March 2013

2012 NAIP Survey: Summary Report

USDA Farm Service Agency

Aerial Photography Field Office

Salt Lake City, UT 84119

Table of Contents

Section 1 – Executive Summary

The 2012 National Agriculture Imagery Program (NAIP) Survey was initiated as a means to assess the NAIP imagery based on feedback from the Farm Service Agency's (FSA) primary customers, the FSA State and County Offices. Per Notice AP-17, the 2012 NAIP Survey was distributed through a web-based medium to each FSA County Service Center via the State Geographic Information System (GIS) Specialists/ Coordinators. Each State and County Office receiving 2012 NAIP imagery (CA, CT, IL, IN, KS, KY, MA, MI, MS, MO, NC, ND, NE, NH, OR, RI, SD, TN, TX, VA, VT, and WY) was directed to complete the survey.

The survey:

⇒ establishes a standardized feedback mechanism for NAIP acquisition and delivery.

⇒ allows for adjustment of program strategy as necessary based on survey analysis.

⇒ allows for analysis of previous, current, and future year feedback to ensure continued program improvement and development.

The following is a brief summary of survey responses:

Overall survey participation rate was about 87%. Of the 22 states that received NAIP in 2012, only IL had 100% FSA County Office participation in the survey. Overall, there was high participation in the survey by the State and County Offices.

Note: The first three bullets below represent percentages that were calculated with the response of "N/A or Not Sure" removed so that only respondents that had an opinion on, or were familiar with certain farm programs were accurately accounted for.

⇒ **86%** of respondents were either very satisfied or satisfied with 2012 NAIP delivery time in regards to various farm program usage.

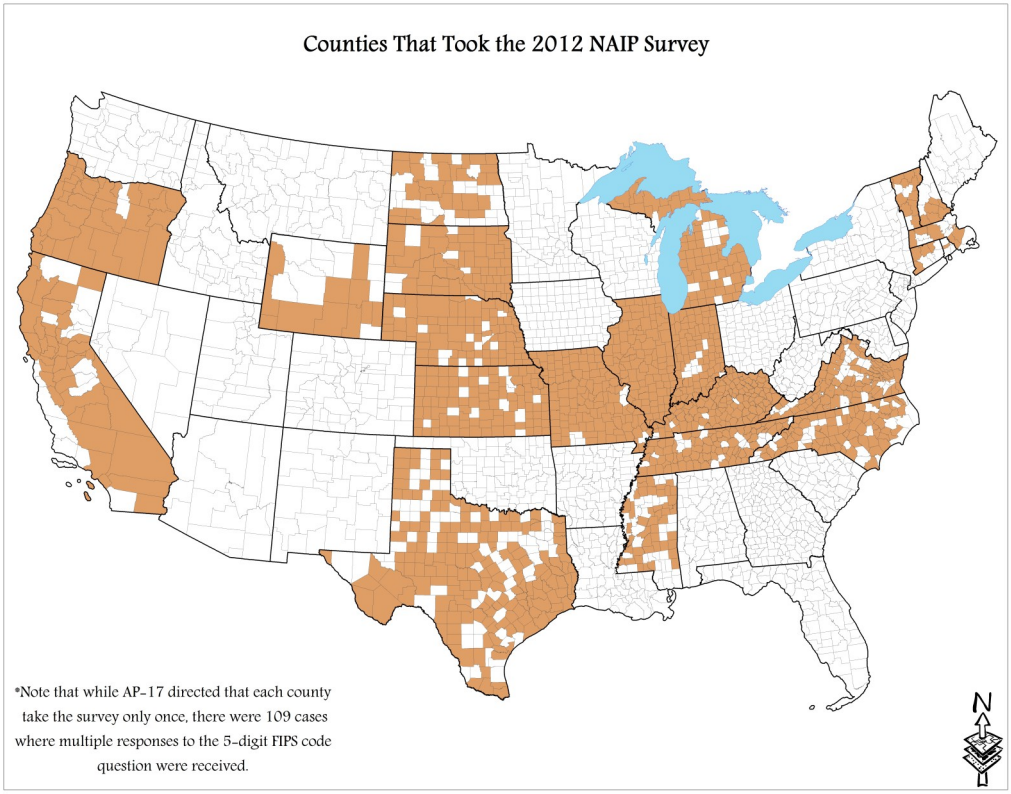
⇒ **89%** of respondents were either very satisfied or satisfied with the date the imagery was flown in regards to various farm program usage.

⇒ **91%** of respondents were either very satisfied or satisfied with the overall quality of the imagery in regards to farm program usage.

⇒ **92%** of respondents were either very satisfied or satisfied with the acquisition and delivery of the 2012 NAIP imagery.

⇒ Respondents indicated that NAIP **imagery was used 2.6 million times to generate maps**, an average of approximately 2,000 times per respondent.

The following general conclusions may be drawn:



♦ The overall satisfaction with the NAIP imagery remains high, and in fact was higher last year than any previous year. However, there is always room for program improvement.

♦ Open ended responses continue to indicate a desire for higher resolution imagery that is flown every year, and delivered as soon as possible.

♦ There appears to be an emerging requirement for image analysis and change detection services.

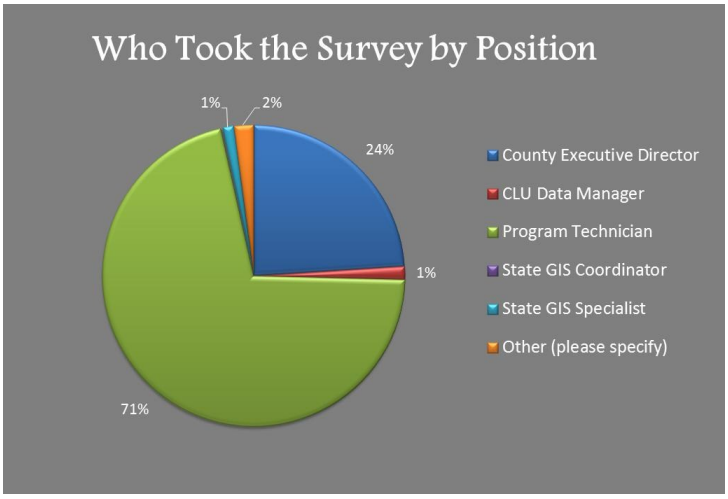
♦ Users are still generally unaware of where to obtain image acquisition date information. Additional guidance on these services may be needed.

Section 2 - Overview

In 2012, FSA completed the 11th year of the NAIP program. The USDA-FSA Aerial Photography Field Office (APFO) is responsible for the acquisition, data ingestion, quality assessment, data delivery, and archiving of the NAIP imagery. FSA continues to adjust and modify NAIP processes to keep pace with technological advances in geospatial data acquisition and delivery as well as to meet the needs of FSA Service Centers and State Offices, their primary NAIP customers.

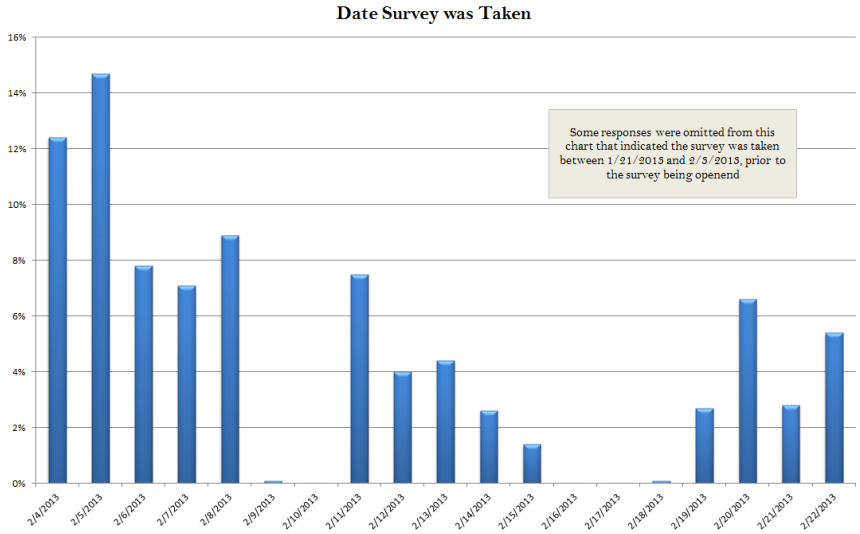
Feedback from NAIP users is vital for program improvement. To facilitate this, APFO prepared a survey for FSA State and County Office response. This is the eighth year of the NAIP survey, with several changes from previous surveys. Some questions were eliminated or modified, and new questions were created. A great deal of the 2012 survey focuses on NAIP imagery in relation to FSA farm program usage. The 2005 NAIP Survey was administered using email and spreadsheets, whereas the 2006 through 2012 NAIP surveys were completed utilizing a web survey engine. This helped alleviate human error in survey scoring and analysis for most responses.

Per AP-17, FSA State Offices were to take one survey per State Office, and County Service Centers were to take one survey per county administered. This instruction was not always adhered to and in some cases there were multiple responses for a single County. As a result based on analysis of the data, multiple responses from the same County can slightly skew the survey results.



The number of counties with multiple responses is not large, so the survey results should not have been affected significantly. That said, all responses were taken into account for statistical purposes, but any national map graphics within this report are symbolized joining only one response from each county, in a randomized manner.

Surveys were taken over a 19-day period, between February 4th and February 22nd, 2013.



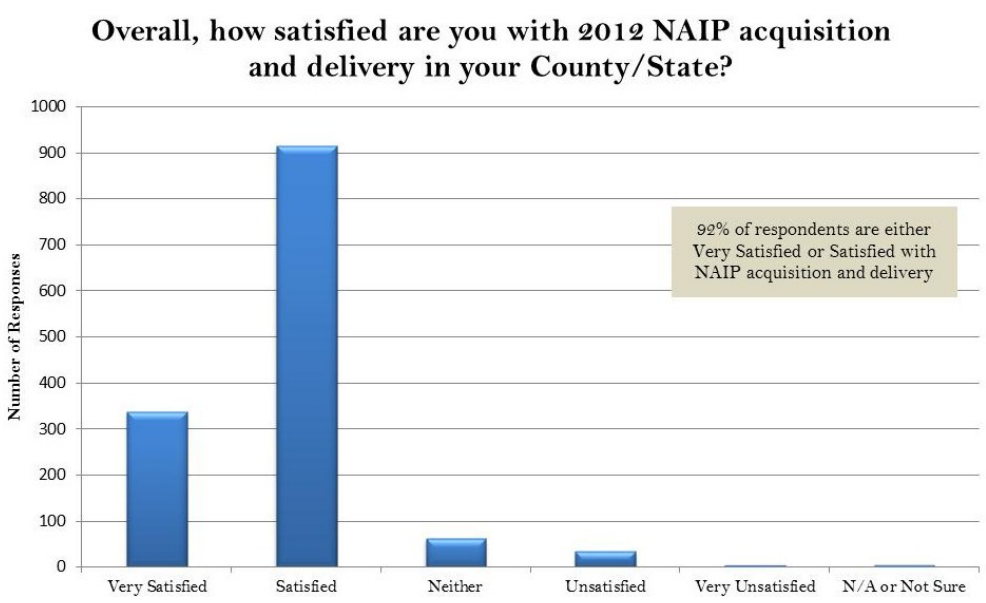
The format of the survey varied to include the following types of questions: multiple choice, open ended, and select all that apply. After the close of the survey, responses were downloaded from the survey website in a variety of formats, including a survey summary, raw answers, and filtered responses. Analysis of survey returns could be performed endlessly; it is understood that the results herein only scratch the surface of potential analysis. State GIS Specialists/Coordinators may obtain a copy of the raw results of the surveys for their state at any time by contacting the APFO Geospatial Services Branch Chief.

APFO hopes to keep the current survey mechanism stable for future years, streamlining questions and tightening user inputs as necessary. This will allow for a quality comparison of past and future survey results, enhancing feedback for program improvement.

The format of the Survey Summary Reports have remained fairly stable throughout the last several years. This report diverges from previous formats slightly in that it attempts to make the report cleaner and easier to review while adding some additional advanced analysis.

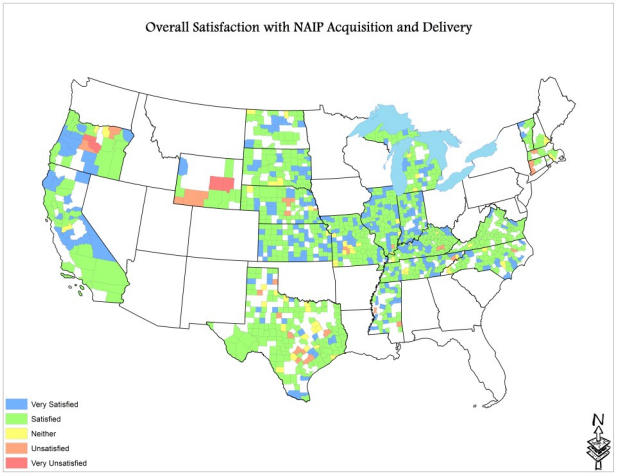
Section 3 - Summary of Survey Results

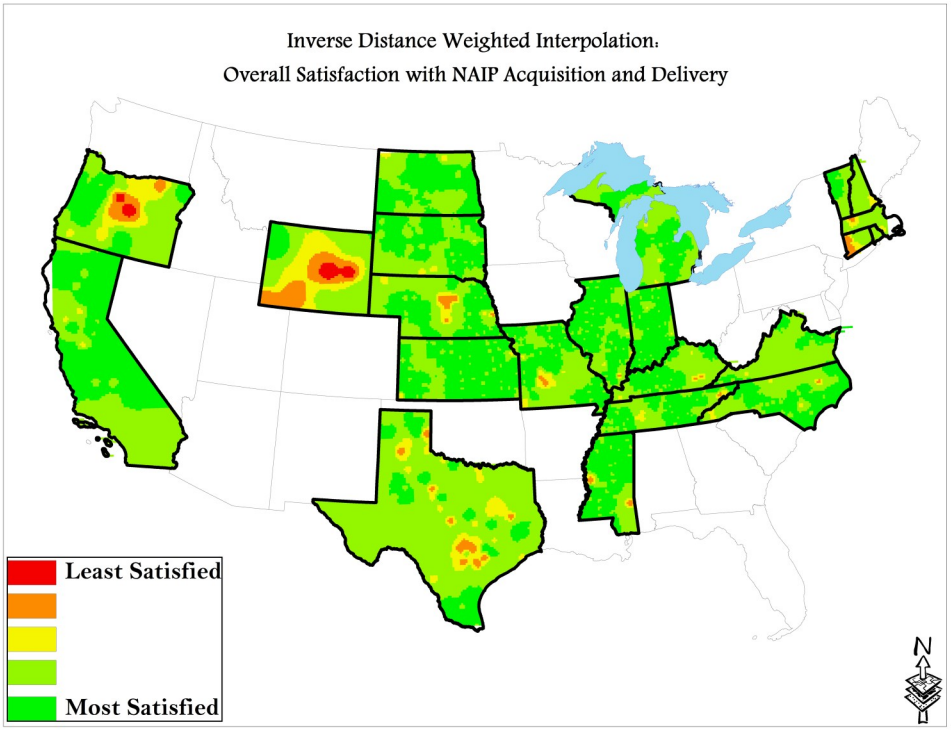
This section is a summary of survey results as they pertain to the NAIP Program. Responses to certain questions, such as name of the survey taker, date, place of work, and so forth, have been omitted.



Overall Satisfaction with NAIP Acquisition and Delivery

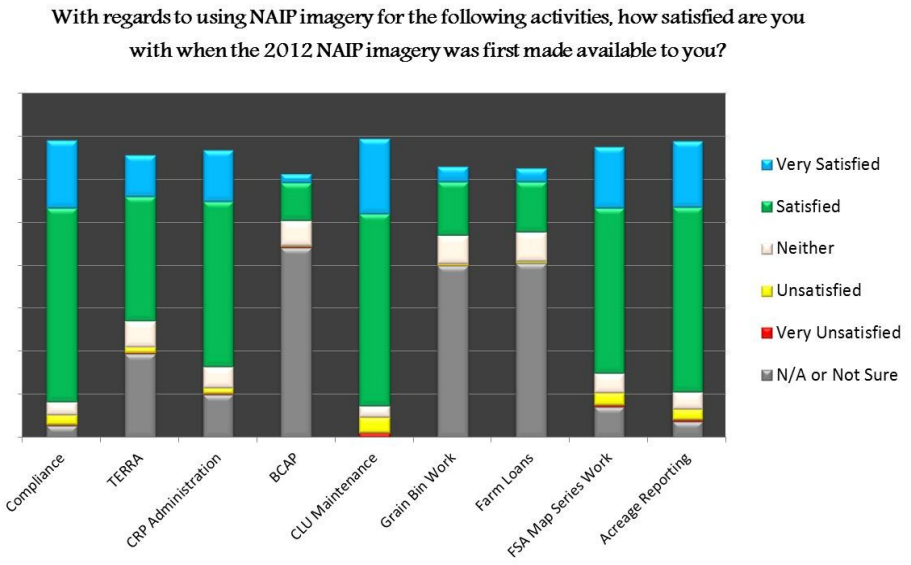
Overall, respondents are satisfied with NAIP acquisition and delivery. The chart to the right shows responses in a statistical manner, while the maps show the same responses in a geographical manner. No geographic trends are apparent in looking at the first map, which contains the raw survey response data. However, additional spatial analysis using inverse distance weighted interpolation methods, shows some potential hotspots where customers were less satisfied, in a more interpretable manner. On this map, the 2012 NAIP states have darkened outlines. Data outside of these extents should be considered erroneous. Potential issues that may exist in central Wyoming, central Oregon, and western Connecticut could be investigated further.

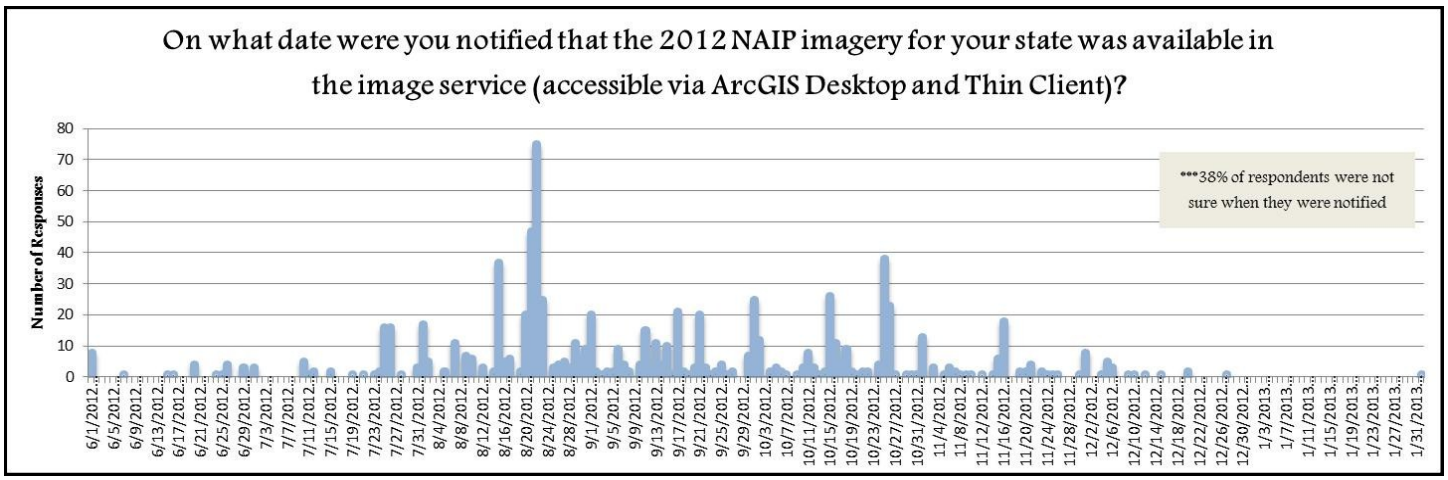


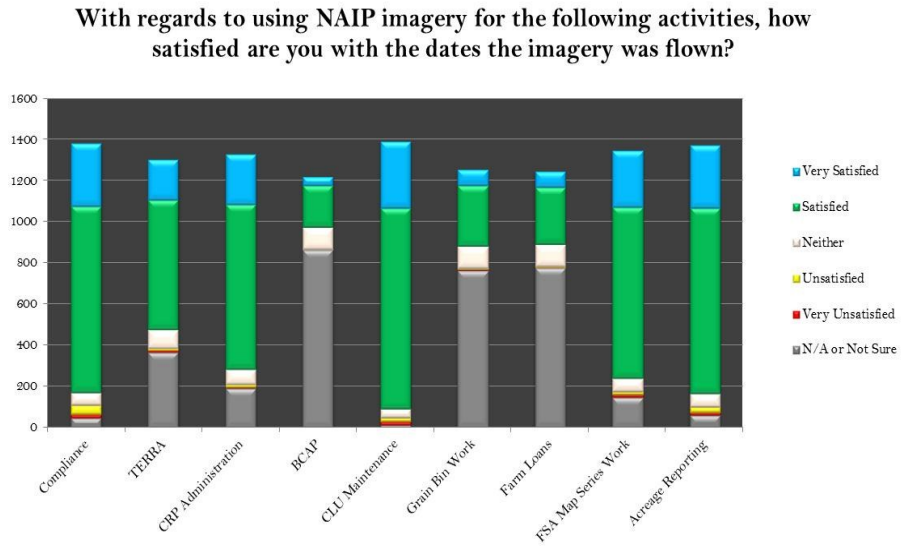


Satisfaction with Acquisition and Delivery Dates

This set of charts show responses regarding how the imagery worked for farm programs and associated activities. Approximately 86% of respondents were satisfied or very satisfied with delivery timelines. Most respondents indicated that they were notified that NAIP was available in mid August through mid October with the greatest amount being notified in the August timeframe.



