

2008 Imagery Requirements Survey: Summary Report

**USDA
Farm Service Agency
Aerial Photography Field Office
Salt Lake City, Utah**

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Section 1 – Executive Summary

The Imagery Requirements Survey was initiated as a means to assess the imagery needs of the Farm Service Agency's (FSA) primary customers, the FSA State and County Offices. The Imagery Requirements Survey was distributed through a web based medium to FSA State Geographic Information System (GIS) Specialists and/or Coordinators. In turn, each State GIS specialist or coordinator selected approximately twenty percent of the counties in their state to participate. This survey was not required; however, each participant was highly encouraged to respond.

To assess the needs of the users, the survey was divided into six imagery requirement areas (categories) to include the following:

- acreage reporting
- boundary maintenance, to include CLU maintenance, CRP maintenance, environmental easements, measurement services, and reconstitutions
- program compliance
- site inventory analysis, to include Food, Feed, and Seed Facilities, Grain Bin Tool, and Farm Facility Loans
- disaster program administration and emergency planning and response
- farm loan programs

The following is a brief summary of survey responses:

Total Survey Responses = 408

- Over 80% of respondents use imagery for boundary maintenance, program compliance, and acreage reporting.
- Approximately 50% of respondents use imagery for disaster program administration / emergency planning and site inventory analysis.
- Approximately 20% of respondents use imagery for farm loan program activities.
- 58% to 78% of respondents would like to see imagery updated every year for each category surveyed.
- The majority of important recognizable features that users needed to see on the imagery were field boundaries, roads, fence lines, buildings, crops, and grain storage facilities, items that would be readily apparent on one meter imagery. Smaller features, such as farm equipment, single trees, fence posts, and well heads were less important. This will be covered more in depth in the individual questions.

The following general conclusions may be drawn:

1. Imagery is used in some capacity for all six categories: acreage reports, boundary maintenance, program compliance, disaster program administration and emergency planning, site inventory analysis, and farm loan programs.
2. The majority of users would like to see new imagery every year.

3. Smaller features, such as fence posts, single trees, well heads, and farm equipment are slightly less important than the larger linear and areal features on the imagery, suggesting that 1 meter resolution is sufficient for most purposes.

Section 2 – Overview and Results Comparison

The USDA-FSA Aerial Photography Field Office (APFO) is responsible for the acquisition, quality assessment, data delivery, and archiving of several imagery programs, such as the National Agriculture Imagery Program (NAIP). FSA continues to adjust and modify imagery acquisition 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 customers.

Feedback from users is vital for program improvement. To facilitate this, APFO prepared a survey for FSA State and County Office response. The Imagery Requirements Survey was completed utilizing a web survey engine. This helped alleviate human error in survey scoring and analysis.

FSA State GIS specialists and/or coordinators were instructed to take the survey, then select approximately 20% of the counties in their state, and have one individual at those County Service Centers take the survey. The survey was not required by notice; however, participants were highly encouraged to respond. There were eleven states that did not respond to the survey and two states had in excess of twenty percent of their counties respond. Based on analysis of the data, excess responses from the same State did not skew the survey results significantly (approximately 1/2-1% in any given category).

The survey was taken over a two week period, between October 28 and November 12, 2008, utilizing Survey Monkey, a web-based survey engine for creating surveys to be taken via the internet. The format of the survey varied to include the following types of questions: multiple choice, open ended, select all that apply, and rated. The survey was divided into six sections and each section comprised a list of the same eight questions. The first question in each section asked, “Do you use imagery to do...” and one of the following categories was listed:

- Acreage Reports
- Boundary Maintenance
- Program Compliance
- Site Inventory Analysis
- Disaster Program Administration/Emergency Planning
- Farm Loan Programs

If the respondent answered yes, then they were directed to the next question in that section. If the respondent answered no, then they skipped those questions and were directed to the next section. Upon close of the survey, responses were downloaded from the survey website in a variety of formats, including a survey summary, raw answers, and

parsed answers as needed. While analysis of survey returns could be performed endlessly, it is understood that the results herein really only scratch the surface of potential analysis.

As stated above, the survey was divided into six sections and each section comprised a list of the same eight questions for each category. The following charts compare six of the questions from each section.

The questions were:

- Do you use imagery to...?
- Which of the following features need to be clearly recognizable on the imagery for...?
- Which of the following delivery schedules best meets your requirements for ...?
- How often does imagery need to be updated to best meet your requirements for...?
- Rate the importance of acquiring imagery that covers each of the geographic areas with regard to...?
- Select a start and end date for acquiring imagery that best meets your requirements for...?

The following chart depicts the imagery requirements by category, and shows that imagery is used to some degree for all six activities. Over 80% of users responded that they use imagery for acreage reporting, boundary maintenance, and program compliance. Approximately 50% of users responded that they use imagery for disaster program administration and emergency planning and response as well as site inventory analysis. Approximately 20% of users responded that they use imagery for farm loan program activities. Each column is shown in a pie chart in the individual category sections later in this report.

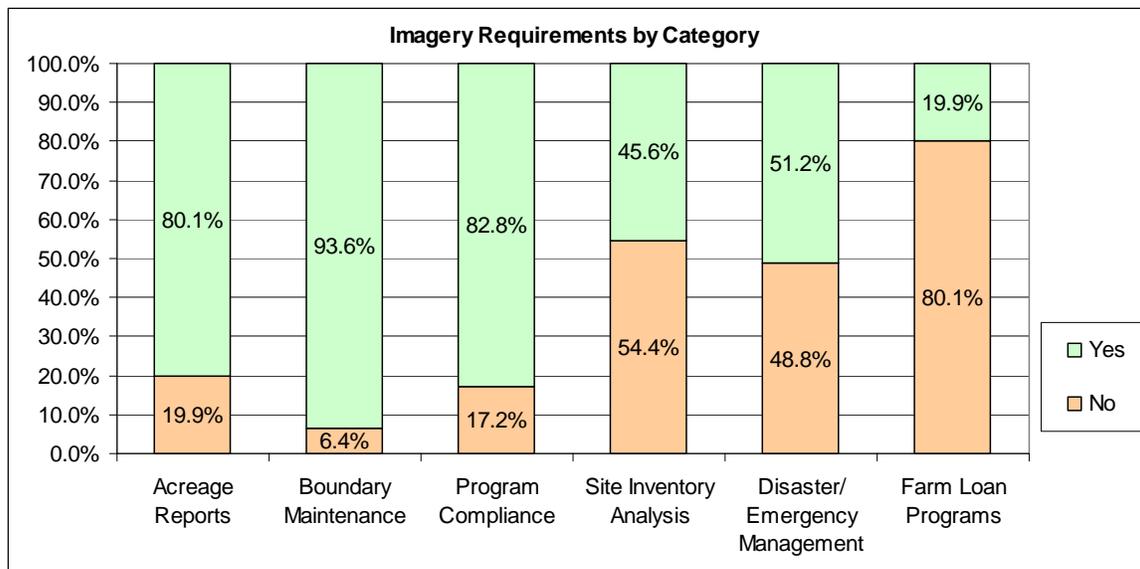


Chart 1 – Comparing Imagery Requirements by Category

The next chart depicts which features respondents want to clearly recognize on the imagery for each category. According to the survey, large individual features such as buildings and grain storage facilities, most linear features, such as field boundaries, fence lines, and roads, and area features, such as crops, were given more importance than smaller individual features, such as farm equipment, single trees, fence posts, and well heads. Larger features such as building and grain storage facilities were given the same importance as fence lines, irrigation ditches, crops and crop patterns. All of these are items that would be readily apparent on one meter imagery suggesting that one meter resolution is sufficient for most respondents' purposes. Each category is represented by a bar chart in the individual sections later in this report.

