

# Minnesota Geospatial Image Service Sustainability Plan

## Background

The MnGeo Image Server is a valuable resource for agencies through the state. It is managed by MnGeo. The goal of this service when it was created in 2007 was to "provide versatile access to large statewide raster databases according to the Open GIS Consortium's Web Map Service (WMS) standards". It started with 6 layers.

Since then, this image service has become one of the Minnesota Geospatial Community's most popular resources. As of July 2018, there were 77 image layer sources taken from 1991 to 2017. These layers take 1.4TB of disk space. We are adding 70GB<sup>1</sup> per year. Despite the costs of disk space trending downward, this growth appears unsustainable.

## Goal

At the request of MnGeo and as directed by the Geospatial Advisory Council (GAC), the goal of this workgroup is to:

- A. Create a "decision matrix" to categorize image layers into a lifecycle and ultimately retirement\* from the MnGeo service.
- B. Establish Stakeholders that can use the decision matrix to evaluate layers for categorization on a periodic basis.
- C. Communicate to the Minnesota Geospatial community, by way of the GAC, the status of layers, especially layers that should be considered for retirement and/or archival.

\*Note: that we're not suggesting "getting rid" of data so that it is never retrievable again.

## Stakeholders and Roles

### Maintenance Team

A small maintenance team should be formed with representatives from a range of Minnesota Geospatial perspectives. The Maintenance team will meet at least annually to:

- Review existing layers
- Make layer status changes based on Decision Factors
- Notify GAC of recommended layer status changes
- Consider decision factors and make changes if necessary
- Maintenance team should avoid recommending "too many"<sup>2</sup> layers changing status at one time

## GAC

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<sup>1</sup> Average of 70GB per year from 2016-2018.

<sup>2</sup> This is deliberately vague in order to avoid being too prescriptive. It will be up to the team to decide on a reasonable limit each year.

The GAC is responsible for establishing a Maintenance team. The GAC is also responsible for maintaining an archival workgroup and establishing a liaison between the maintenance team and the archival workgroup.

The GAC passes layer status change recommendations to MnGeo.

## MnGeo

MnGeo should keep a list of layers and their status. This list should be updated when new layers are added, or when the GAC relays a change in status for an existing layer.

MnGeo is also responsible for keeping usage statistics and other layer metadata that the Maintenance team can use for layer status change decisions.

## Decision Factors

### Usage

Usage is one easily tracked measure of the value of an imagery layer. In FY 2018, 33 layers each had less 0.1% of total usage. 33 other layers had between .1 and .99% of total usage and 10 layers had more than 1% of total usage. This proposal recommends that layers with less than 0.1% usage over the course of a year should be considered “low usage”.

### Other Factors

When the Maintenance Team meets to consider layers for status changes, it should review the low usage layers against these factors listed below. The maintenance team may decide that one or more of these factors warrants retaining a layer in its current status.

#### *Coverage*

13 layers cover the entire state. Many layers cover portions of the state larger than a county. Many others cover one county.

#### *Resolution*

Other things being equal, higher resolution has more value than lower resolution.

#### *Time of year (leaf on/off)*

It's better to include multiple seasons within the collection, since they meet different user needs. Therefore, the service should retain the most recent *statewide* imagery from summer and the collective “leaf off” seasons (fall, winter, spring).

#### *Historical Significance*

Several years in a row are not necessarily valuable, but the first year after or before a long hiatus has higher historical value.

## Layer Status

The Following status definitions would be used to implement this sustainability plan. Each time layers are evaluated against the Decision Factors, they have the potential to “move down” amongst these statuses.

### Active

Active layers are the most frequently used layers in the service. They are available to all users all the time<sup>3</sup>.

### Retirement Candidate

These layers have fallen below the threshold required to be considered active but continue to be available in the service. After a predetermined period<sup>4</sup>, a candidate layer will transition to an inactive layer.

### Inactive

Inactive layers are no longer available in the service. However, if a sponsor comes forward, the layer can be reactivated to the service. Layers will remain in the Inactive state for one year unless a sponsor is found.

During this time users can request a disk copy of the imagery.

### Sponsored

A sponsored maintained within the service via an agreement with a sponsor to provide compensation to MnGeo to recover costs.

### Retired

A retired layer is a layer no longer available in the MnGeo Image service. Restoring a retired layer to the service is outside the scope of this document.

## Maintenance Plan

This Maintenance Team should have annual meetings at a minimum, preferably in the first quarter of the calendar year, to determine which layers should change status (progressing through steps from active to retired as necessary). The maintenance team should be merged with the ad-hoc team that occasionally gathers to evaluate and recommend changes to the Composite Image Service. The maintenance team should also consider this plan's effectiveness and recommend changes to the GAC on layer status and decision factors as necessary.

### Status Changes

The maintenance team should change layer status as follows:

- Layers which have been retirement candidates for six months and are no longer low usage, should be changed to active status.

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<sup>3</sup> All current layers are considered "Active" until this plan is implemented and status changes are evaluated.

<sup>4</sup> Initially, six months to one year, depending on the recommendations from the team and the GAC.

- An organization which wishes to keep a retirement candidate or inactive layer in the service should negotiate directly with MnGeo to get the layers status changed to “sponsored”.