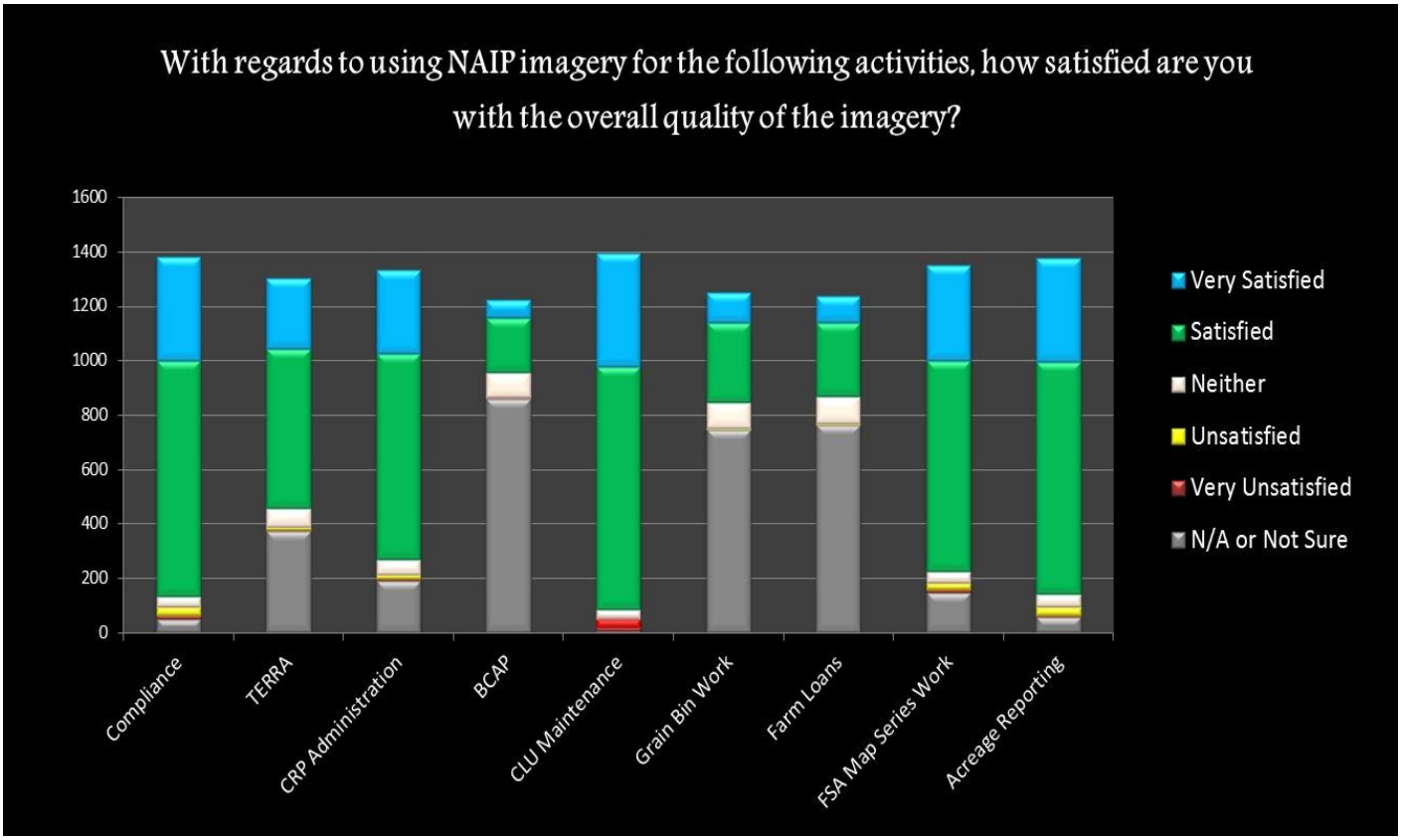


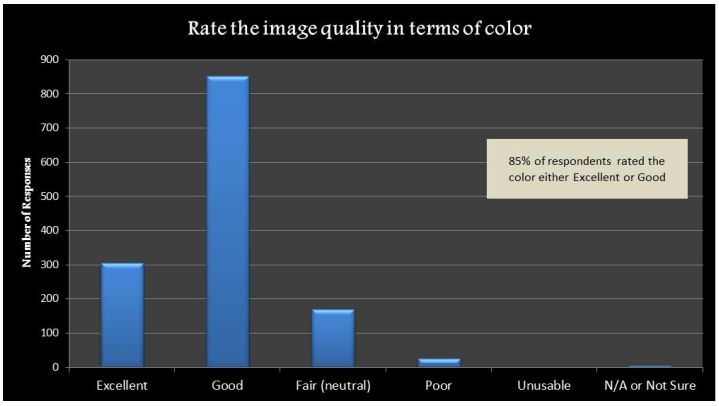


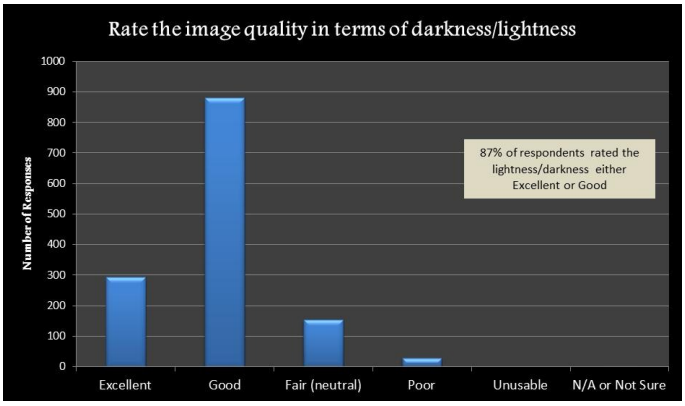
Approximately 89% of respondents were very satisfied or satisfied with the dates the imagery was acquired. Slight bubbles of "very unsatisfied" or "unsatisfied" responses with regards to use for CLU Maintenance appear to be present. Answers as to why this may be occurring might be found in Appendix B, Recommendations to Improve NAIP. A large number of respondents also provided "N/A or Not Sure" responses on BCAP, Grain Bin, and Farm Loans categories. This is likely because these activities are not performed using NAIP by all FSA field users.

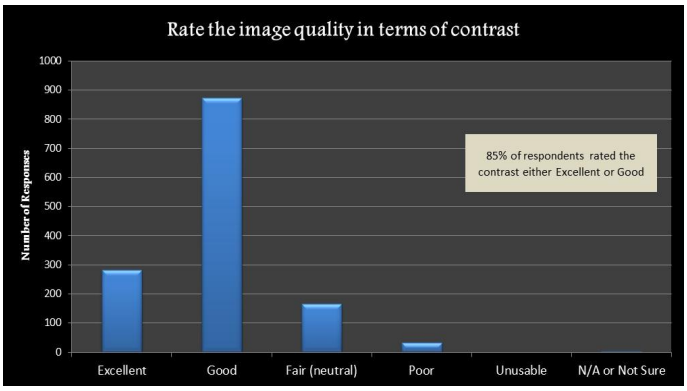
Satisfaction with Quality of NAIP Imagery

One of the most important questions asked each year is with regards to satisfaction with the overall quality of the imagery. Responses indicate that overall, 91% of survey takers are either very satisfied or satisfied with the overall quality of the imagery, for farm program and related activities. Again, there is a small spike of very unsatisfied responses in the CLU Maintenance activities category. This may be tied to needing to adjust CLU to match imagery base, or some other cause that could be evident in responses listed in Appendix B, Recommendations to Improve NAIP. Closely related to the question of image quality are questions breaking down overall image quality into categories, such as contrast, darkness/lightness, and color. Responses to these questions are shown here. In all cases the quality of the imagery is rated either Excellent or Good 85% of the time or more.



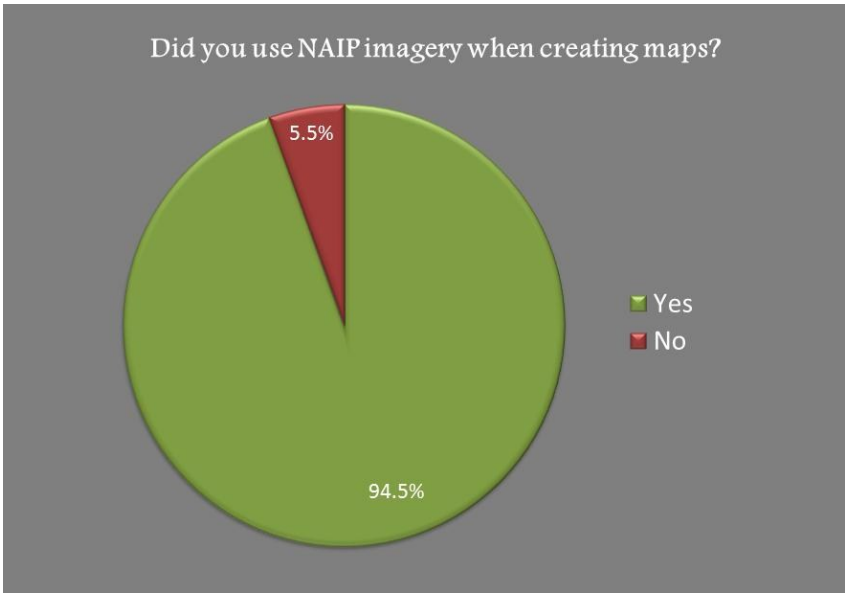






Using Imagery to Make Maps and in Appeal Adjudications

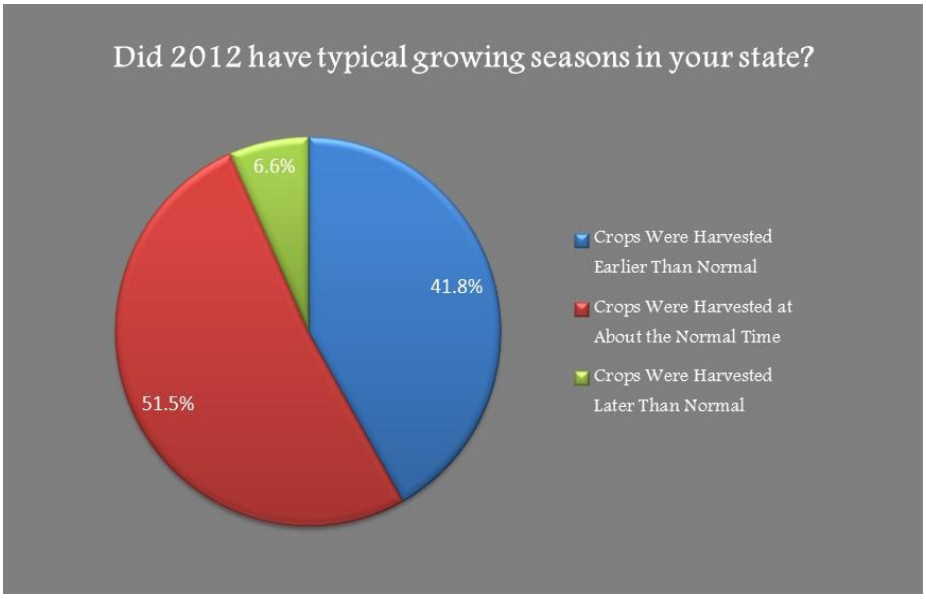
According to survey responses, NAIP was used approximately 2.6 million times to make maps within the 22 states surveyed. Extrapolated out, it is likely that NAIP is used over 5 million times a year to make maps. On average, each survey respondent indicated they used NAIP approximately 2000 times to make maps.

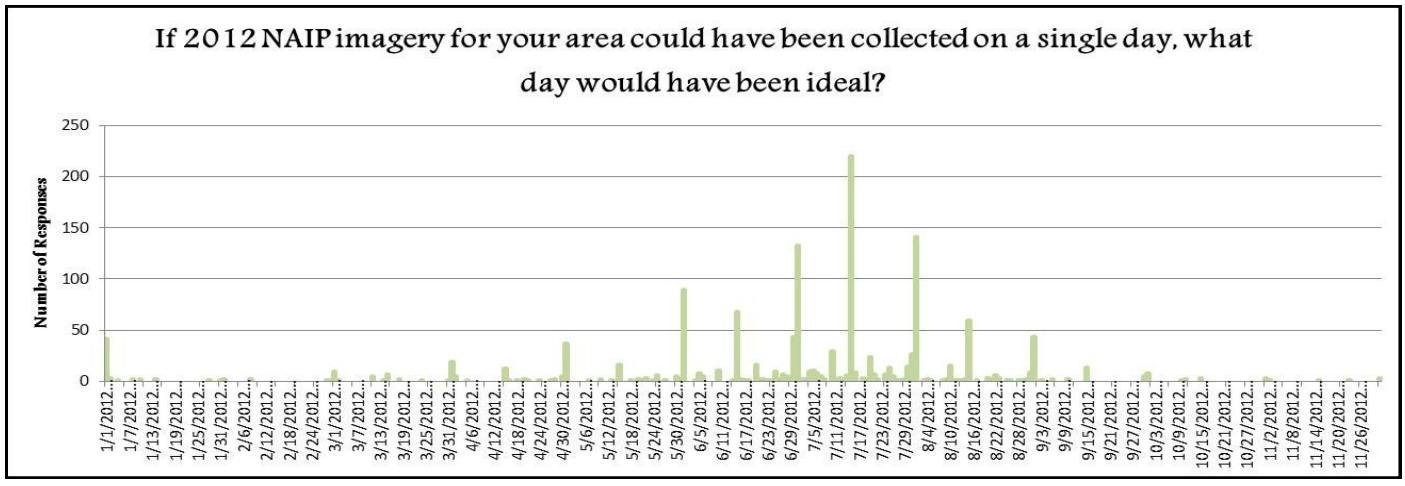


In addition to map making, NAIP was also used approximately 250 times in appeal adjudications, with about 4% of respondents indicating they did this sort of work.

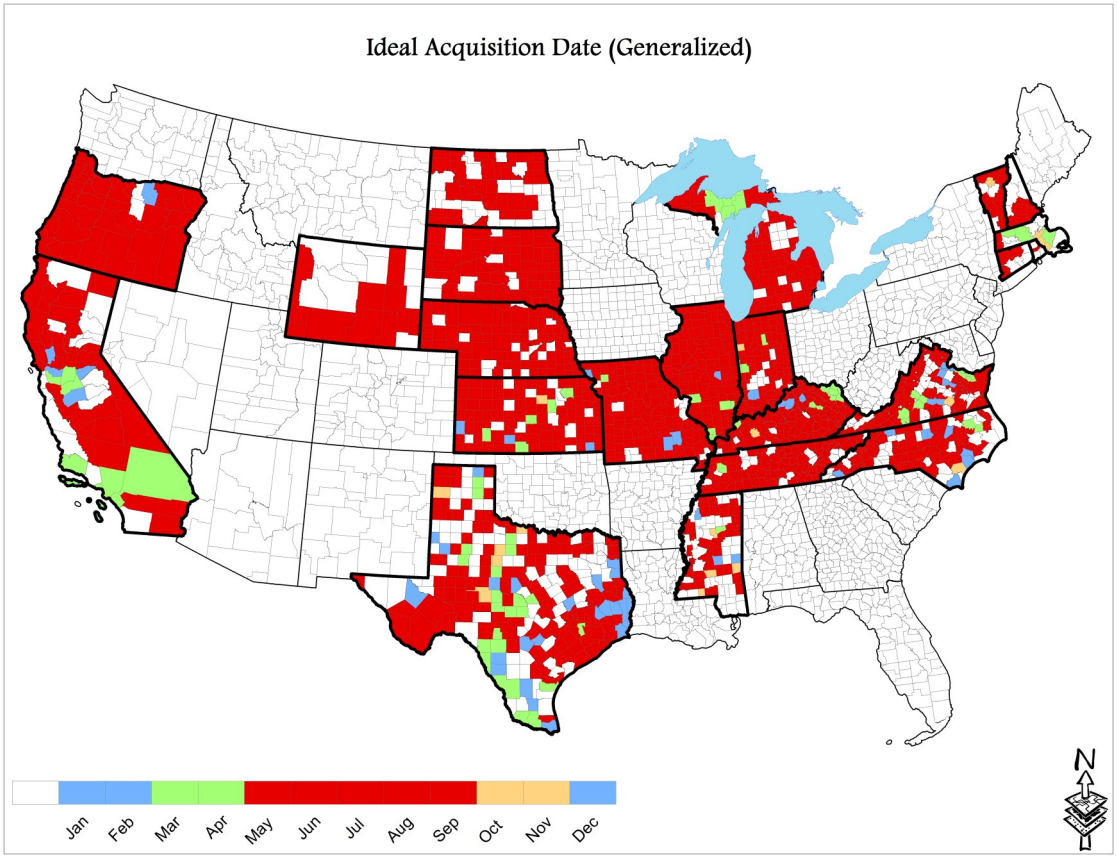
Ideal Imagery Collection Timelines

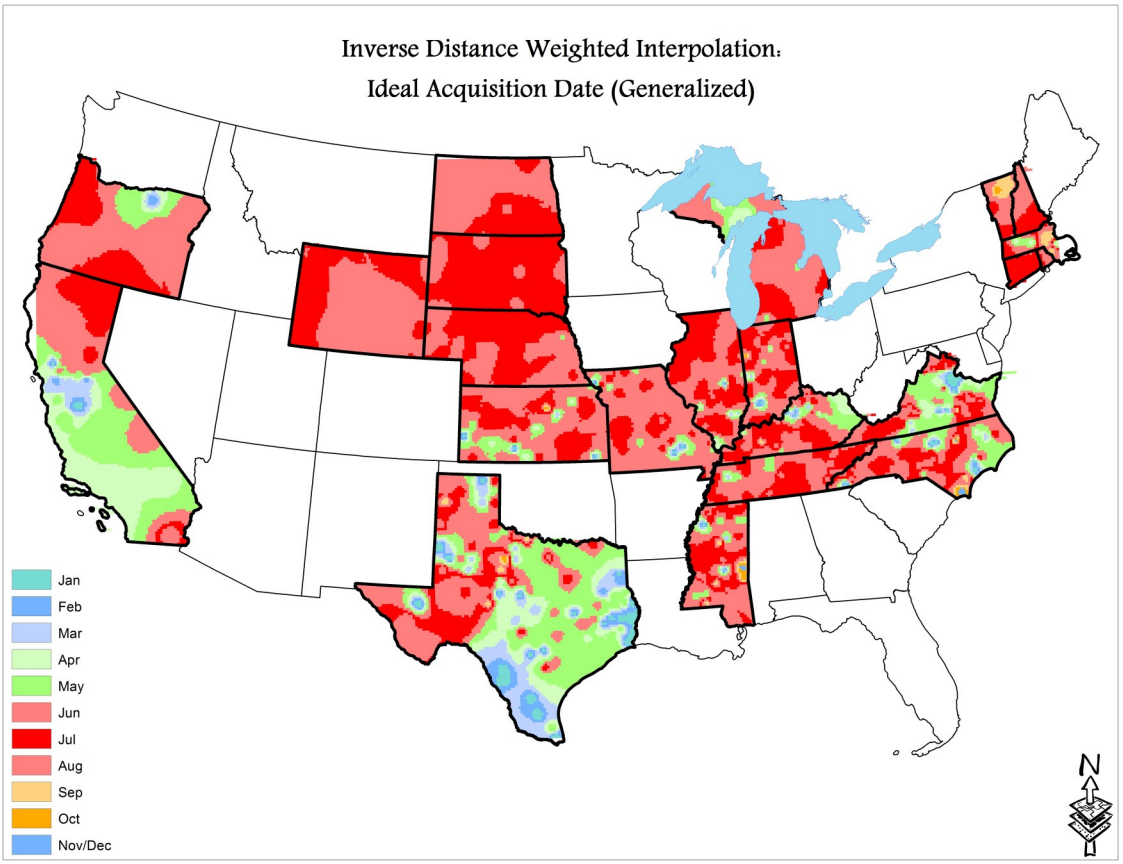
FSA recognizes that certain aspects of agriculture and imagery collection have variables associated that cannot be controlled, such as the weather. To attempt to track this from year to year, the NAIP survey asks questions regarding ideal acquisition dates and typical growing seasons. Responses to these questions are shown below. Generally speaking, crops were harvested at about the normal time, or earlier than normal in 2012. Ideal image acquisition dates center around mid July.