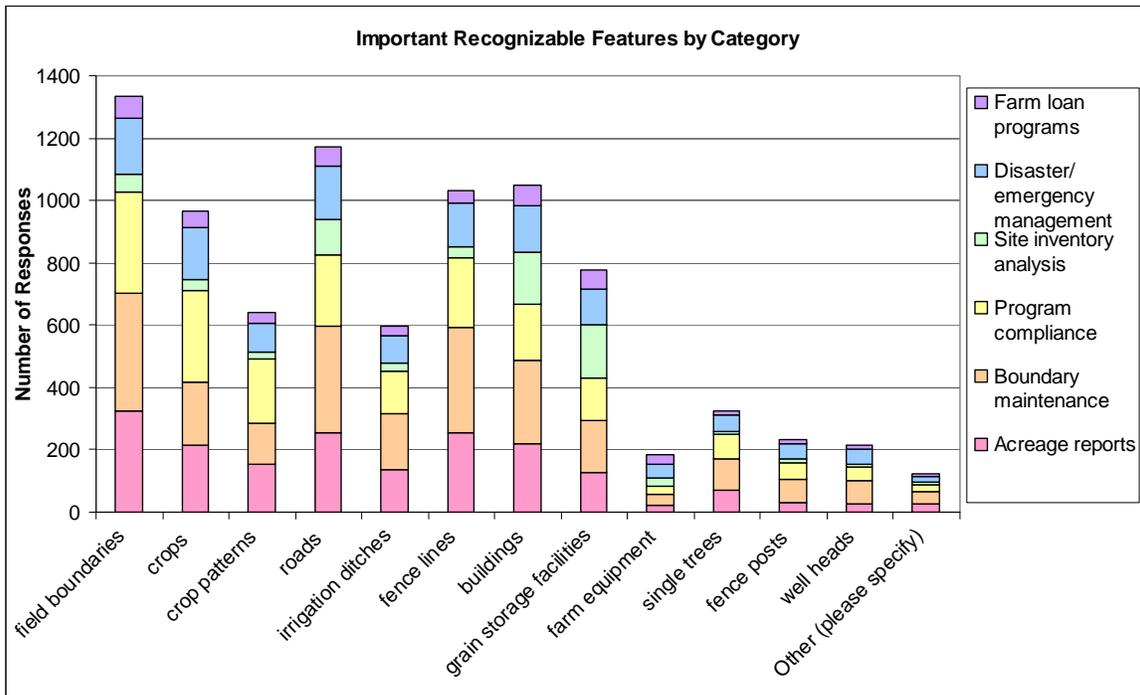


Chart 2 – Comparing Important Recognizable Features by Category

This next chart shows the preferred delivery schedule for each category. Most respondents appear satisfied with the “30 days after acquisition” time frame. Of those that replied regarding disaster and emergency management, the majority would like to see imagery 10 days after acquisition, which one would expect in a disaster situation. Some respondents, between 25% and 30% would like to see imagery 10 days after acquisition for the acreage reporting, boundary maintenance, and program compliance categories.

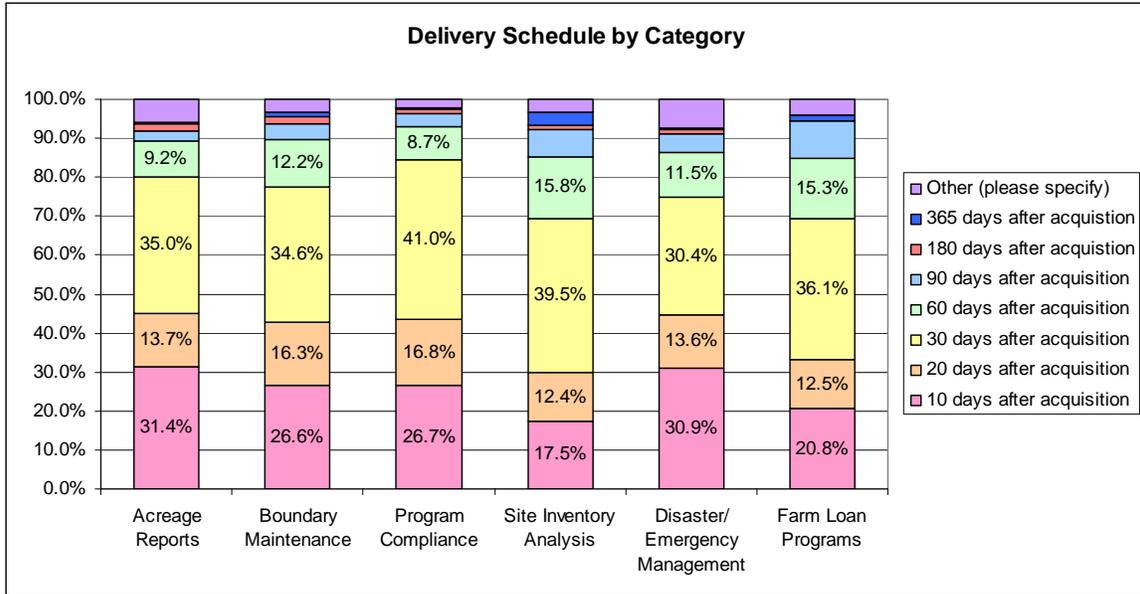


Chart 3 – Comparing Imagery Delivery Schedule by Category

How often respondents would like to see the imagery updated to best meet their requirements by category is shown in the next chart. The majority of users responded that they would like to see imagery updated every year. Program compliance was the only category in which the second highest percentage of users requested “twice a year”; all of the other categories chose “every other year” for the next highest percentage. Disaster/emergency management had the same percentage for “twice a year” and “every other year” responses. Each column is shown as a pie chart in the individual category sections later in this report.

