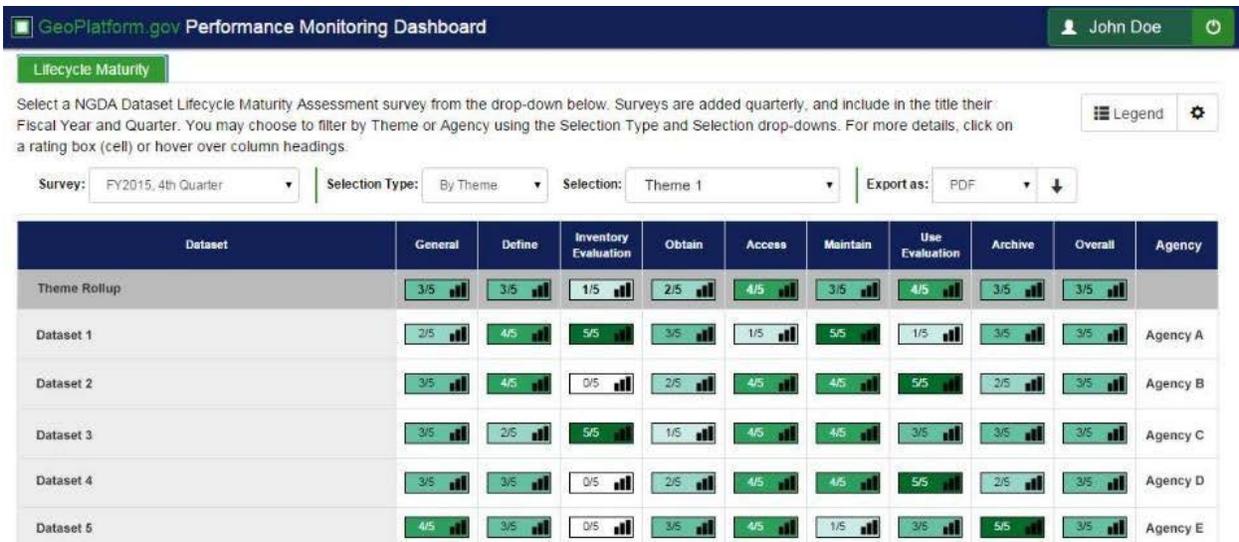


Figure 1 - Example of how the aggregated maturity responses appears in the GeoPlatform.gov.

## Theme Maturity Rating Rollup Methodology

The Theme Maturity Rating (depicted as a shaded green indicator on the NGDA Lifecycle Assessment Maturity (LMA) Dashboard) is an estimate of theme maturity derived from LMA survey results. It is calculated using the rating system and equations defined below.

A given Theme Maturity Rating value is determined from the aggregated maturity ratings determined from NGDA Lifecycle Assessment Maturity Survey results. An aggregate average of the ratings is calculated for all survey question-answer pairs pertaining to each of the Theme's constituent NGDAs. Rating values are assigned depending on the number of allowable answers for a question. For example, a question with 3 answers has assigned maturity rating values of 0%, 50%, or 100%, a question with 4 answers has assigned maturity rating values of 0%, 33%, 66%, or 100%, and so forth. If no answer is supplied for a question (which might be the case if an LMA is in progress), it is eliminated from the calculation.

The following equation is used to calculate the Theme Maturity Rating for Theme  $i$  ( $R_i$ ):

$$R_i = \sum_{j=1}^n r_j / n$$

Where  $R_i$  is the aggregate maturity rating for Theme  $i$ , and  $r_j$  is the average maturity rating (a normalized value from 0 to 1) for all constituent questions-answers pertaining to dataset  $j$ , for  $j = 1, n$  datasets, i.e.,

$$r_j = \sum_{k=1}^m a_k / m$$

Where there are  $k = 1, m$  questions for dataset  $j$ , and  $a_k$  is the rating for each answer  $k$ , e.g., the value 0, .33, .66, or 1, for a 4 part question. The result from the equation is not weighted meaning that all questions and datasets are treated equally.

## Questions

Please contact the Lifecycle Maturity Assessment Help Desk at [NGDA\\_LMA\\_help@fgdc.gov](mailto:NGDA_LMA_help@fgdc.gov).