A more generalized and geographic look of image acquisition dates was done using survey responses to the question asking if imagery could have been acquired on a single day, what day would that be. Responses by each county were then generalized to the month and mapped. The first map shows actual responses by month. The second map has be constructed performing spatial analysis on the data, using the inverse distance weighted method. This map is easier to look at to see patterns.

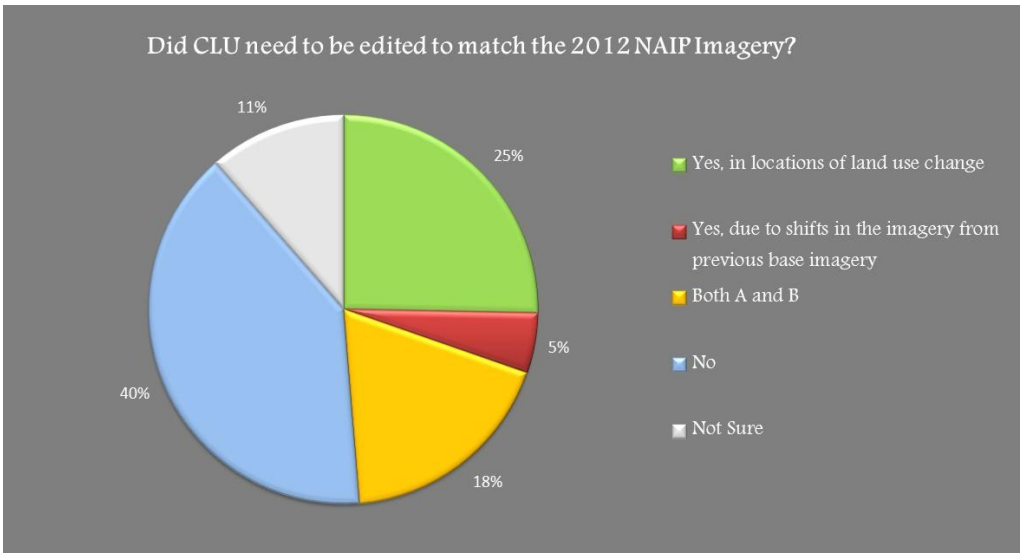


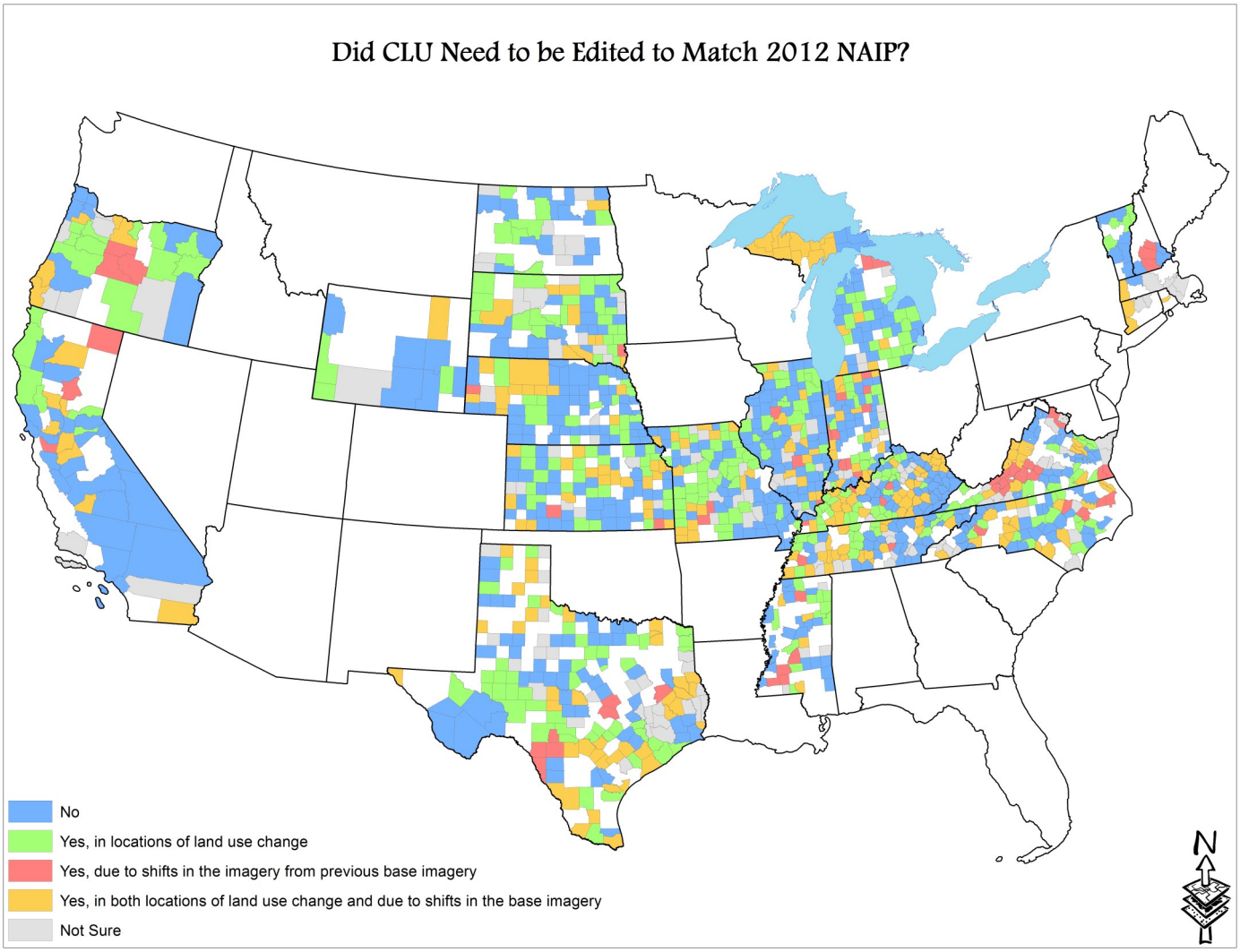


Obvious patterns exist in TX and CA, who seem to require winter and spring acquisitions for parts of their states. The same pattern exists somewhat in VA and NC, however, anomalies exist in the data, as the analysis is only as good as valid responses to the survey. *Please note that the color ramps on the two maps are different.* This was done to accentuate trends. Care should be taken to compare the raw data with these generalized results.

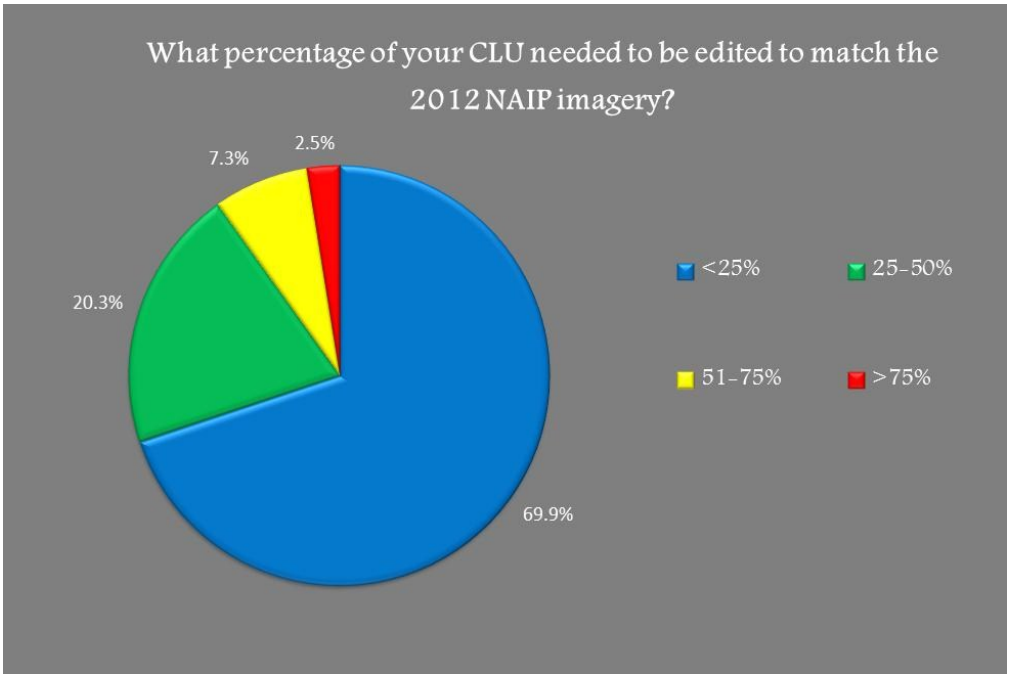
Maintaining CLU

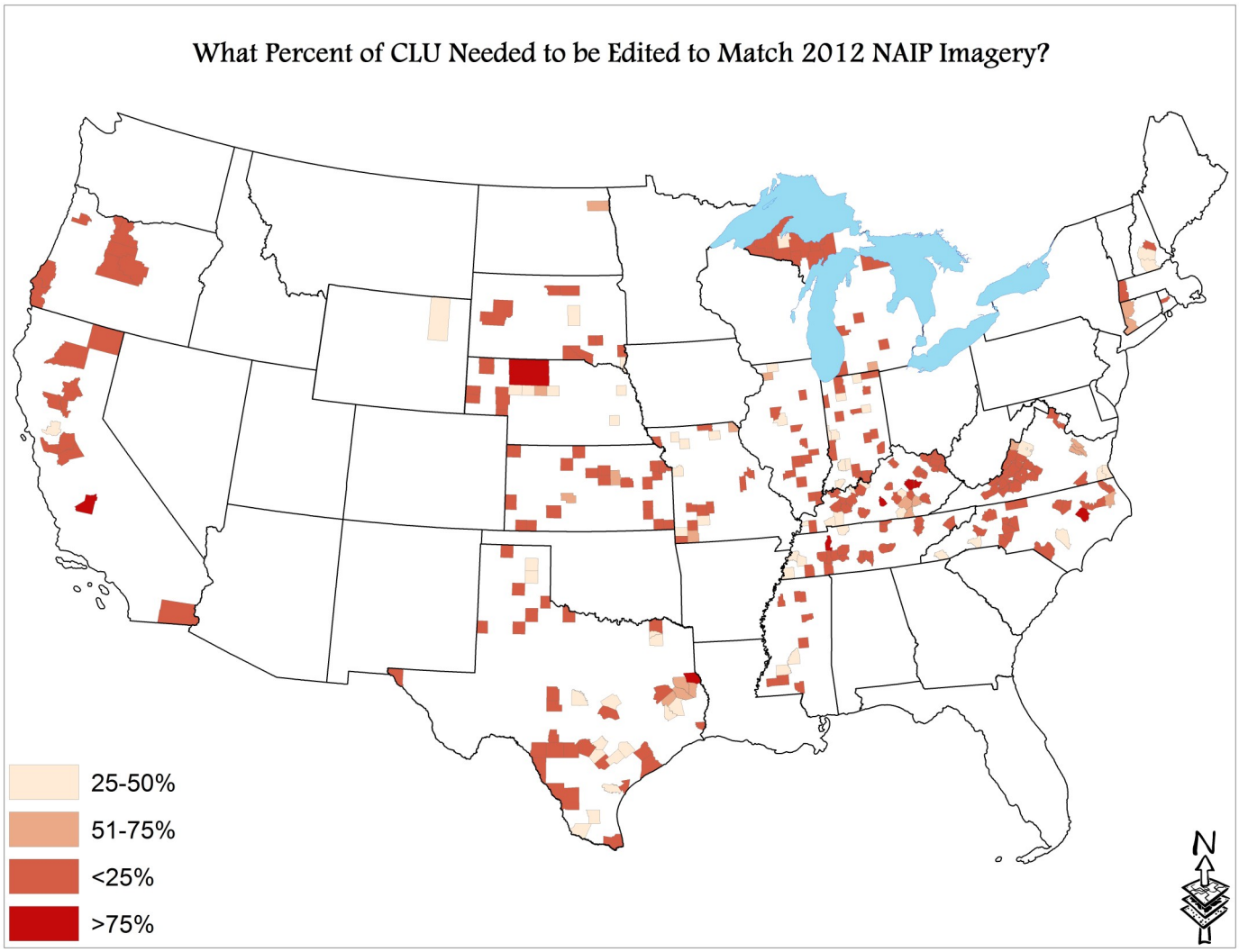
One primary purpose of NAIP is to assist in maintaining FSA's CLU boundaries. The following charts show responses to the survey related to whether CLU needed to be edited, and the reason why it needed to be edited, with receipt of new NAIP. Results appear to be fairly significant in that editing CLU in locations where there is land use change is a good thing, but editing CLU due to shifts in imagery from previous base may require further investigation as to which dataset, current NAIP or previous year NAIP is the most spatially accurate to true ground. It could also allude to spatial anomalies in the data, or may allude to poor CLU digitizing that needed to be edited in the first place. The map below shows responses by county.





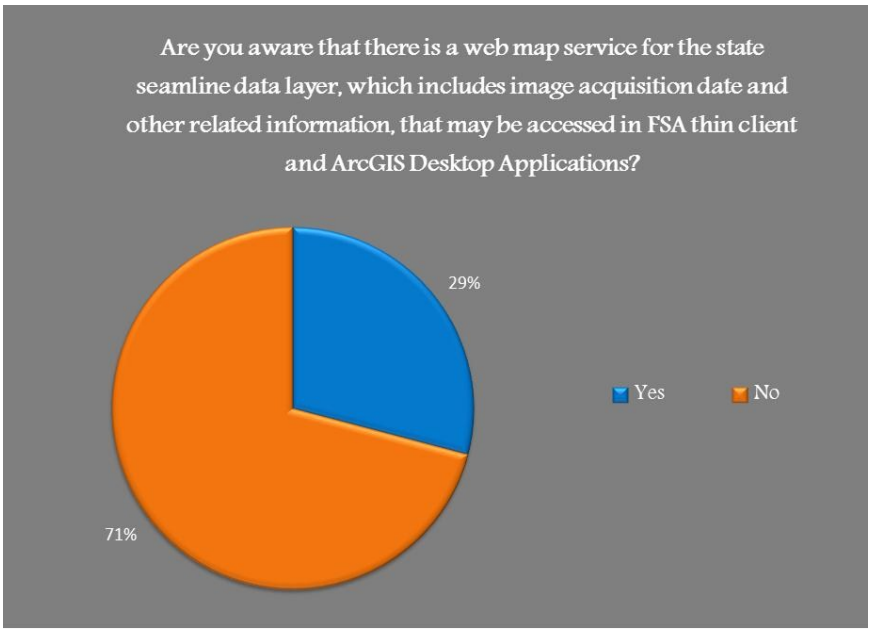
In continuing this investigation, the NAIP Survey also asked respondents to discuss what percentage of CLU needed to be edited to match 2012 NAIP imagery. Only respondents that said they needed to edit CLU due to shifts in the imagery from the previous base year were asked this question. Responses are shown here both in a statistical and geographic manner. This information potentially could be used by APFO QA to further investigate the spatial accuracy of NAIP.

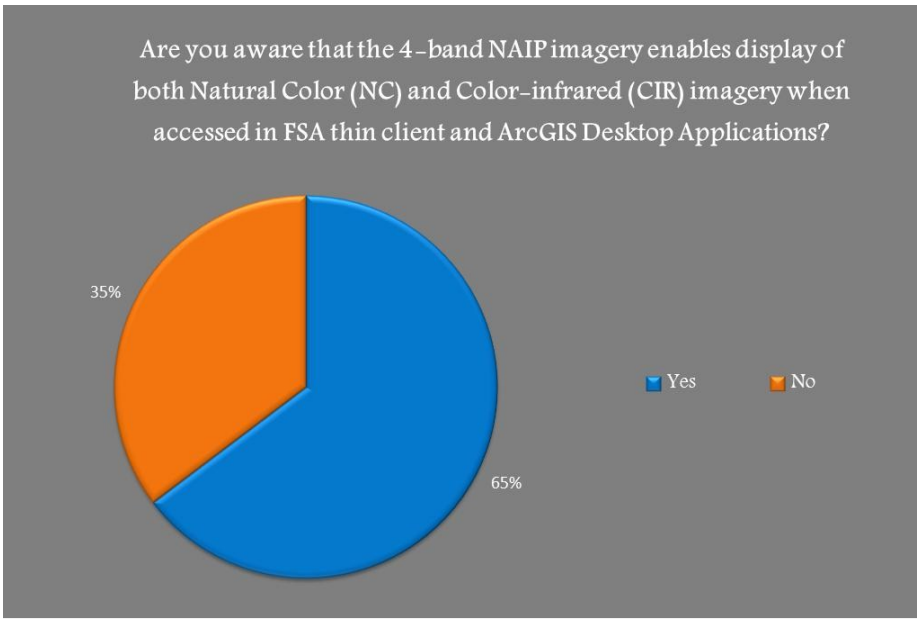




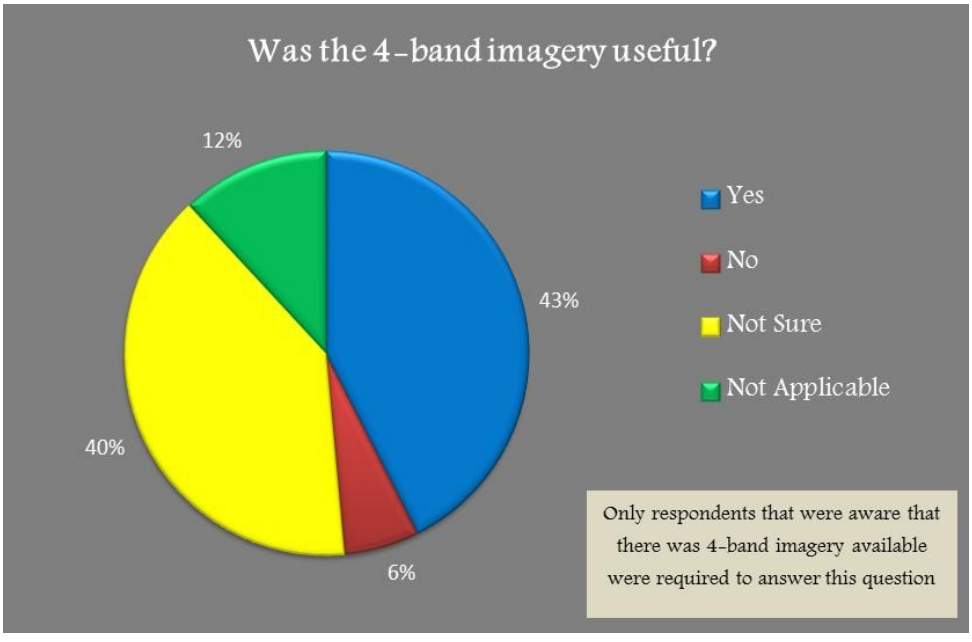
State Seamline File and 4-Band Data

Survey takers responded regarding their knowledge and use of state seamline files, which, among other things, display image acquisition date information, and 4-band data, which allows the GIS user to see both natural color (NC) and color infrared data (CIR). Responses are shown here. Based on the responses, only about 30% of the users know that the seamline file is available, which implies additional education regarding this service is needed.