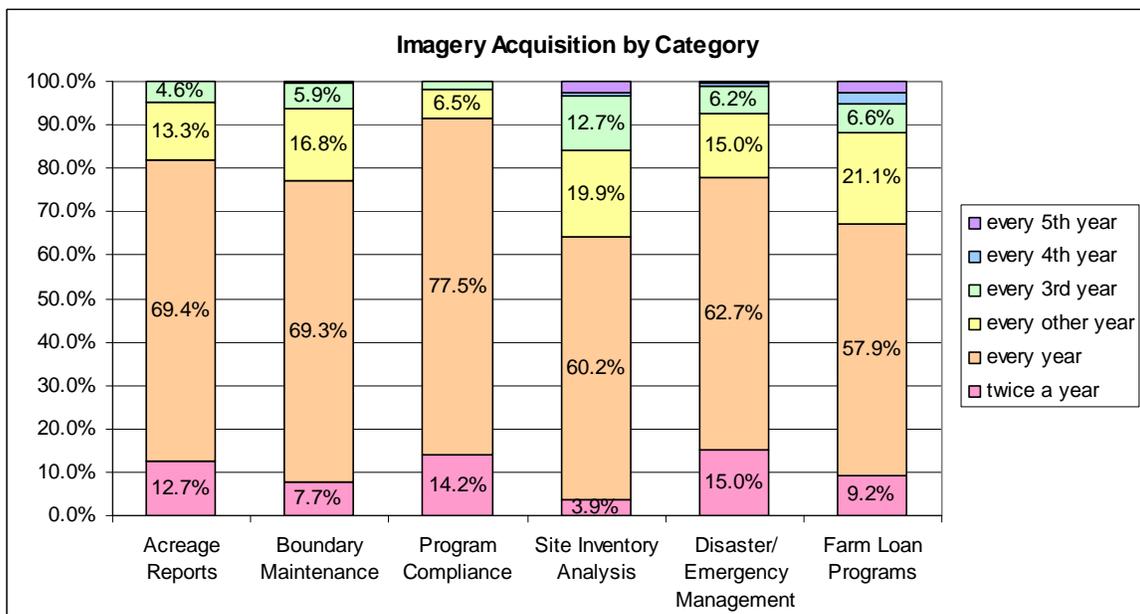


Chart 4 – Comparing Imagery Acquisition Requests by Category

The next four charts depict the importance of acquiring imagery that covers the following geographic areas: entire state, entire county, individual farms for spot checking, and agricultural land as defined by CLU. The summary of responses for each area shows that the majority of respondents would like to see imagery cover an entire county, farm or CLU area. The geographic area with the least variation was statewide coverage. Each column is shown as a graph in the individual category sections later in this report.

