# COMPOSITE IMAGE SERVICE UPDATE GUIDE

## OVERVIEW

Formerly known as the "Best" image service, the goals of the Composite Image Service are to provide a single layer image service with the "best" image available for a certain extent. Our primary interest is with the Metropolitan Area of the Twin Cities and the State of Minnesota. Our secondary interest is with areas bordering the state of Minnesota, especially Wisconsin counties close to the metro area.

This image service is intended only to be a backdrop or reference layer and not for any specific image analysis purposes. This service will be annually updated as new and improved image datasets become available. These new image layers may be 'stitched' into the existing service, or replace image layers in the service.

The value of this service is that GIS web applications and desktop projects can continue to point to the same service while remaining blissfully unaware of the additions or subtractions of image sets, scale thresholds, and layer management. This will save development and maintenance time by eliminating the need to do image management, or update the application as new image data sets emerge.

Such services currently exist from commercial providers, but they often lack available high-resolution photography, underperform compared to the Minnesota Geospatial Image Service, come with subscription fees, or display via incompatible projections.

This document describes some considerations for evaluating "best".

## AVAILABILITY

Imagery considered for the Composite Image Service must be available on the Minnesota Geospatial Image Service.

## IMAGERY CONSIDERATIONS

Images to be included in the Composite Image Service can be objectively and subjectively evaluated on several different qualities, such as color, currency, resolution, coverage, season, leaf cover and image quality. No quality is definitively more important than another, and different qualities may have different priorities at different scales. However, some general guidelines have emerged:

- True color imagery is preferred.
- Recent imagery is preferred to older imagery.
- Imagery acquired during the winter months is not preferred.
- Leaf-off is acceptable at large scales (greater than 1:10,000).
- Lower resolution is preferred at smaller scales.
- Higher resolution is preferred at larger scales.
- Datasets with larger coverage areas are preferred to patchy coverages.
- Image quality is subjective to a certain degree – images may meet or exceed technical specifications of other imagery but still be rejected based on image quality.

Since updates are anticipated to be more frequent at larger scales, candidates for addition can be *initially evaluated* by balancing three competing considerations: currency, extent, and resolution. (While resolution is not an effective proxy for accuracy, the two will often be considered as a package in this method.) When compared to

the current base, candidates that are overweight in one area are less likely to be included than candidates that represent improvements in all three areas, or candidates that improve in one area while holding the other areas equal.
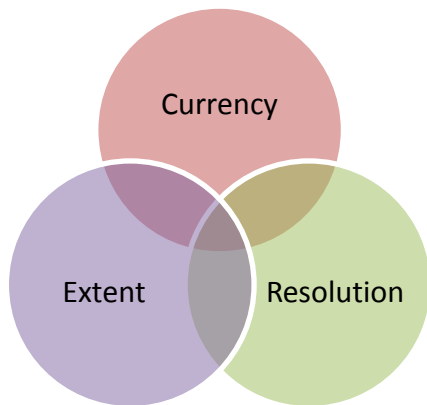


After this initial evaluation, ***all candidates must pass a final test of aesthetics***. This is admittedly a subjective test, but an important one given the purpose of the service.

### SCALE THRESHOLDS

Three categories of imagery scale thresholds are identified. These overlapping categories are small-scale (smaller than 1:125,000), medium-scale (1:250,000 – 1:10,000) and large scale (greater than 1:10,000). At small and medium scales, single image sources can accommodate the whole state and beyond. Large-scale imagery will be selected on a case-by-case basis where they improve on the medium scale.

At a minimum, we would like the service to provide:

- 100% coverage statewide to 1:125,000
- nearly 100% coverage with current 1-meter resolution imagery at scales to 1:10,000
- High resolution imagery above 1:10,000 where locally available

Approved on January 19th, 2012 by the MetroGIS Composite Image Service Workgroup:

Mike Dolbow, Dept. of Agriculture
Josh Gumm, Scott County
Matt McGuire (Chair), Metropolitan Council
Pete Olson (Technical Liaison), MnGeo
Joe Sapletal, Dakota County