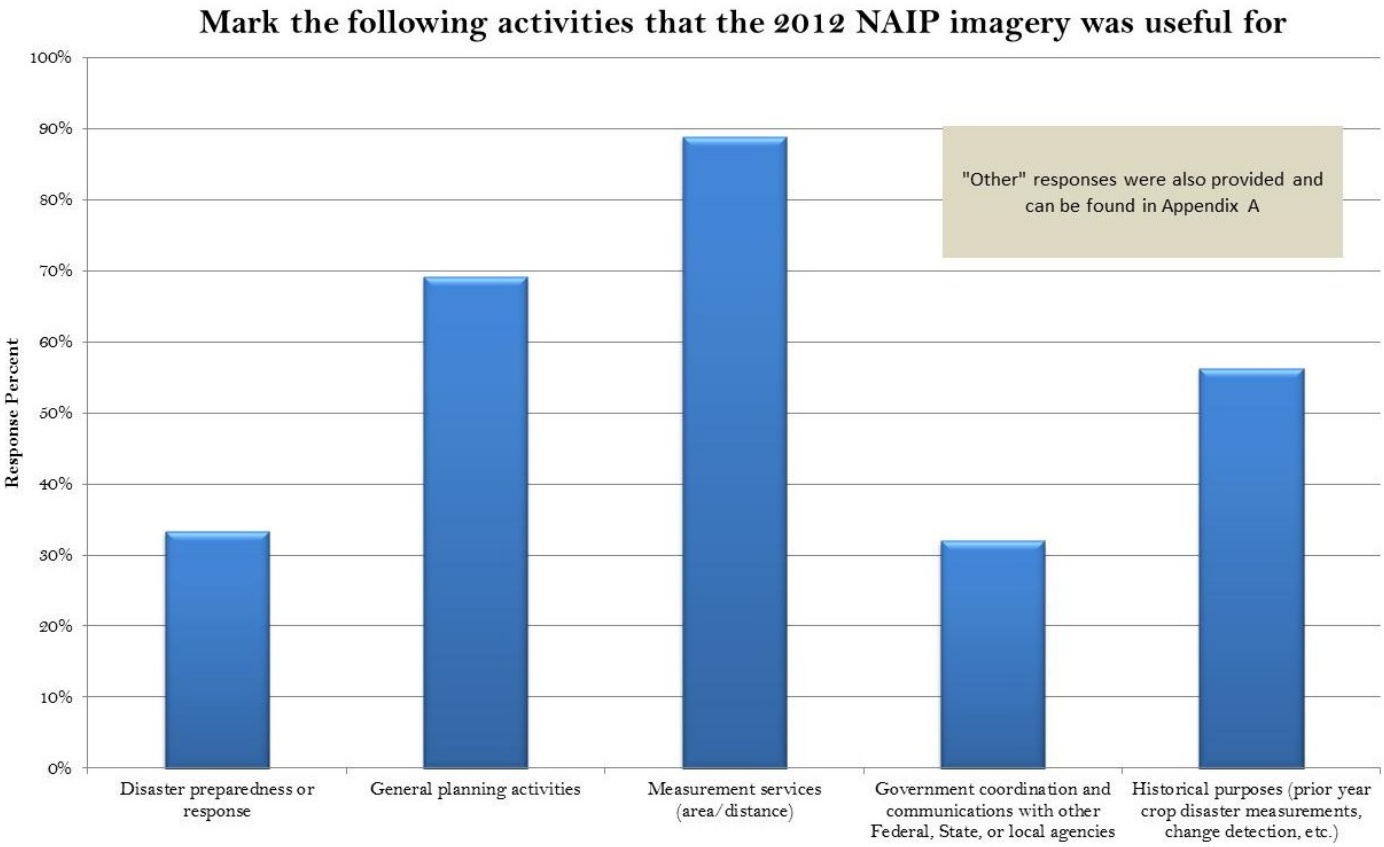


Around 65% of the users know that they can access both CIR and NC versions of the imagery. Of those respondents, 43% find the 4-band useful. Overall, this means about 25% of all users find the 4-band useful for their work.



Uses of NAIP

NAIP is used for many activities. The chart below indicates to what degree NAIP is used for major activities. For example, almost 90% of respondents indicated that NAIP is used for measurements services, and approximately 70% of users use NAIP for planning activities, and so on. "Other" responses were also allowed in this question, and the full list of responses can be found in Appendix A.

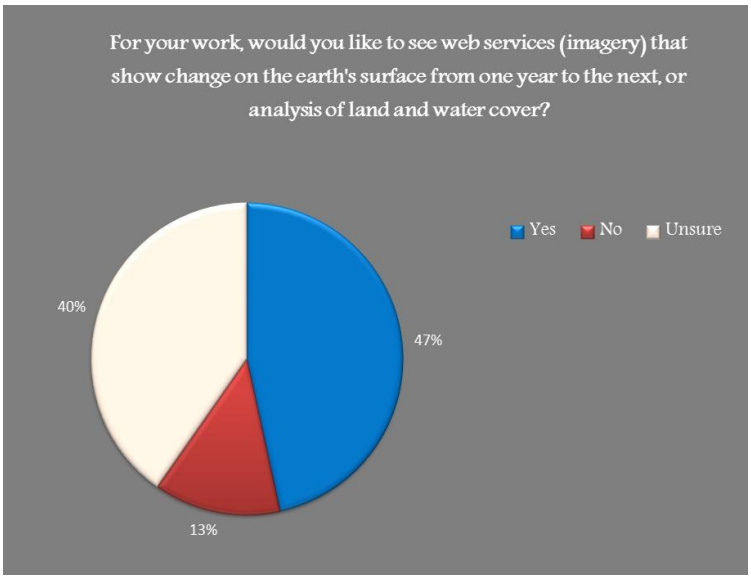


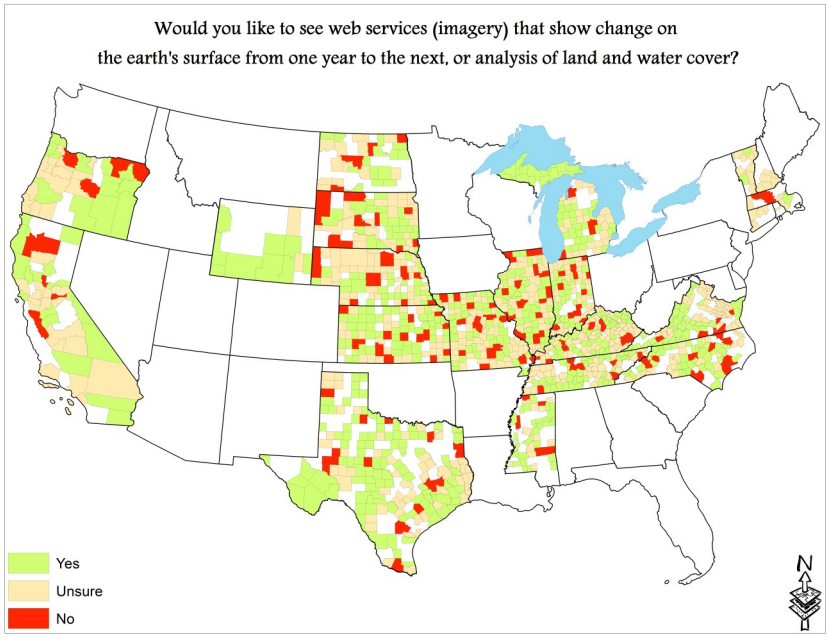
An abbreviated list of the most common "other" responses is shown here:

- Acreage reporting
- Crop certification
- Crop reporting
- Crop insurance
- Compliance spot checks
- Sod busting/new breakings
- CRP

Change/Analysis Web Service Needs

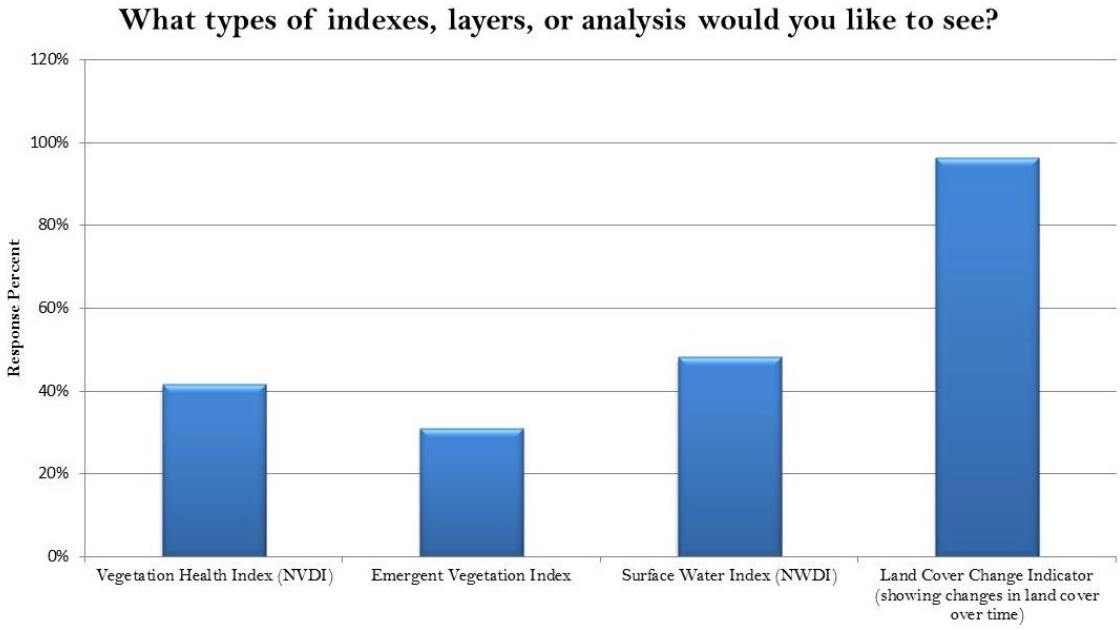
Almost 50% of respondents indicated they would like to see change detection and analysis services as part of the imagery delivery package to the FSA field. Another 40% of respondents indicated they were not sure, which would imply there may be a lack of knowledge of these types of datasets. Some education of the potential of these types of services may be necessary, however, the percent responding in the affirmative already is higher than expected, which could indicate an emerging requirement.





Most of the 50% that responded that they would like to see these types of services, also indicated that land cover change indicators or services would be the most beneficial, followed by water and vegetation health indices.

Additional textual content from the survey indicated that some users would like to see an annual layer showing land taken out of production due to oil wells and related oil industry activities, LiDAR/DEM layers, as well as analysis layers derived from leaf off acquisitions.



Section 4 - Comparing 2006-2012 Survey Results

From year to year, the NAIP survey changes slightly, to accommodate advents in technology, changes in program need and delivery, and so forth. The survey tries to stay consistent on some questions from year to year, however, for purposes of trending and comparison over time. The following are a summary of these comparisons:

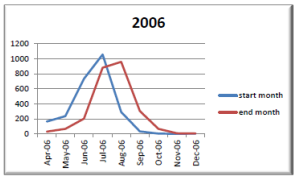
In previous years, the survey asked "**On what date did you first receive your NAIP imagery?**". As delivery mechanisms have changed from media to web services to support enterprise applications, so has the question. The question is now "**On what date were you notified that the NAIP imagery for your state was available in the image service (accessible via ArcGIS Desktop and Thin Client)?**". The comparison of this question is not legitimate anymore due to the change in the wording, however, it is good to compare responses purely from the perspective of getting the data to the customer in a timely manner. With this in mind, previous year stats indicate that the most frequently entered date for delivery of the data typically hovered around October timeframe. In 2012, the most frequent date for delivery hovered around mid August, with additional spikes through mid October (see chart on page 6). This *could* indicate efficiencies in delivery to the field, or could indicate efficiencies in delivery from the Contractor to APFO.

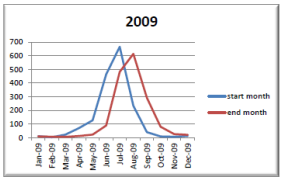
Year	Most Frequently Entered Date
2006	July 15th
2007	July 15th
2008	August 1st
2009	July 15th
2010	July 15th
2011	July 15th
2012	July 15th

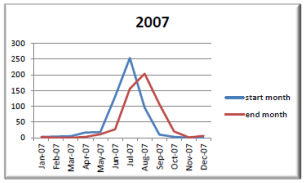
If NAIP imagery for your area could have been collected on a single day, what day would have been ideal?

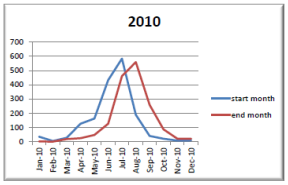
Basic results by sampling the most frequently entered date (the Mode), show that responses have remained amazingly consistent over the years, centering the most important acquisition time in mid summer, mid July specifically.

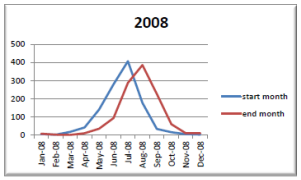
Given that a single date is not possible, what flying season do you feel would have been acceptable to meet your farm program needs? Responses remain very consistent over time with start month in the May/June timeframe and the end month in the August/September/October timeframe. Erroneous responses outside of the 2012 timeframe were omitted from the 2012 chart below.