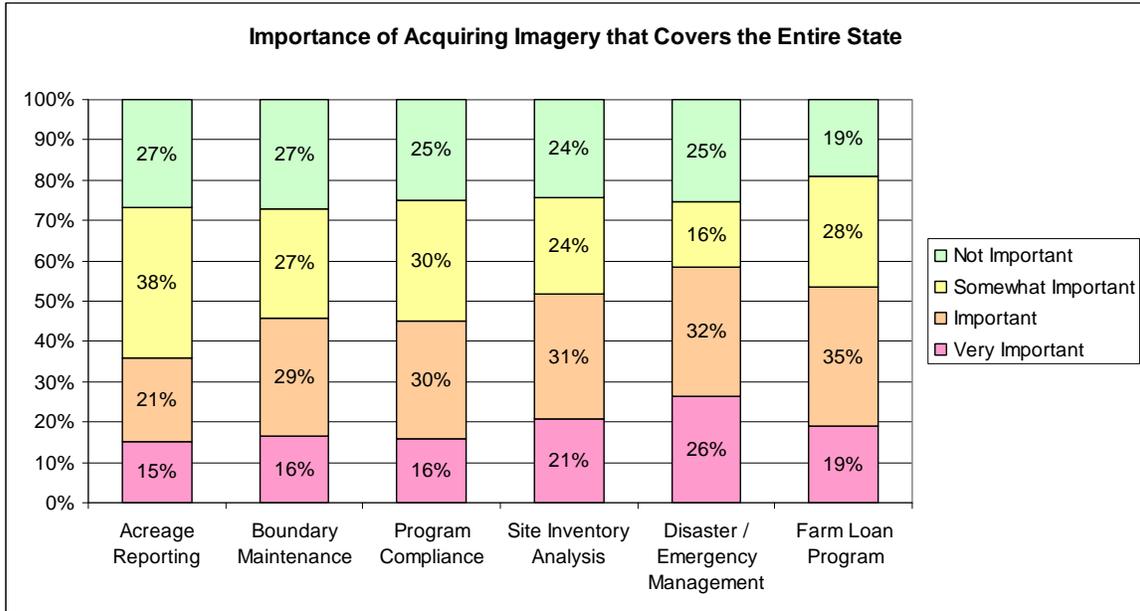


Chart 5 – Comparing Imagery Acquisition Areas by Category

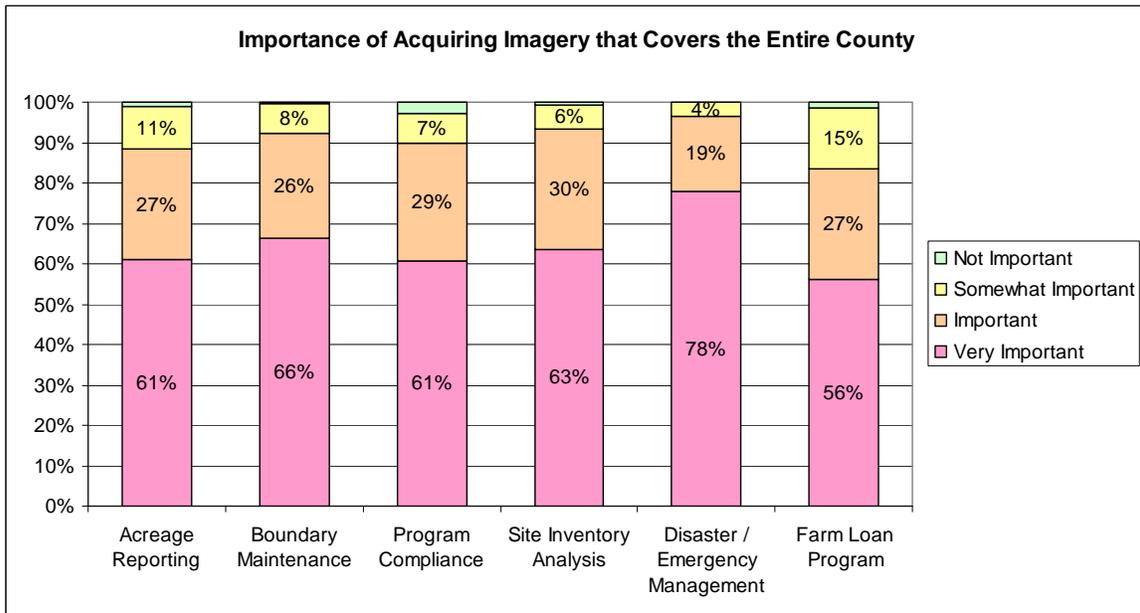


Chart 6 – Comparing Imagery Acquisition Areas by Category

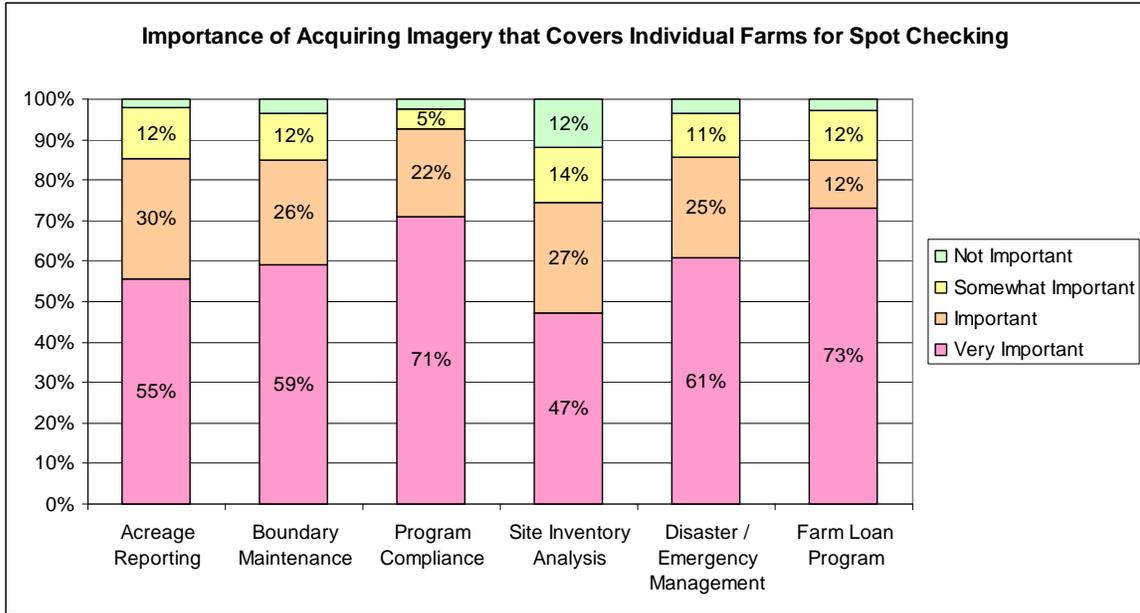


Chart 7 – Comparing Imagery Acquisition Areas by Category

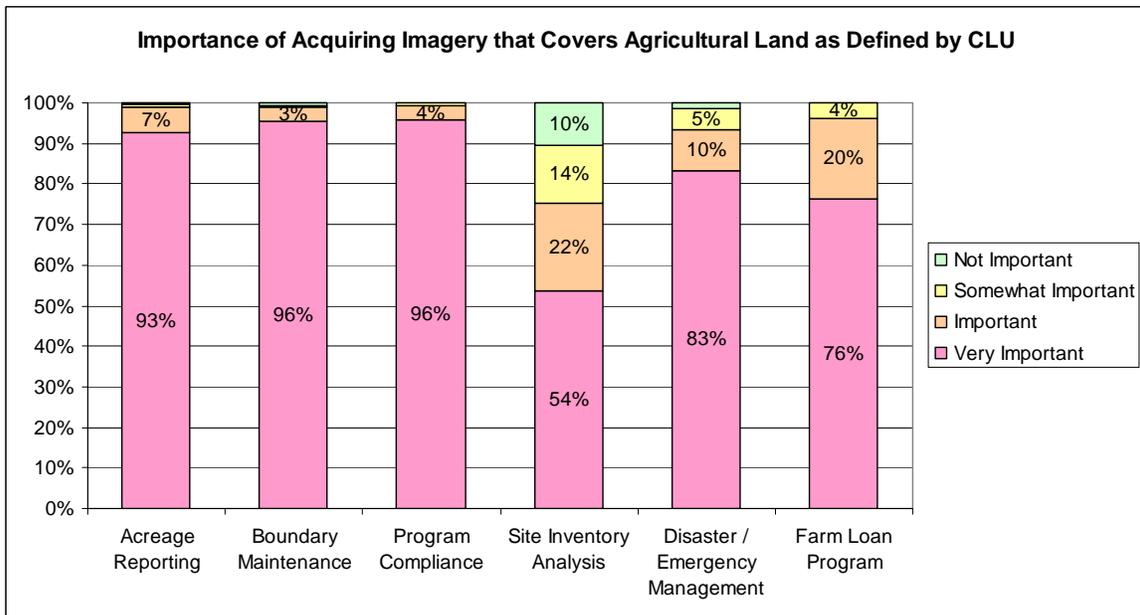


Chart 8 – Comparing Imagery Acquisition Areas by Category

The following chart shows the summary of start and end dates to attempt to show a flying season that would be suitable for all of the categories. January 1st and December 31st were very popular responses for flying start and end dates. If these dates were excluded from the graph, the “flying season” would extend from early spring to late fall. Each section, later in this report, shows a graph of the start and end dates for each category.

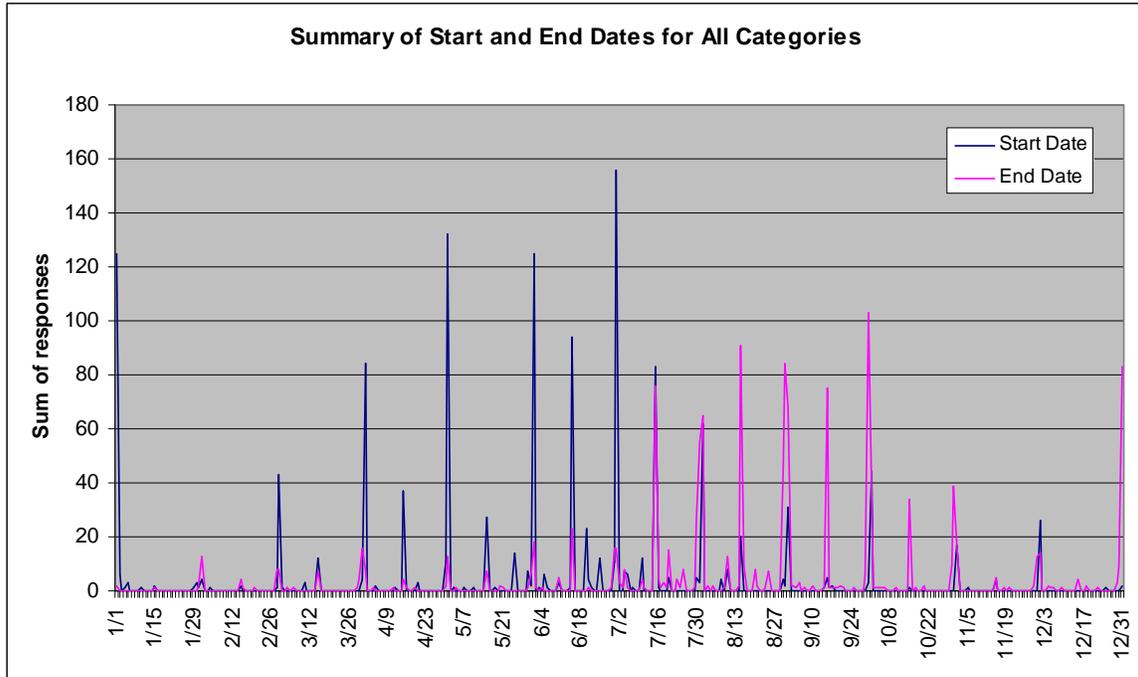


Chart 9 – Summary of Start and End Dates for All Categories

Section 3 – Summary of Survey Results

The following section is a statistical breakdown of the survey on a question by question basis.

Question 1. Name: This question was optional, and 235 out of 408 responded.

Question 2. Where do you work?

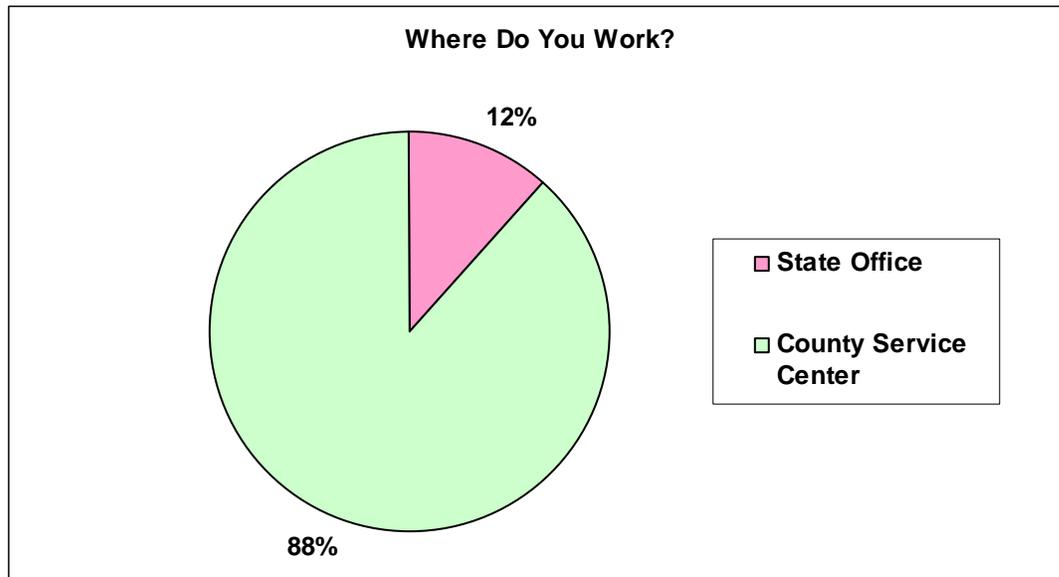


Chart 10 – Question 2

Question 3. What is your 2-digit State FIPS Code? Responses varied and not all states responded.

Question 4. What is the name of your county? This question was optional and 267 of 408 responded. A list of states and counties that responded to this question is available in the survey summary table.

Questions 5 through 12: Acreage Reports

Question 5. Do you use imagery to compile acreage reports?

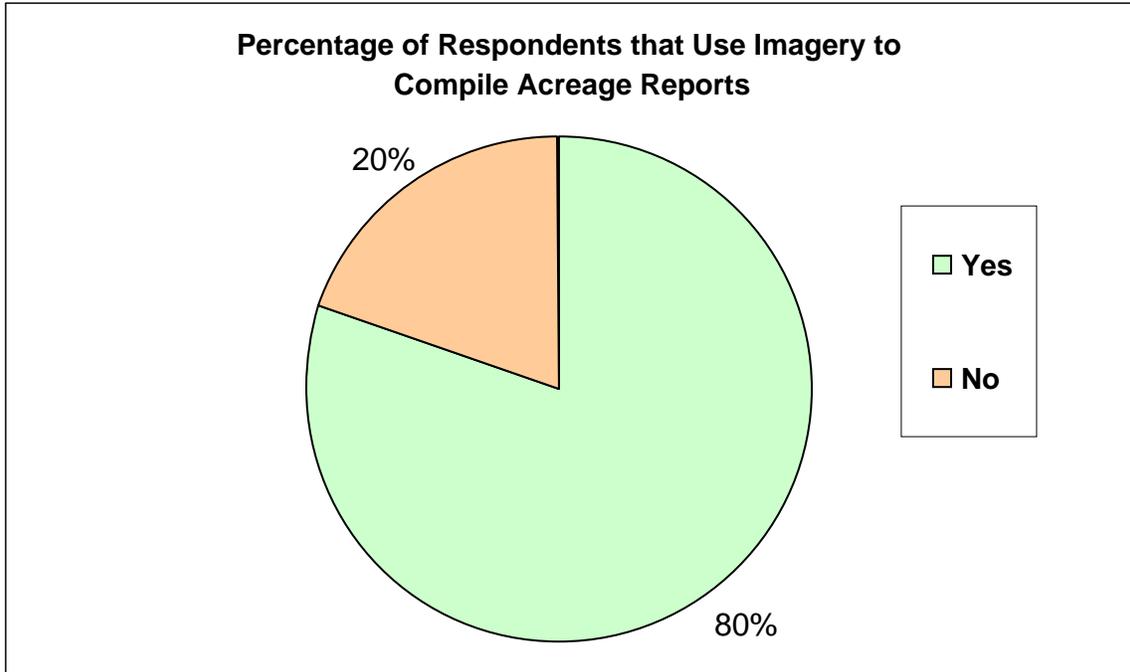


Chart 11 – Question 5

Question 6. Which of the following features need to be clearly recognizable on the imagery for acreage reporting functions? (Select all that apply.)