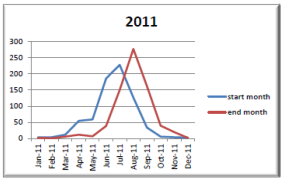


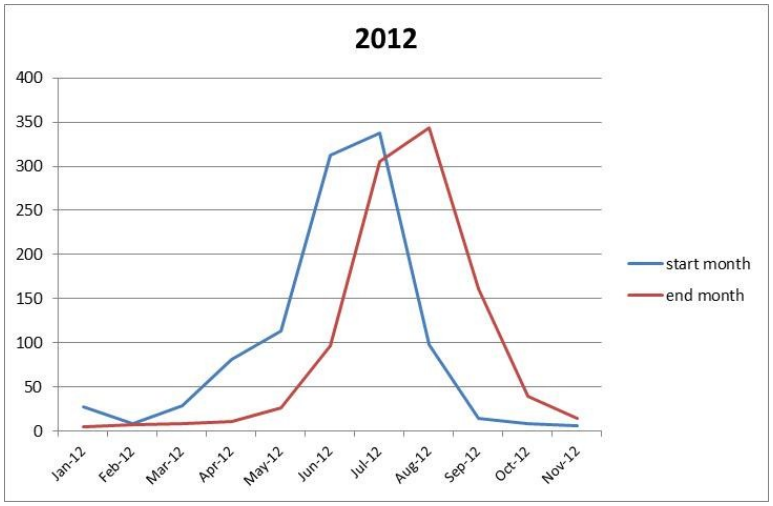






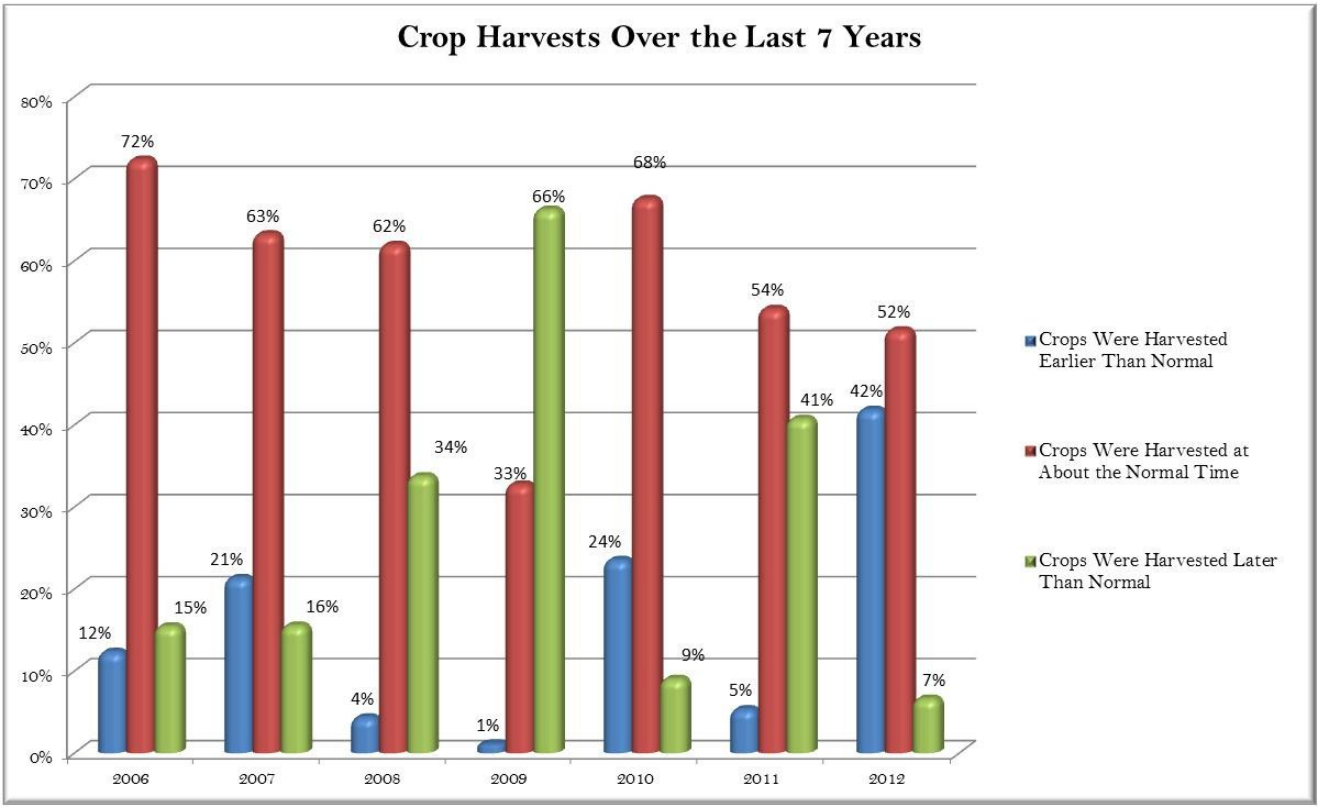






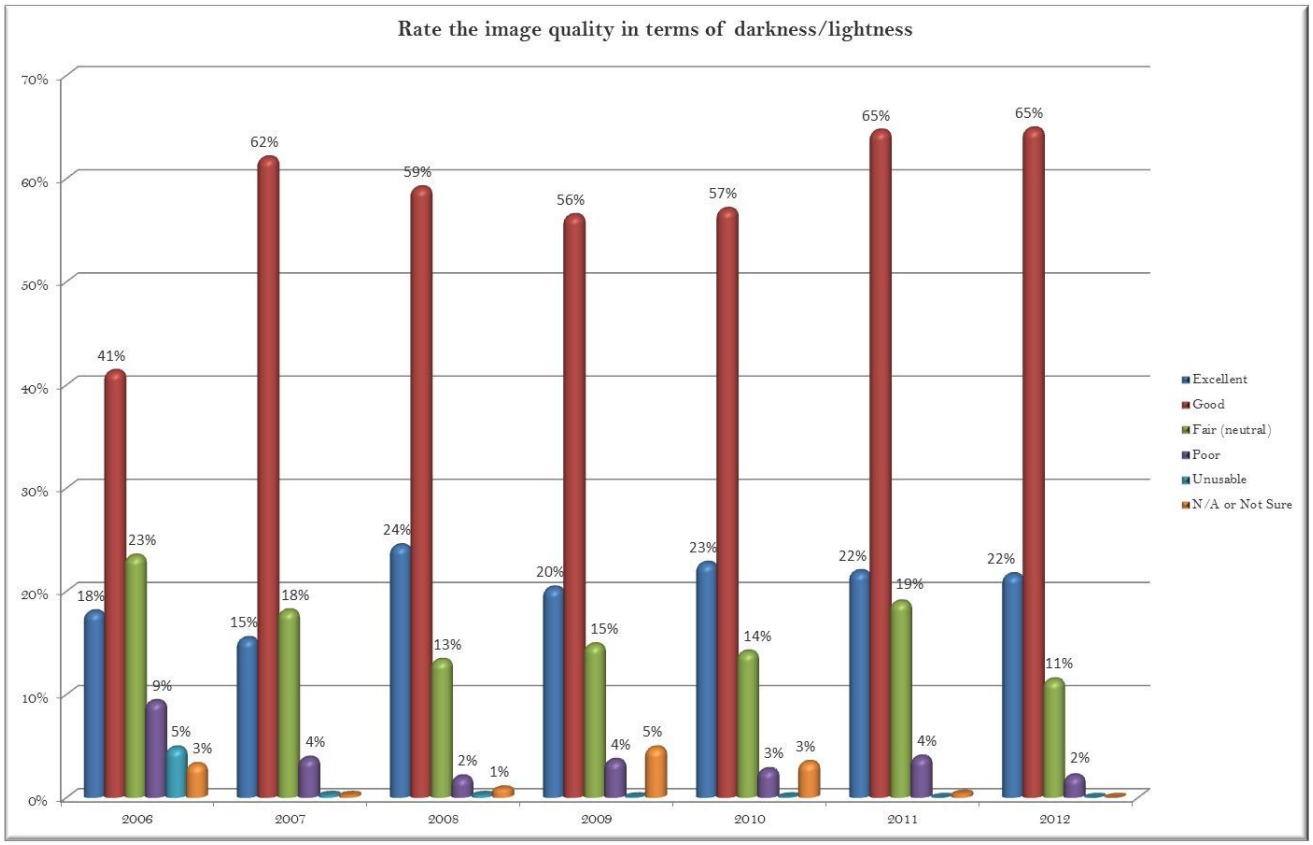
Was it a typical growing season in your state?

This chart indicates that harvest times are variable from year to year.



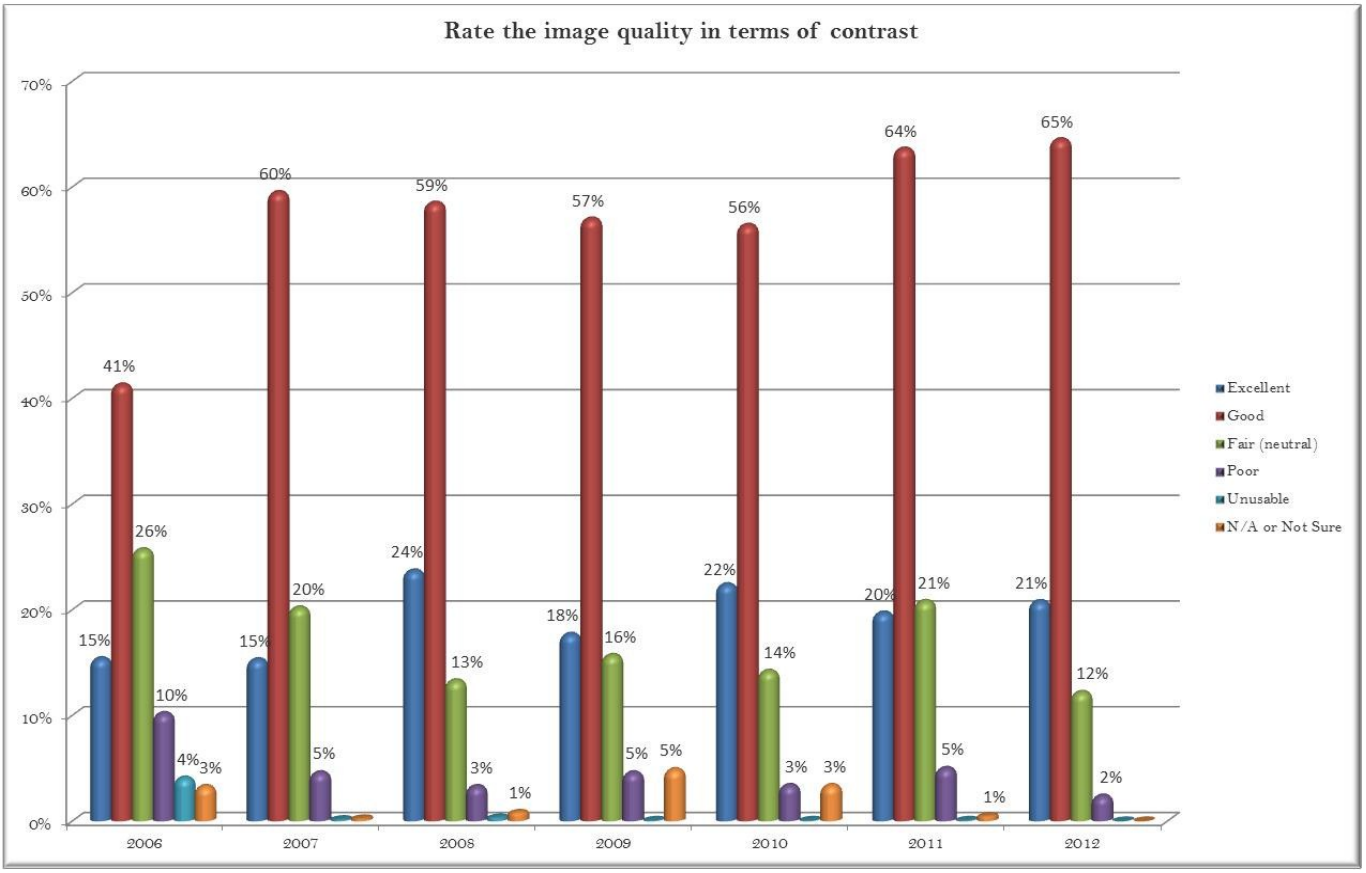
Rate the image quality in terms of darkness/lightness:

Ratings of "excellent" have remained consistent. Ratings of "good" have slightly trended up over the past few years.



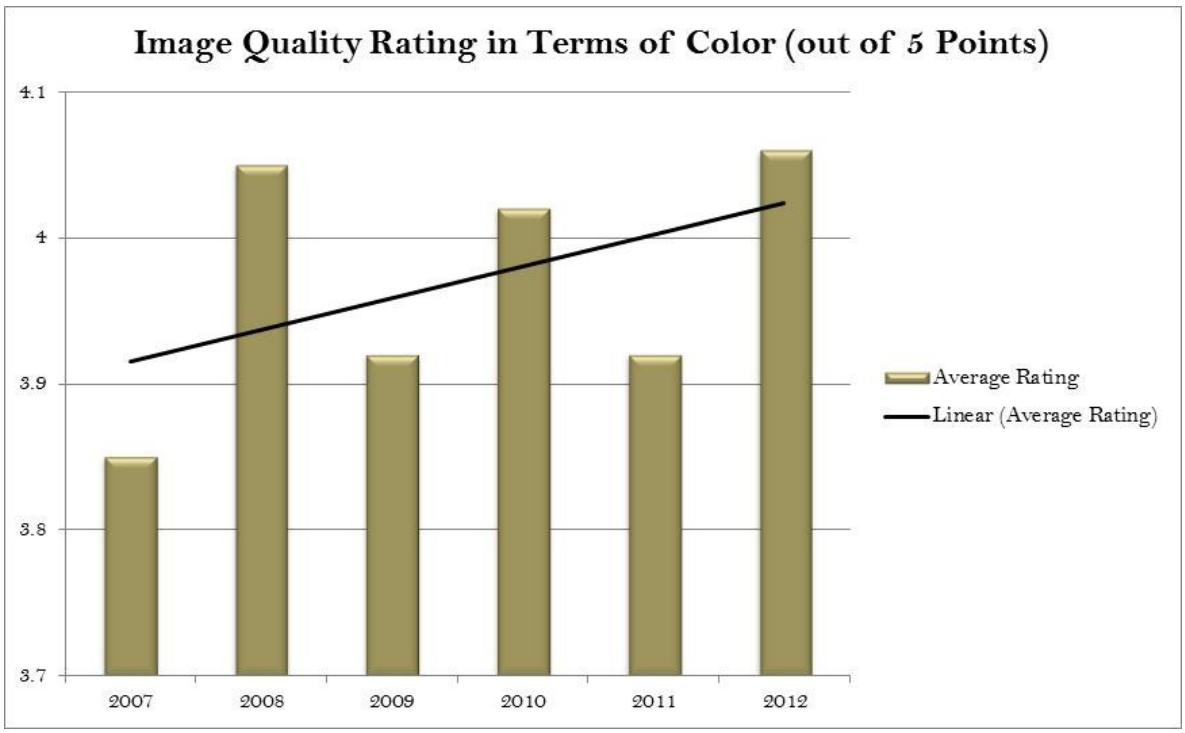
Rate the image quality in terms of contrast:

Ratings of "excellent" have remained consistent. Ratings of "good" have slightly trended up over the past few years.

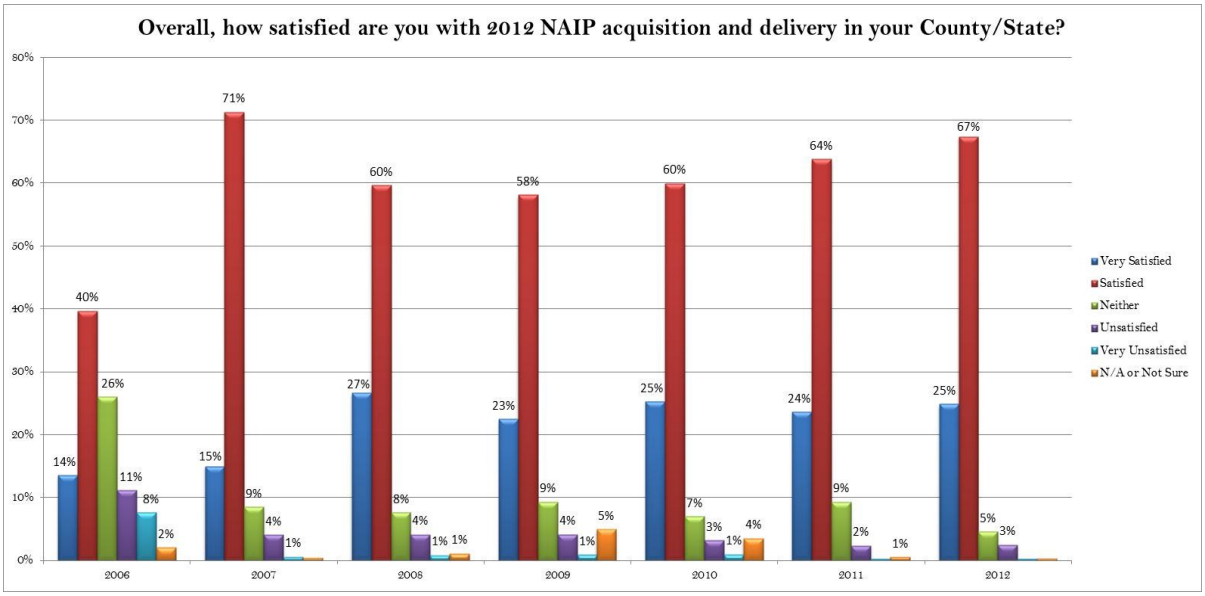


Rate the image quality in terms of color:

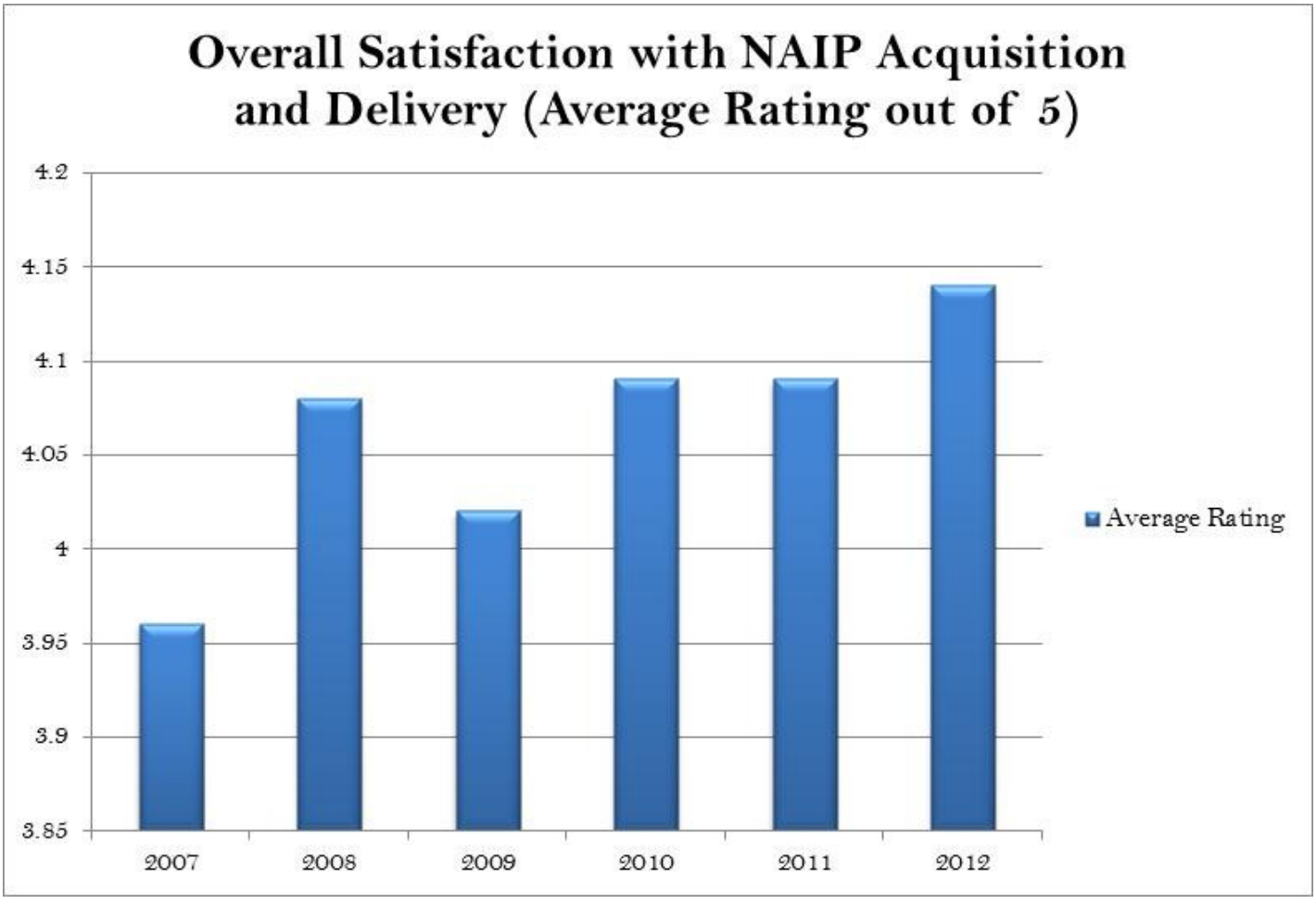
This chart shows the overall rating of image quality in terms of averaged points. There is an upward trend in overall quality ratings over the last 6 years; however, as one can tell from the chart, the trend is not consistent over time.



Overall, how satisfied are you with NAIP acquisition and delivery in your County/State?

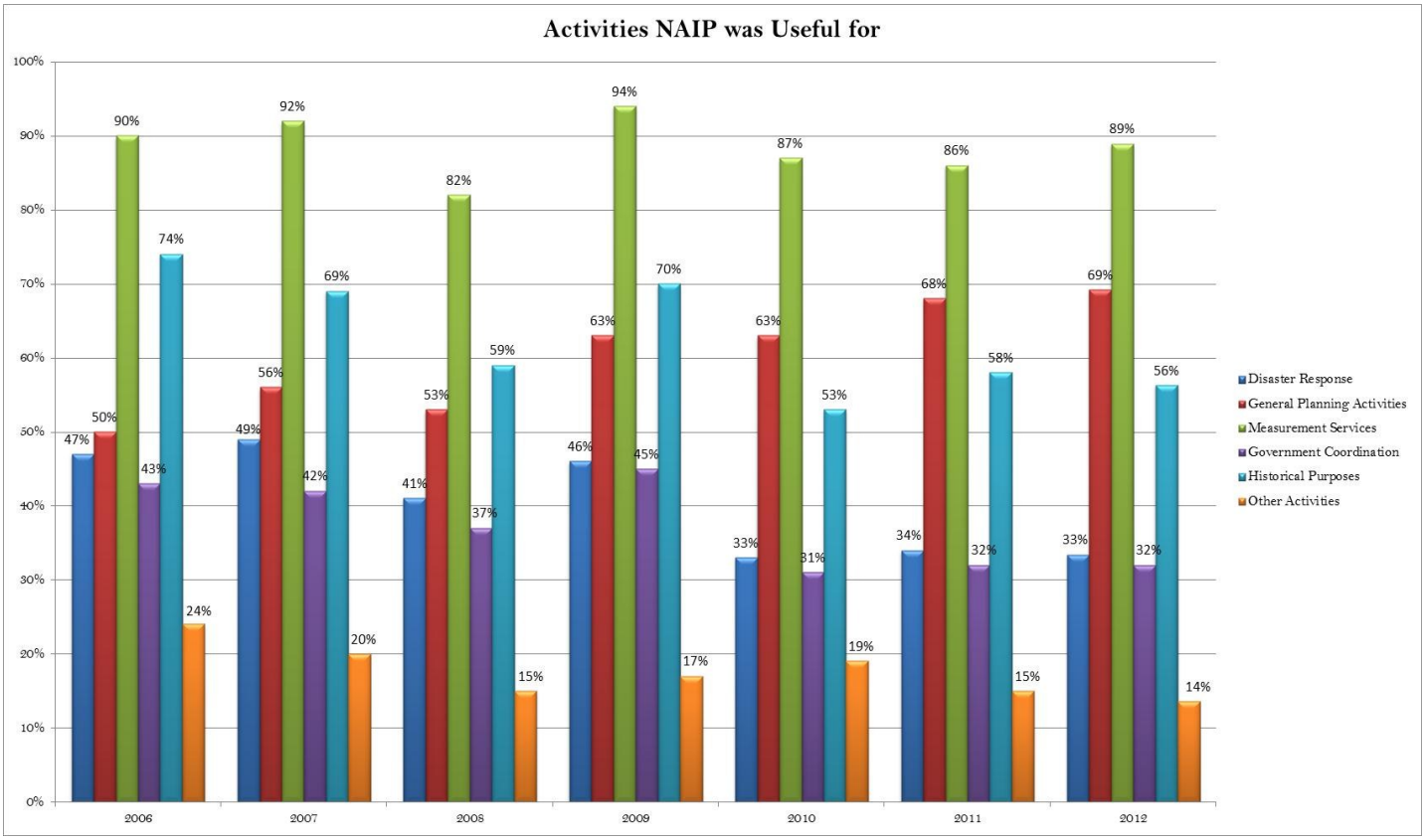


Ratings of "very satisfied" have remained consistent over the last 5 years. Ratings of "satisfied" have slightly trended up over the past 4 years. If one quantifies these ratings on a scale from 1-5, with 5 being an across the board "very satisfied" rating by every survey respondent, and "N/A or not sure" answers are removed from the equation as a non-quantifiable score, the chart below shows the overall satisfaction rating with NAIP acquisition and delivery over time. It accounts for all survey responses on this question for all years of NAIP dating back to 2007. This chart, more than any other in this report, likely signifies in the most easy to digest manner, the trend in overall satisfaction with the NAIP program over time.



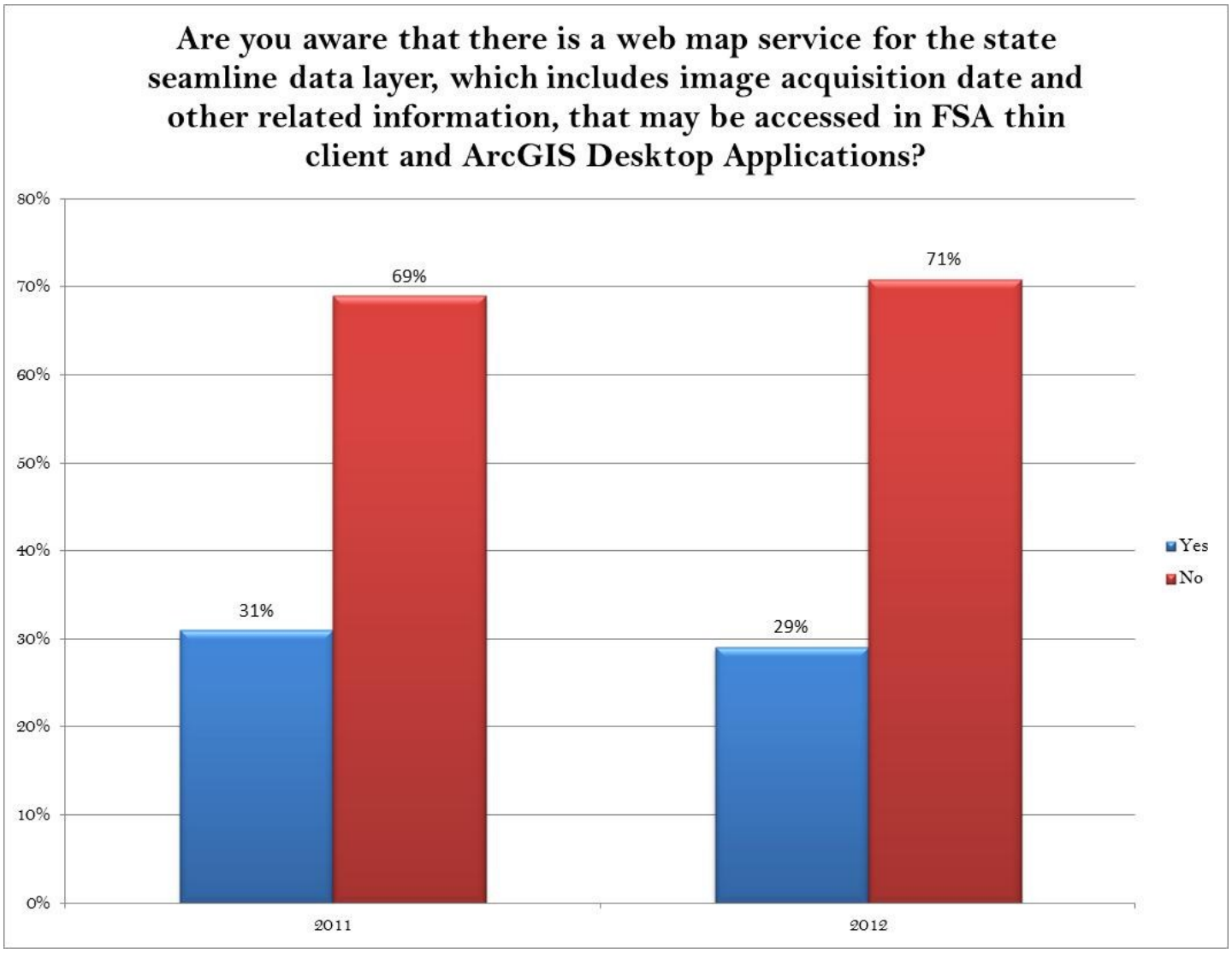
Mark the following activities that the NAIP imagery was useful for:

Consistently, over time, the top 3 activities NAIP is used for include measurement services, planning activities, and historical purposes.



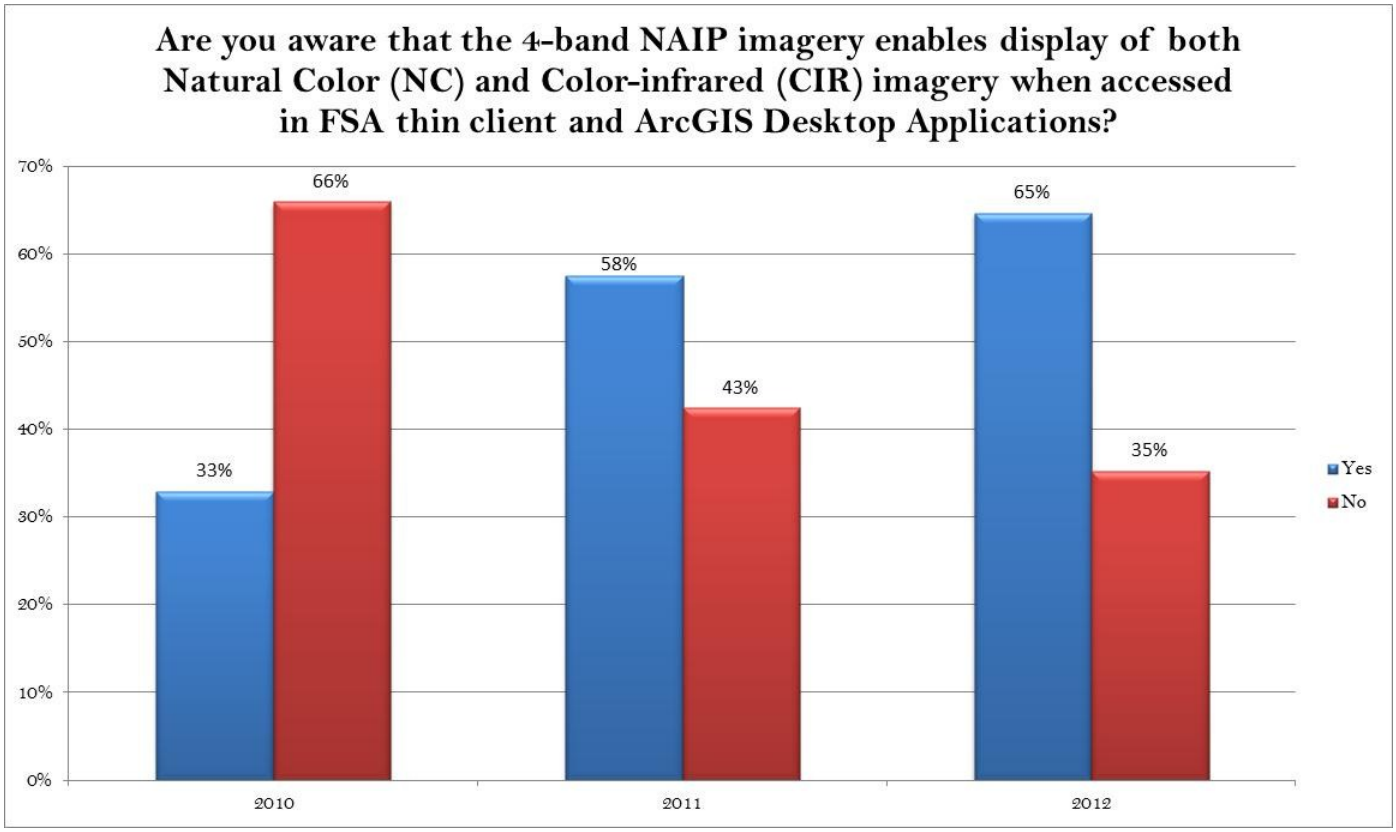
Are you aware that there is a web map service for the state seamline data layer, which includes image acquisition date and other related information, that may be accessed in FSA thin client and ArcGIS Desktop Applications?

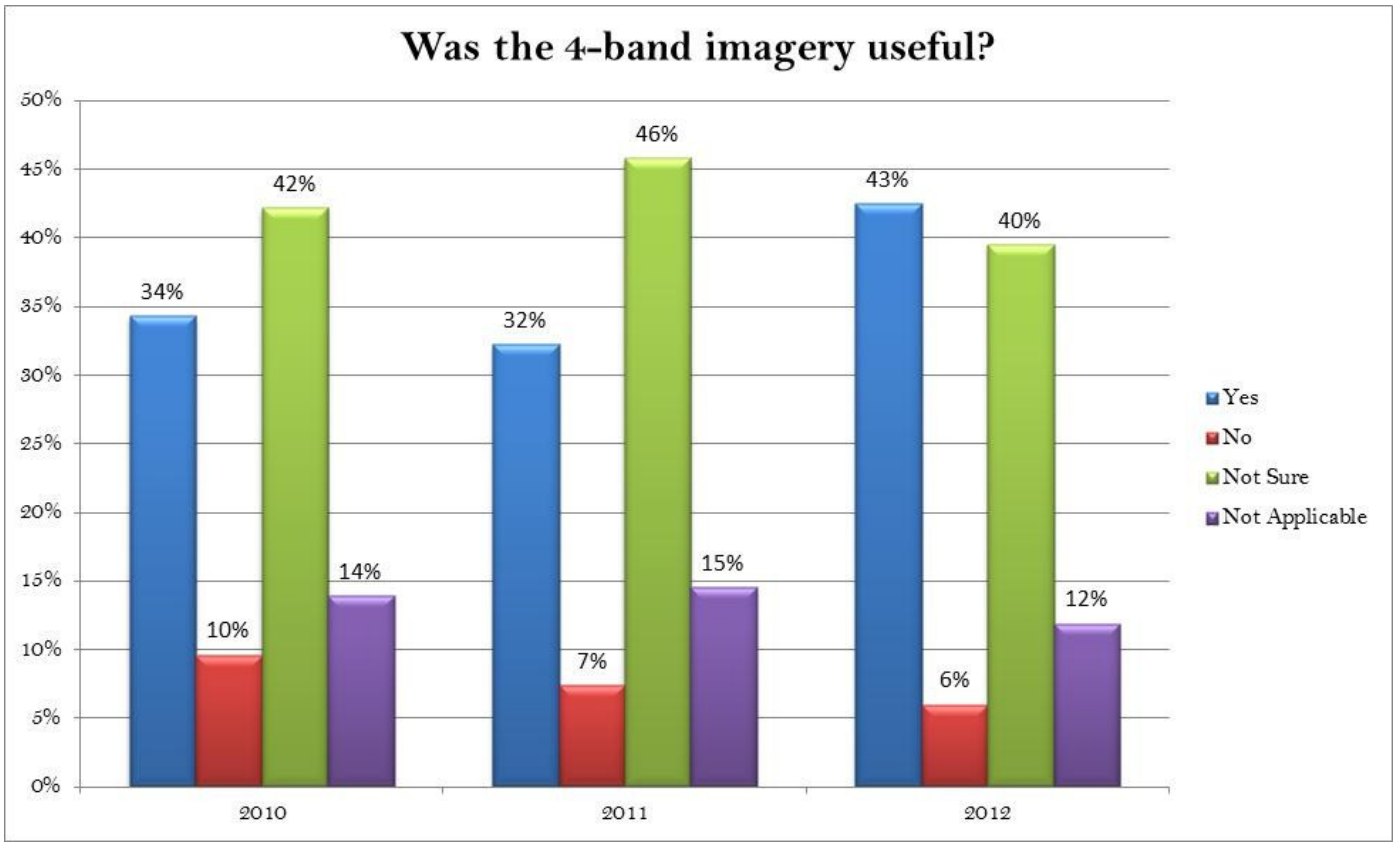
Responses to this question seem to indicate a need to inform or educate the end user as to where this layer can be accessed and how it can be used. With respect to FSA enterprise applications, some investigation would need to take place first as to how this information can be accessed.



Are you aware there are 4-band services available and are they useful?

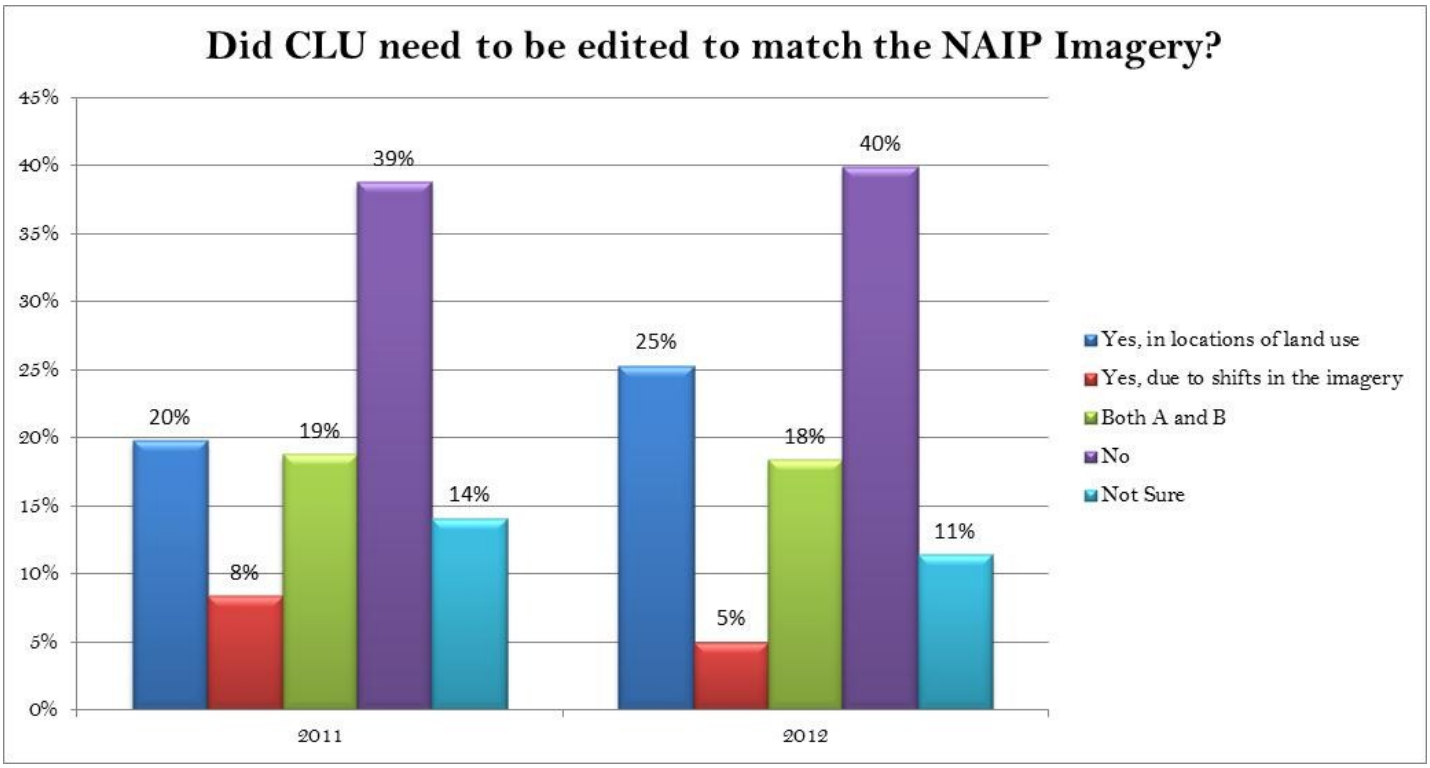
While 3 years can hardly be used to show a trend, and thus should be suspect, it does appear that more and more users are becoming aware that this service exists. Most users that do know about it find it useful or are not sure how to use CIR data. This could be another indicator that some additional training may be necessary.





Did CLU Need to be Edited to Match NAIP

One primary purpose of NAIP is to assist in maintaining FSA's CLU boundaries. While 2 years of data cannot be used for trending purposes, it is still good to compare the information received from the survey for the last two years. The chart below indicates that about 27% of respondents in 2011 needed to edit at least some CLU due to "shifts in the imagery from previous year base", and in 2012 the number was 23% (these numbers are derived from adding the red and green bars for each year). Much more investigation would need to be done to understand the real reasons for needing to edit CLU; this is just one potential indicator.



Section 5 - Recommendations to Improve NAIP Based on Survey Results

The purpose of the NAIP survey is to help assess and improve the program from year to year. Many conclusions may be drawn from the results of the 2012 NAIP Survey. As discussed in the previous year's survey reports, improvements to NAIP could be calculated in a purely statistical manner, where customer satisfaction is assessed each year, with a goal of 100% satisfaction. However, due to factors out of our control, such as weather, early and late crop harvest dates, fires, crop types, processing and equipment issues, the technology curve, and so forth, 100% satisfaction is by no means a realistic goal for NAIP. A more realistic measurement of success is in looking at the trends from year to year.

Program improvement should be based on an increase in satisfaction of the primary customer (FSA State and County Offices). NAIP is one tool in the toolbox by which FSA program activities may take place, and is currently accepted as a means to update a State's official FSA orthoimagery base for GIS. Overall, 2012 should be considered a good year for NAIP. Overall satisfaction in 2012 was up from 2011. Overall satisfaction is based on the combined percentage of respondents indicating that they were either very satisfied or satisfied with overall acquisition and delivery of NAIP imagery. In 2011, overall satisfaction was 88% compared to 92% for 2012.

Specifically, suggestions to improve NAIP based on survey results include:

⇒ Open ended responses continue to indicate a desire for higher resolution imagery that is flown every year, and delivered as soon as possible. We should seek out effective/efficient ways to try to meet this need.

⇒ Quality of the 2012 imagery was rated high, however scores have not been very consistent over the years. Continue to improve the image quality specifications so FSA receives the highest quality and most consistent product over time.

⇒ Last year's drought conditions exposed a difficult issue to overcome with a nationally implemented imagery program; that of acquiring the imagery at the right time, when the reality is that the "right time" is not known until well after contract task awards have been made and flying seasons have been designated. Seek to find a way, if possible, to alleviate this shortcoming.

⇒ Continuing education needs to occur regarding the availability and use of the seamline services.

⇒ Numerous open ended responses, while not solicited, alluded to some difficulties or inefficiencies with FSA enterprise GIS applications. While this is not specific to NAIP per se, they do affect to some degree user impressions of NAIP. This report should be passed on to GISO for any follow-on action they may see fit.

⇒ Investigate further the potential delivery of change detection/image analysis layers. Response percentages were relatively high regarding the desire to have access to these types of layers, but defining what that really means needs to occur.