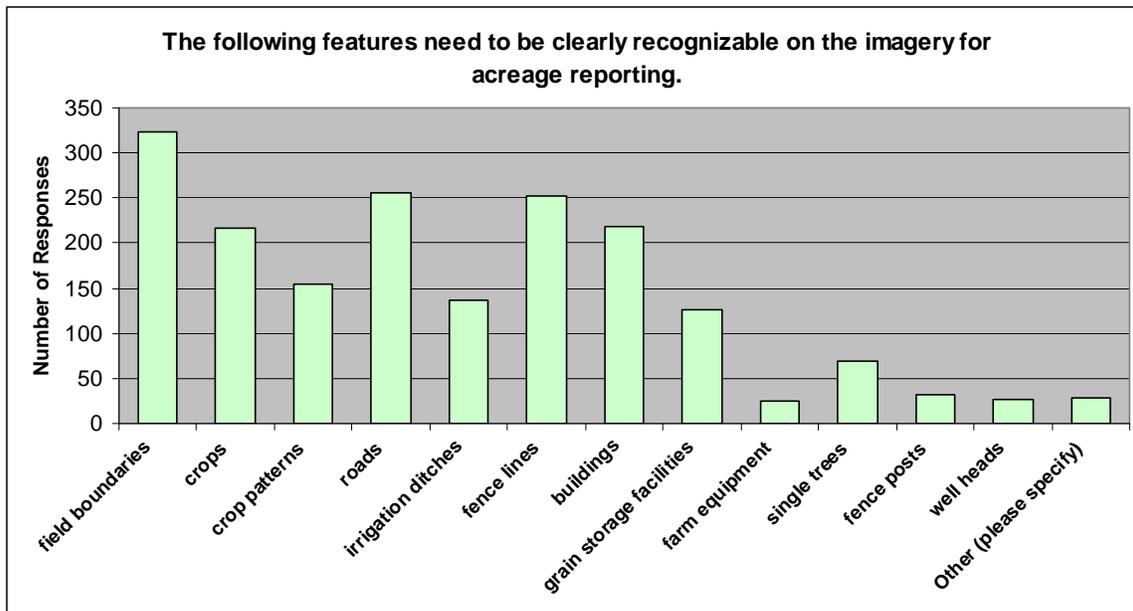


Chart 12 – Question 6

Question 7. What is the smallest object you need to see clearly on the ground for acreage reporting? There were 276 responses to this question, many of which matched answers to the previous question (duplicate answers to question #6 were left out of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 0.1 acre waterways or contour buffer strips
- 1 meter
- 15'X30' area equal to .01 acres, the smallest reportable unit
- 33 ft filter strip, communication tower and guide wires
- barns, sheds, buildings, cattle traps
- buildings - In order to deduct from field acreage accurately
- buildings & small landmarks
- bunches of trees approximately .1 acre in size
- cattle
- clearly defined rows
- clearly identify if there are 5-10 year old trees on the ground
- CRP
- differences in the change of cover
- electric towers
- equipment - anything that is in a field that is not planted
- filter strips and waterways
- fruit and vegetable crops
- ground stake for referencing purposes
- haystack yards
- high bush blueberry bush - 1 meter
- ideally small enough to determine variance in row crops
- irrigation pivots, systems, or wells
- light pole
- mineral locations and lease roads
- narrow filter strip or waterway
- newly planted trees
- oil well tank batteries
- oil/gas well pump jacks
- outbuilding
- pivot centers
- power units or risers
- property line post
- rangeland
- rock pile or water hole
- round bale 5' by 6'
- silage pits, haystacks, irrigation practices
- single trees, fence posts, rocky un-farmable ground
- small bodies of water; ponds and creeks
- small rows of vegetable crops and fruit trees

- stone wall boundaries
- tanks, native pecan trees
- terrace
- the crop itself would be great but just clearly see the crop pattern is sufficient
- tree and vine rows
- turn rows and turn areas
- vegetable plants
- vineyard rows
- wetland
- wind turbine

Question 8. Select a start and end date for acquiring imagery that best meets your requirements for acreage reporting. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

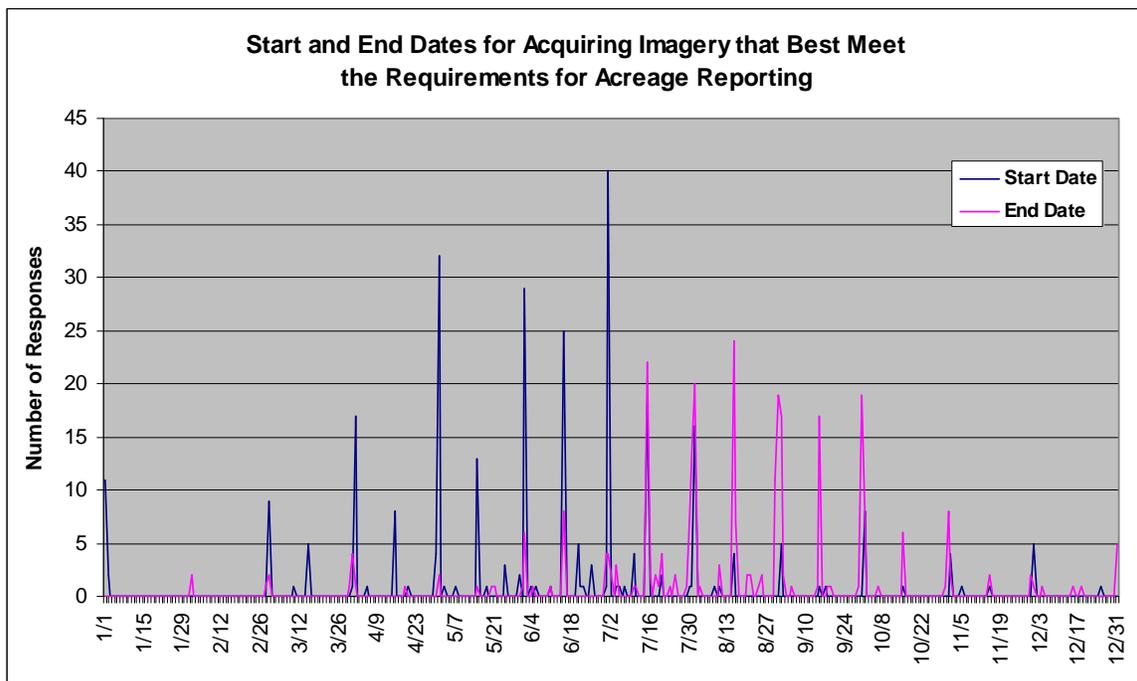


Chart 13 – Question 8

Question 9. Which of the following delivery schedules best meets your requirements for acreage reporting?