⇒ Some investigation should be done as to whether it is feasible to try to accommodate earlier or later (meaning winter/spring) flying seasons some areas of the country appear to be asking for.

Section 6 - Recommendations for Changes to the Survey for 2013

Most likely, the NAIP survey will continue into the future and will be administered by APFO. A 2013 NAIP Survey will be issued some time near the beginning of 2014, with an approved AP Notice from FSA. Using the same survey medium will continue to allow for comparative analysis of multi-year survey data, as the survey method and many of the questions will remain consistent.

Several Recommendations:

⇒ The survey should continue to remain as consistent as possible in question format and delivery mechanism to legitimately display trends over time.

⇒ The survey should continue to be tweaked as needed to help ensure emerging requirements are captured, based on advents in technology or changes to FSA program implementation. Two places where this appears to be evident now are:

  ⇒ Investigate further the potential delivery of change detection/image analysis layers. Response percentages were relatively high regarding the desire to have access to these types of layers, but defining what that really means needs to occur, likely in more detailed survey questions in a follow-on year, or in test services.

  ⇒ Using NAIP for historical purposes consistently ranks high for alternate uses of the imagery. Understand what "historical purposes" means, likely with more detailed survey questions in follow-on years.

⇒ If possible, a means to limit the amount of survey responses by each county to one, as directed in the AP Notice, should be investigated. The challenge with doing this is in the formatting of the survey, combined with the fact that one cannot limit by IP address the survey responses, because one user *may actually need* to complete several surveys, if they administer more than one FSA county.

⇒ Develop questions that focus on the use of the imagery within the MIDAS and/or Thin Client applications, to ensure that the end user is still experiencing the full value of the imagery within these applications, and thereby helping NAIP program management to make decisions as to how NAIP may be better formatted to work best within these applications, potentially diverging from current delivery formats and/or product delivery methods.

Appendix A – Alternative Uses of NAIP

The 2012 NAIP Survey asked the respondents to list the activities for which FSA County and State Offices use NAIP. This question was a 'select all that apply' type of question, and was accompanied by the additional option for an open ended response. The 'select all that apply' responses can be found on page 13 of this report.

14% of survey respondents chose "other" on this question. Here, respondents could manually identify other NAIP usage. In general, alternative uses included but were not limited to (many duplicate responses have been removed):

- Acreage information for farmers planning to apply lime & fertilizer, chemicals etc.
- Acreage reporting
- Adjusting field boundaries
- CARS
- Certifications
- Change in lake levels
- Checking differences in wet area reported for prevent plant acres
- Checking mining
- CLU changes due to sodbusting
- CLU maintenance/editing
- Color contract between native and introduced grasses for CRP fields splits by practice
- compliance spot checks
- Compliance work
- compliance, CRP/CREP
- compliance, farm records
- Compliance, land divisions, wetland determinations
- Conservation Compliance
- correcting cropland, since we are having a lot of development
- Creating maps for acreage reports
- Creating new farms and tracts
- Crop acreage reporting
- Crop certification
- Crop insurance
- Crop Insurance Claims
- Crop Reporting
- Crop reporting maps
- Cropping line accuracy
- CRP
- CRP delineations
- CRP food plots
- CRP haying activities
- CRP signup
- Determining changes in cropland,
- Determining cleared wetlands
- Determining cropland vs. farmland percentages in the county
- Determining new buildings or structures
- Drain tiling
- ECP
- Editing
- Establishing new farms/tracts for farm records
- Evidences of lack of moisture for 2012
- Farm loans
- Fill producer requests
- FSFL locations
- HEL/NHEL determination
- Homestead/new constructions
- Identify the differences in CRP practices and field crops.
- Late filed acreage reports
- Making sure that building sites, etc. were taken out of production
- Map making
- Measure cleared acreage
- Measuring new trees
- Measuring split field planting
- MIDAS preparations
- NAP
- New bin sites and buildings
- New breakings
- New pipelines and electrical lines
- Non-ag determinations
- NRCS work
- Oil wells drilled over time
- Plotting farm ownership boundaries
- Prepare maps for yearly certifications
- Producer requested measurements
- Producers who re-stripped fields
- Reconstitutions
- See new ag areas
- Showing changes to land due to drought.
- Sod-busting property lines
- Some acreage reporting
- Spot checks
- Swampbusting
- TERRA
- Timber lines
- Track wind turbines and access roads being put on cropland
- Trees cleared, houses/structures built, ponds/lakes built
- Updating land classification due to development
- Urban development of farms now in subdivisions.
- Urban sprawl
- Verify land use
- Verifying legal descriptions
- View affected individual customer land ownership locations
- Wetland Compliance issues
- Wind farms
- Working with farms in adjacent counties

Appendix B – Recommendations to Improve NAIP

The NAIP survey allows for open ended respondent feedback regarding recommendations to improve NAIP. This feedback is found below. Content has only been changed from the raw responses to correct spelling errors, remove proper names, and to remove "no" or "none" answers. As such, some responses may not have anything to do with NAIP per se. The totality of the feedback is extremely valuable to assess NAIP implementation in future years:

- It would be nice if it was continually available for use.
- Maps are fine it is the whole GIS system that does not work well. Editing takes forever and rarely works.
- Sharper Image
- I would like to have current imagery every year in the smallest resolution possible.
- lower the cost
- Make it available every year.
- Imagery was too light in several areas in Bureau county. May have been due to drought conditions.
- Have imagery available to the counties earlier.
- We have seen many issues with clouds and their shadows on this imagery in this county. Also, it appears to be shot late in the day in some cases, because there are some long shadows from tree lines.
- It would be nice to have it updated every year
- It would SO helpful to have the imagery every year to provide service to the producer and allow them to make an accurate acreage report.
- Ensure that FSA has control and is proactive in keeping the administration of the NAIP. Seek out funding from many organizations so that NAIP is available on an annual basis.
- Need to make editing easier and faster
- Make editing easier and faster
- Need to make editing easier and faster.
- Collect LIDAR and develop DEM. Shorten flying date period to four weeks and coordinate collection dates by geographic location (e.g. In Michigan collect all of Lower Peninsula prior to Upper Peninsula.) Explore possibility of east-west flight patterns starting at south state border and continuing north.
- Need to make editing easier. Our county has over 300 new oil well that need to be updated on the CLU. The editing right now is slow and time consuming.
- Do not like the vertex editing. When moving a CLU line it attaches automatically to the next CLU. Would like a labeler like the one used on the very 1st GIS we started using in 2002/2003
- No. I think they do a very good job with NAIP under difficult circumstances ranging from weather to budget cuts.
- Allow for new maps every year in counties with large cities and multiple cropland changes every year due to new housing in rural areas as the cities expand.
- In drought year 2012 there was little contrast. we could not see field and pasture boundaries. Washed out.
- There was not enough contrast in drought year 2012. unable to see field and pasture boundaries. Washed out.
- Only that we have the opportunity to use instead of the site being unusable most of the time.
- When putting a map in a layout, when you used to toggle all other field lines disappeared, now just the acres in the fields disappear. It was better when all lines disappeared and just the field you wanted showed.
- It would be nice if the maps would work on a regular basis. It is hard to service our producers when it is down the majority of the time lately.
- Clearer imagery would be very helpful! Too blurry.
- Why is it so blurry?
- there needs to be a standard template for printing and to automatically be able to always use it when printing.
- Can the sharpness of the image be corrected? It's too blurry.
- Just to keep the NAIP imagery online at all times
- Just making sure that the Imagery services do not go offline
- I would like it if we could have new NAIP imagery every year.
- Better definition of pixels. I don't know why, but when I used the "Mapmaker" to make my maps, it reverted to 2010 imagery.
- The vertex editor is snapping even when the snapping option is off. It makes it hard to adjust in small areas.
- As I enlarged an area, the definition of the pixels became very blurry.
- Wish that it was housed at least state wide and not national. So problems would not affect everyone as a whole and just states specifically.
- Have way to save maps as a PDF doc like in the past. Improve editing processes - allowing more than one user at a time in a county office. VERY IMPORTANT Less downtime with server issues.
- Wish that it was housed at lease state wide and not national. So problems could be addressed faster.
- Improvement in horizontal accuracy.
- Make it easier to find out in GIS what day the current map was flown. I don't know how to figure that out, but there was a significant difference between WY and CO, and I wanted to know why.
- Avoidance of interrupted service and usage. Zooming in becomes blurred. Capability to zoom in with clarity. (Fence lines, ditches, etc.)
- improve image quality when you zoom in on NAIP imagery, it currently gets very grainy when zooming in to the field level
- Add an ownership layer
- prevent imagery from getting grainy when you zoom in
- fly dates later so that crops are visible.
- We have had problems with imagery being available at times when needed in the county office.
- offer 3 different times of imagery to choose from. Prep, planting-growing, after harvest
- Imagery is excellent. Program it is run in is awful.
- No. Our imagery in 2012 was very good. We did not have any areas this time that has cloud cover. Contrast was great.
- It would be great if it worked as much as it is down.
- The imagery is generally fine to work with it is Citrix that is a waste of a program

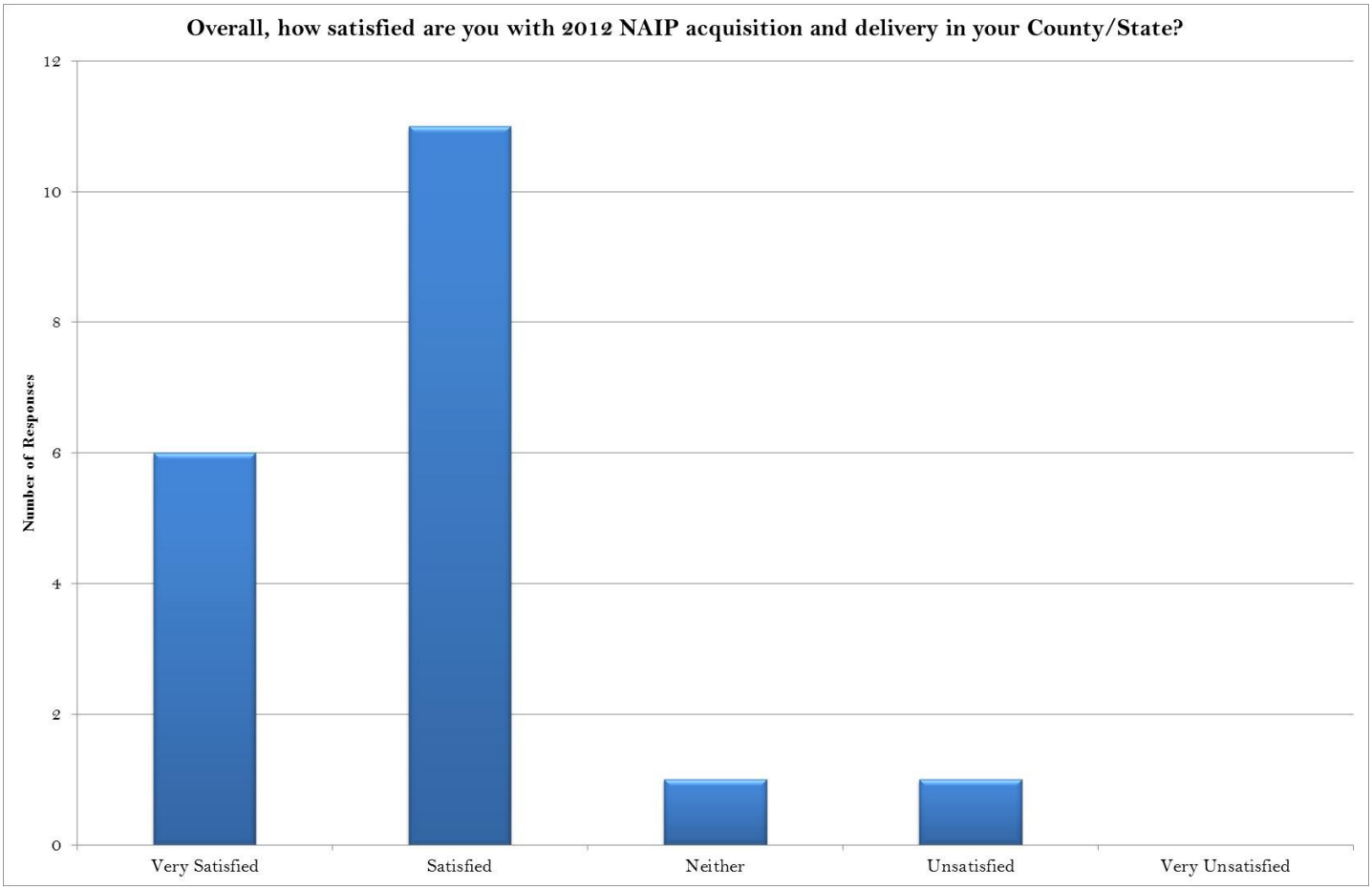
- Work the bugs out so it works consistently daily
- the clarity of the picture
- Use satellite
- Clean up imagery to get rid of clouds before delivery to FSA. Provide new NAIP imagery every year.
- I really like receiving imagery yearly.
- Our imagery was extremely cluttered with cloud cover.
- we lose our imagery service too much. Too much time down because imagery is out.
- get imagery earlier than October, preferably before the end of July. make ready available on the DATA Gateway, for down load. so imagery can be better utilized in county office
- The time of year that the imagery was taken this past year
- It would be most helpful to have imagery every year. It is difficult to update 2 years worth of line changes in the short window that we have.
- I would like to see new imagery every year so that land use changes can be documented in a more timely manner and CLU line corrections made.
- NAIP is great. Thin Client is not dependable.
- would be nice to get it every year - but that's a budget issue.
- The imagery looks good. The system it is delivered in (ArcMap/ThinClient) needs a lot of work to make it functional again.
- One flight in late spring for compliance, and one flight in the winter so that we can see out field borders.....But none of this will matter if the IT people can't keep our computer up and running so that we people out here in the field can do our jobs to serve the farmers and ranchers in this nations the best that is possible!!!!!
- It needs to work much faster!!!!!
- No, but the map program itself has so many glitches and days that it is not available or not working
- Appreciate having current maps to use.
- fly every year
- We really need imagery every year, plus we need access to all prior year imagery in our current system.
- The imagery is fine but the software we are using to implement our programs is very poor.
- Pleased with the NAIP imagery. Very unhappy with the accessibility (programming) the past 3 months.
- Make current year imagery available sooner for crop reporting purposes, which may be difficult.
- -Fly Mississippi Every year -Periodically (prefer annually) collect a high resolution leaf off image
- 6 inch resolution
- The imagery is great, I wish the ARC 10 would run faster
- Add more servers. When we correct the images the system crashes or takes a long time to load. The images were flown in spring/ summer, but we did not receive the images till winter.
- needs flown every year or to have access to Google maps for current imagery
- Find money to fly new imagery every year
- Due to the fact that Google can have higher quality, more up to date images, find a way to use it. In addition, Google can be zoomed in to view at a closer point. Thank You
- Make available to FSA on a no cost basis
- Make available to FSA yearly on a no cost basis.
- Simplify the aerial photo map creation process
- This year I do believe the imagery is a little too dark in areas.
- Get the layer certified faster for creating maps
- NAIP Imagery is very useful at the county service center level. If budget allows, we would prefer that imagery be taken every year or every other year.
- attention to the crops and growing conditions - the Midwest was so dry that 2012 looks like dry dirt in most fields.
- Very satisfied
- The mapping imagery is very good. Only recommendations I have is for the tools used to facilitate it.
- late enough in growing season to distinguish crops
- NAIP image needs to be late enough in growing season to distinguish different crops. 2012 NAIP hard to tell soybeans from corn.
- Earlier Delivery to the State for all Counties
- Higher resolution, clean, clear, maps are needed for general work. Public Google/Bing maps have more to offer. The current cost savings are a mute point if quality does not allow for determinations being made from the office.
- The imagery is fine. It's the program that it's delivered in (GIS) that is the biggest disappointment. I am so tired of dealing with problems with it everyday. Something needs to be done!
- I think the imagery is good but the program we work with has a lot to be desired. Slow, don't work properly most of the time. Many many problems
- When letting us know when it's available, let us know date taken.
- make the imagery available every year to help with our compliance activity every year
- in terms of photo quality, timing of the flight, and dissemination of the final product to field offices, the 2012 photo is the best we've had. as the linework of the CLU is primarily based on NAIP and that same CLU linework being the foundation in which most farm program payments are ultimately based, it is more important than ever to have a current and high quality NAIP image to work with. my recommendation - provide field offices with a NAIP image on an annual basis if possible.
- cancel flights during extreme drought.
- Better resolution when zooming in.
- Speed it up. It is way to cumbersome and time consuming.
- Provide annually at the most accurate image available
- Yearly NAIP imagery rather than every other year for historical purposes, compliance purposes, and change detection
- Would like to have new imagery every year.
- being flown at a greater detail (6") would be a great asset
- to make it more user friendly not so computer tech
- yearly NAIP imagery rather than every other year for historical purposes, compliance purposes, and change detection
- Yes please make it so that we can give the 2012 imagery to the public.

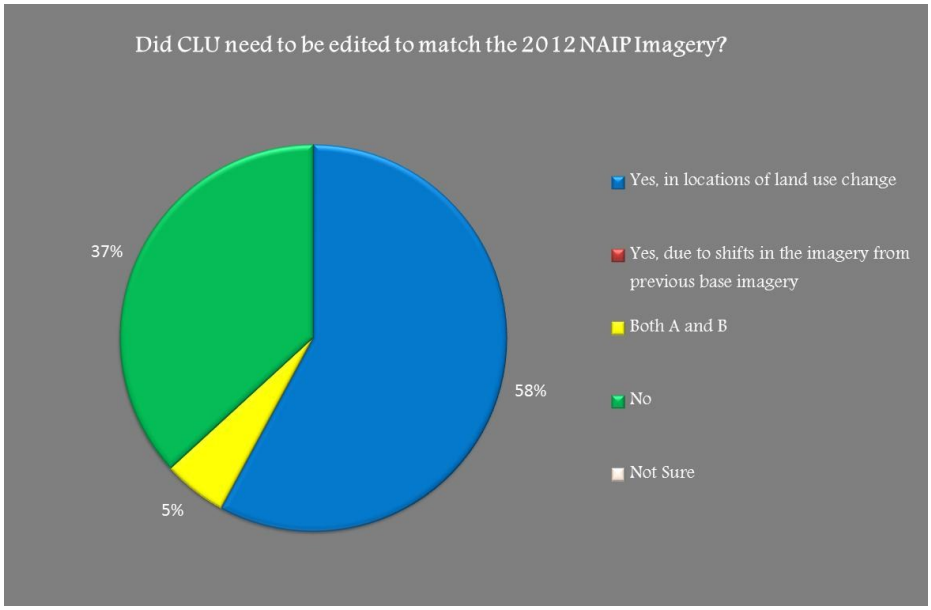
- Please fly when fields are most likely to have crop covers...which is the range suggested on an earlier question.
- Maybe have survey around March or April
- print maps easier
- Why don't we just utilize Google earth and do our layer with their imagery as a base.
- No, we have an excellent coordinator who goes above and beyond
- Server competition is a problem with all GIS related issues and services
- Needs to be a sharper/clearer image and have the servers working better so we quit having problems with NAIP being available to use! And it should not blur when we edit CLUs. We should not have to move lines to match NAIP ever!
- It appears that when we zoom in the images are not as clear. We would like to see more detail when zoomed in close to land features or buildings.
- 2012 was such a widespread drought disaster year nationwide, it was a shame the imagery was taken in 2012. The imagery would have had better color, clarity and contrast in 2011. I'm certain it is impossible to schedule taking imagery during peak conditions, but it would be nice!
- Reduce the time from when the imagery is taken until the time the imagery is released to the county. 4 months + or - is too long.
- Would like to see it flown in August
- We have a lot of native hay in our county and it really helps us when the imagery is flown later. After the haying is done.
- It was hard to see the distinction this year due to the drought. Crop land and pasture was close to the same color.
- Later flight dates due to crop cover. Cotton acreage was pretty hard to see on the 2012 imagery.
- Yearly images
- It could be more user friendly. The annotation needs to be improved (sometimes not even located in the correct field). The CRP labels that we had with the old imaginary are not the same, they do not have contract info. Printing maps is very slow. Mapbooks is good except when printing by farm we cannot have all tracts on one page. When using the measuring tool sometimes the measured acreage appears too small and to light in color to read.
- Due to all the urban development, we need this imagery every year.
- Presidio County is a border county in the Chihuahuan Desert. All cropland is along the Rio Grande. Imagery does not cover all areas up to the river, so much cropland is not available in the 2012 imagery. To be useful and complete, imagery must cover all areas up to and including the Rio Grande.
- Improve clarity, some areas are a little blurry. Decrease the lag time between the capture date and imagery availability date. Make imagery availability more consistent during daytime office hours and not be off-line for upgrades. Our map projects frequently open without the imagery being visible or even deleted from the project Table of Contents.
- Brewster County is a border county and imagery did not cover all land up to the Rio Grande.
- The imagery itself is good, but the ARC GIS operating system is in no way functionally good.
- Bring back Map Maker, closer and more clear imagery
- The weather plays such a factor in the imagery that is provided to us, it is hard to pin point a date that is the best time. With flooding (2011) and drought (2012) it is unfair to rate the quality on the imagery. 2010 imagery was great, very distinct and we also had a great crop year in this area.
- attempt to fly the counties when crops are still in the fields, not after harvest of most crops.
- The imagery needs to be flown late July to Early Aug in order to see the cover of corn/ bean/ forages. Could not determine the cover in 2012 very well.
- Fly the county later late July or Early August to show the cover on corn/beans/forages.
- The county was flown too early for the cover of corn and beans to be vivid. Late July of Early Aug would be better
- The font size for the Farm Labels and Field Labels to be automatically updated or inserted into the CLU imagery
- Flying late July to early Aug for Corn & soybeans would be better for our area. Cover did not show. The map quality was not bad it was just the fly time that determined the satisfactory of the map. Also the drought may have hindered the cover too.
- The GIS is slow and only works sometimes
- create a more user friendly map maker
- The font sizes of the Farm Labels and Field Labels be automatically updated to be able to read without having to change the data
- Better map printing system
- Need the ArcGIS program to work more smoothly and faster. Too many glitches.
- Thin Client could be faster and much more reliable. Also, it could have a more efficient way to produce maps.
- We would like imagery that is more clear. We actually go to another website to get more accurate zoomed in imagery!
- Nebraska imagery needs to be flown later than the end of June through the middle of July. End of July to the middle of August are better dates for Nebraska
- correct the slowness of the program and make it accessible to more than one user at a time
- The only suggestion I have is our imagery is pretty light and maybe needs more color balancing to be able to see the fields more clearly.
- Not sure is it can be improved, but corn was not as visible on imagery as soybeans and tobacco. Also, would like to have NAIP available every year.
- Not sure if it can be improved, but corn was not as visible on imagery as soybeans and tobacco. Also, would like to have imagery available every year.
- Not sure why or how it can be improved, but corn was harder to determined in fields than soybeans and tobacco in 2012. Also, would like to have NAIP available every year.
- less down time
- Server availability continues to be a barrier to success in completing GIS work
- would like to see better clarity and focus
- NAIP imagery is excellent however availability of the server is not conducive to work flow.
- due to crops being planted by July 1, each year, would have been nice to have imagery taken after July 15 of the crop year to show a more accurate picture of crops planted for the season.
- as stated in the questions, would love to have seen the imagery completed after July 1, but understand sometimes that isn't possible. the purpose is that crops are usually planted by July 1 each year. so imagery coverage would have been more accurate for the year flown.

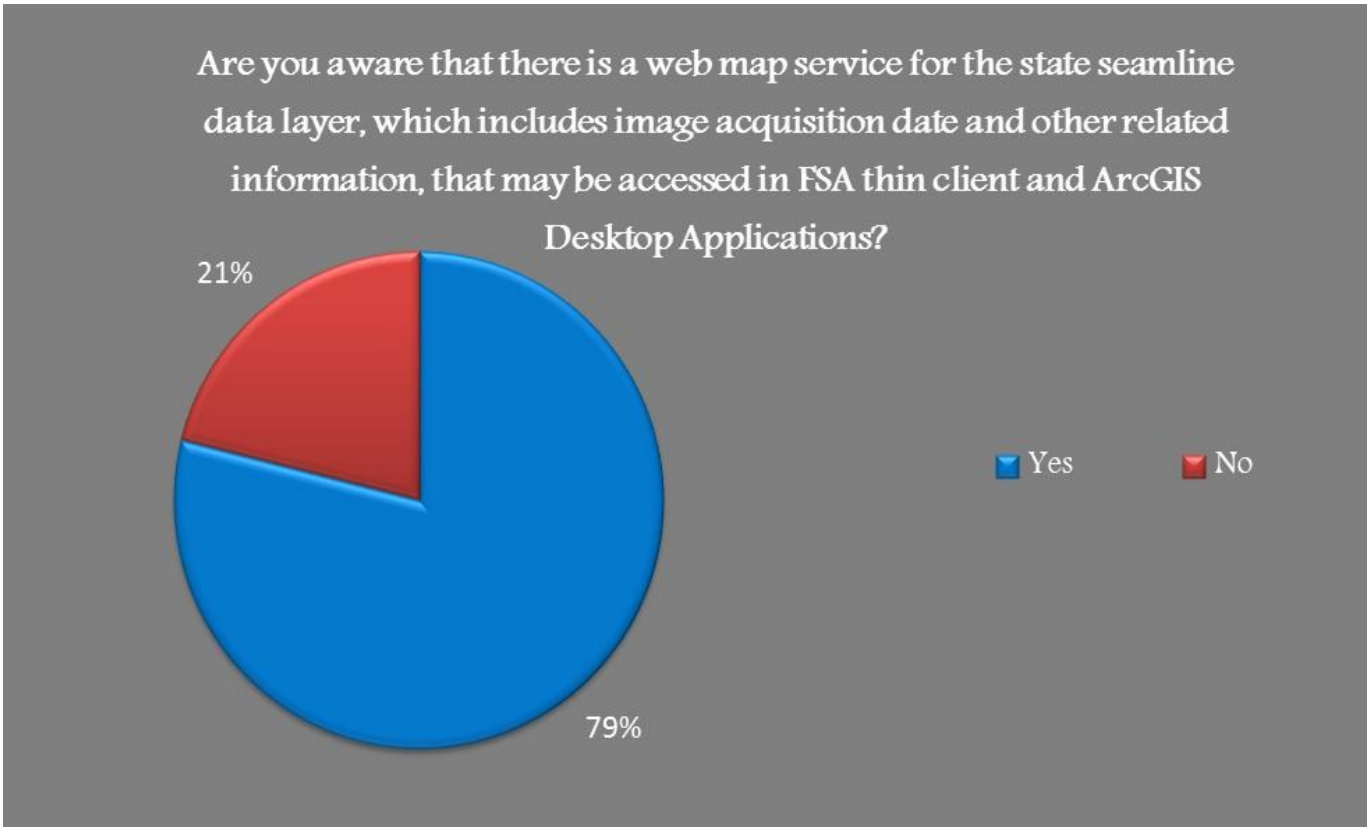
- Would like to receive it more timely in the season.
- not at this time
- I wish the imagery was clearer when zoomed in so far.
- Fly every year!!
- Option to postpone collecting imagery in a drought year.
- just do the best you can
- Get it deployed to offices sooner
- what we have is good for what we use it for.
- VA has not been released to use 2012 imagery, it is still being tested.
- No, i think you folks do a super job already!
- Make the imagery available sooner after each flying season within the state. For example, season 2 was not available until October on image services. Also, please deliver a copy of the CCM's to the State Offices. These are needed for many reasons including disaster response and other off site needs.
- Have it available more often....
- Having the fly over prior to trees leafing out provides the best imagery for our needs.
- VA has not been released to use 2012 imagery, it is still being tested.
- faster processing

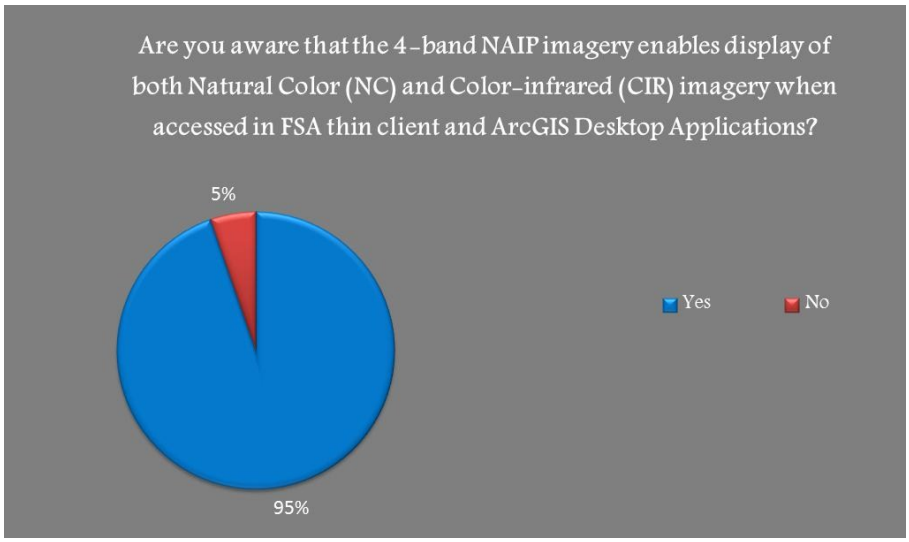
Appendix C – Responses to NAIP Survey Questions from State Offices Only

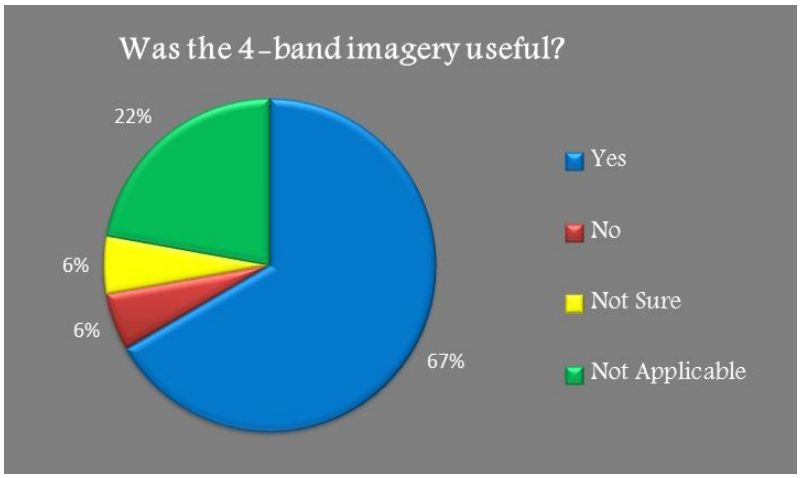
With over a thousand responses on the NAIP Survey, only 22 of those responses are from State Office employees. While these employees *may* know less about certain farm programs, they *may* know more about other aspects of FSA work, such as GIS and so forth. Suffice to say, gaining their opinion separate from the multitude of County Office inputs, may be worthwhile. What is shown below and in the following pages are charts for several (but not all) survey questions, where responses have been filtered to consider only employees that stated they worked in an FSA State Office. No additional analysis has been done.

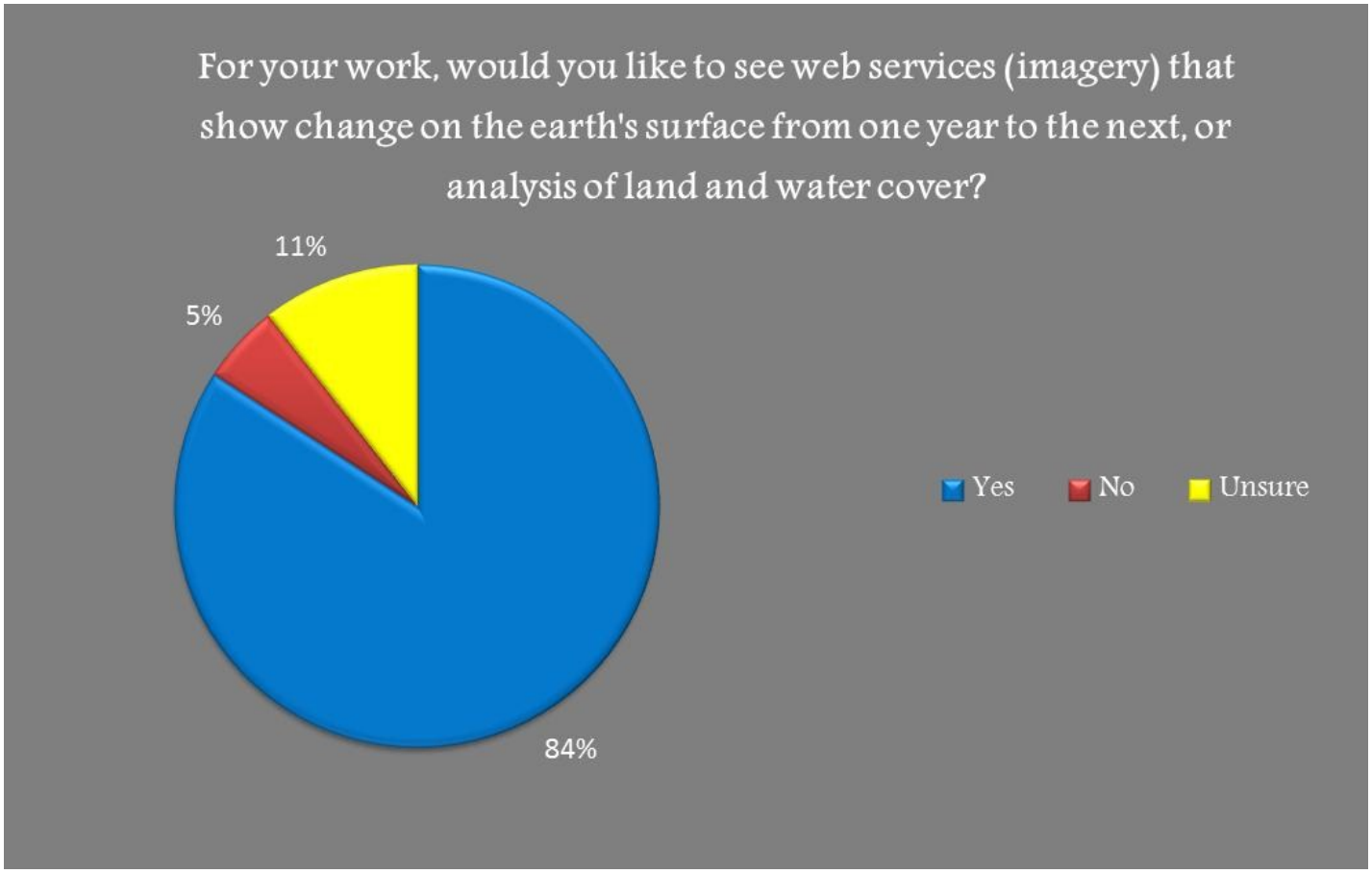


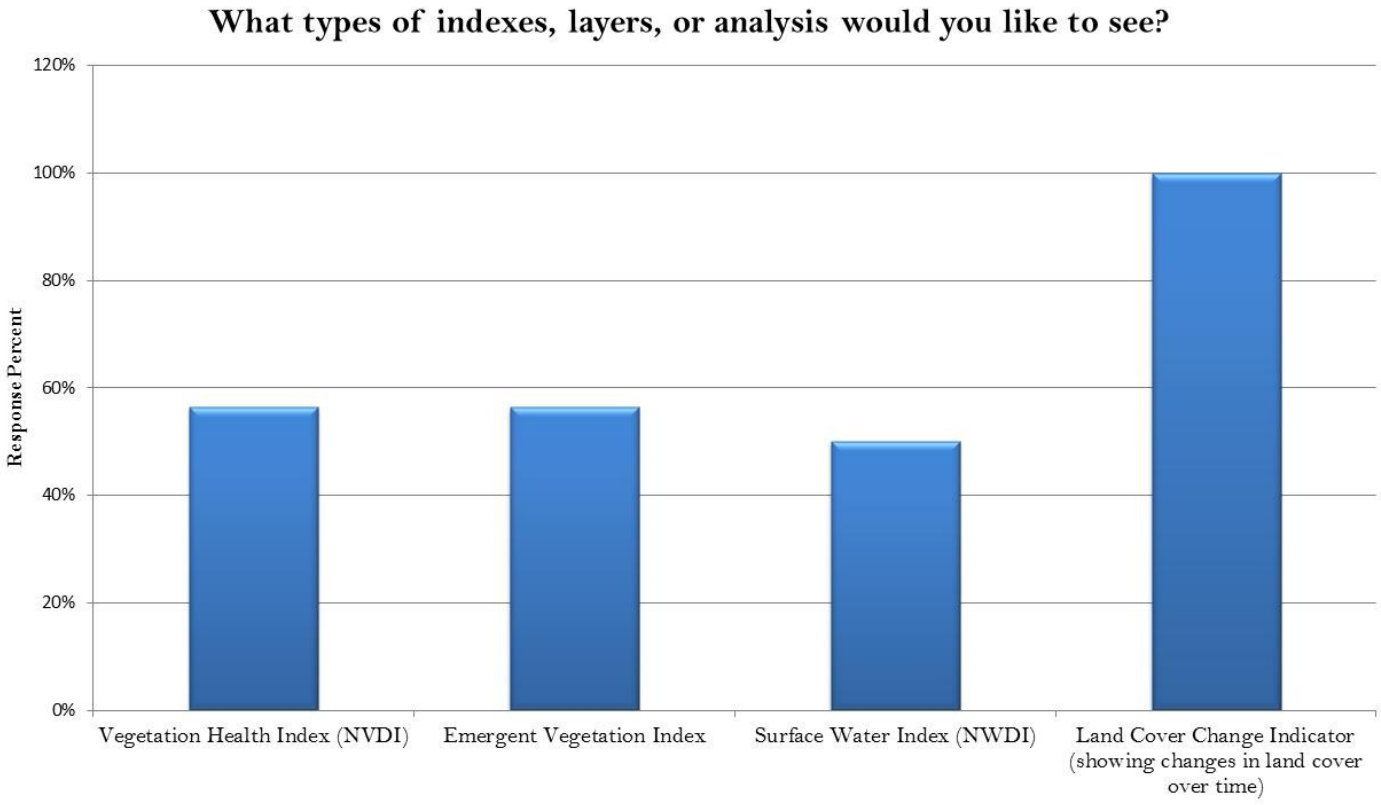



Are you aware that there is a web map service for the state seamline data layer, which includes image acquisition date and other related information, that may be accessed in FSA thin client and ArcGIS Desktop Applications?
21%
79%
Yes
No


Are you aware that the 4-band NAIP imagery enables display of both Natural Color (NC) and Color-infrared (CIR) imagery when accessed in FSA thin client and ArcGIS Desktop Applications?
5%
95%
Yes
No


Was the 4-band imagery useful?
22%
6%
6%
67%
Yes
No
Not Sure
Not Applicable


For your work, would you like to see web services (imagery) that show change on the earth's surface from one year to the next, or analysis of land and water cover?
11%
5%
84%
Yes
No
Unsure


What types of indexes, layers, or analysis would you like to see?
Response Percent
120%
100%
80%
60%
40%
20%
0%
Vegetation Health Index (NVDI)
Emergent Vegetation Index
Surface Water Index (NWDI)
Land Cover Change Indicator (showing changes in land cover over time)