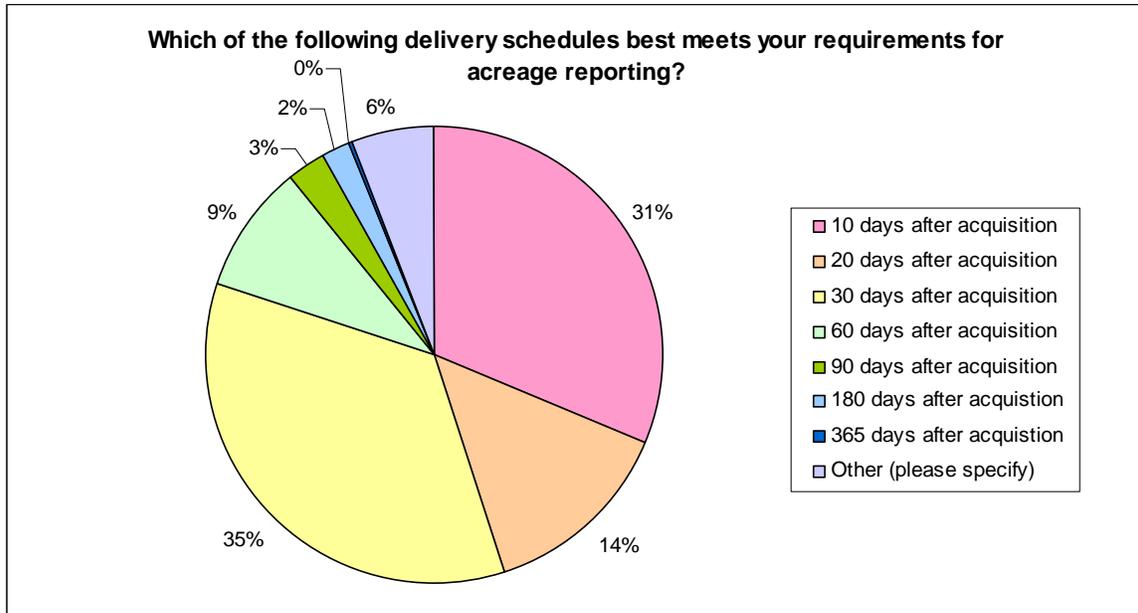


Chart 14 – Question 9

Question 10. How often does imagery need to be updated to best meet your requirements for acreage reporting?

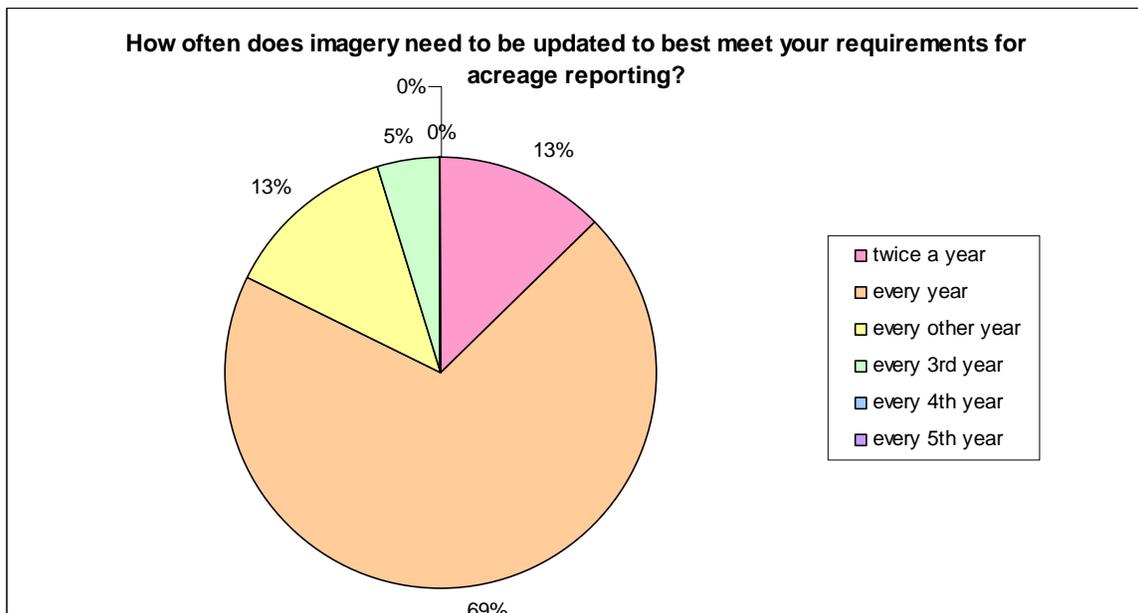


Chart 15 – Question 10

Question 11. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to acreage reporting:

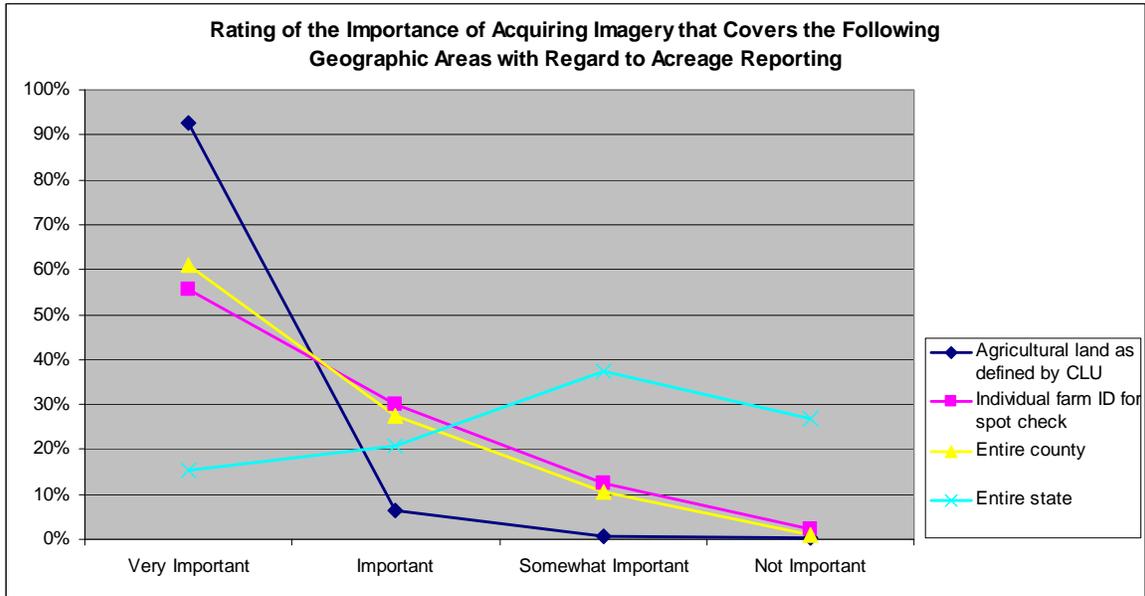


Chart 16 – Question 11

Question 12. Rate the importance of the following as they relate to your imagery requirements for acreage reporting:

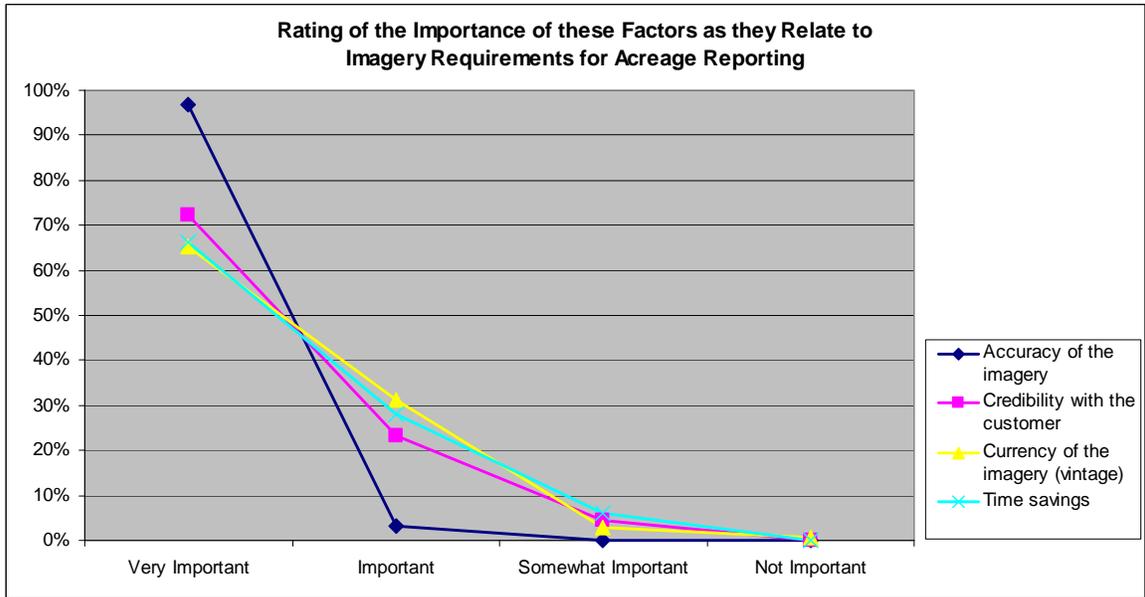


Chart 17 – Question 12

Questions 13 through 20: Boundary Maintenance

Question 13. Do you use imagery for boundary maintenance? This would include CLU maintenance, CRP maintenance, environmental easements, measurement services, and reconstitutions.

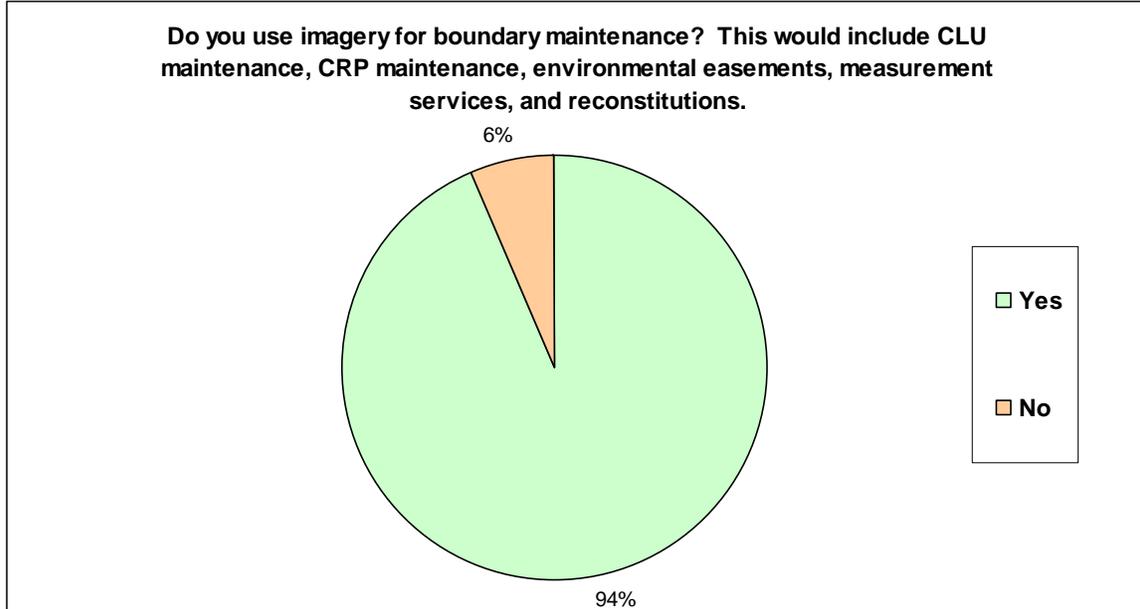


Chart 18 – Question 13

Question 14. Which of the following features need to be clearly recognizable on the imagery for boundary maintenance functions? (Select all that apply.)

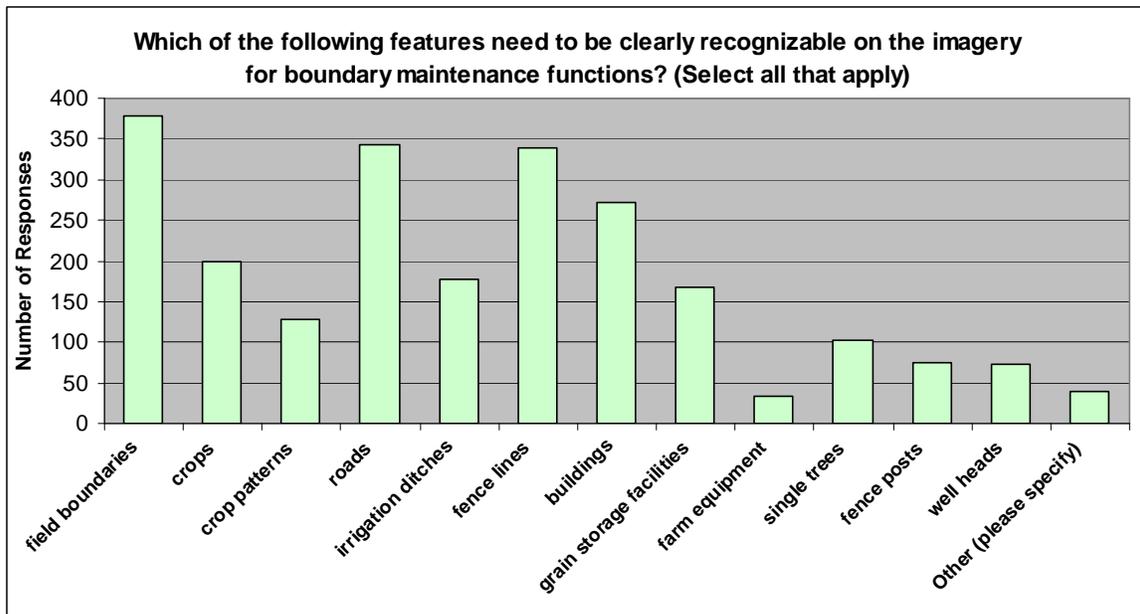


Chart 19 – Question 14

Question 15. What is the smallest object you need to see clearly on the ground for boundary maintenance? There were 305 responses to this question, many of which matched answers to the previous question (duplicate answers to question #14 were left out of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 1 meter
- 10 ft by 10 ft object
- 33 ft wide filter strips
- 5-10 year old trees and brush
- any object greater than .1 acre in size
- approach, fence post, a tree or shrub, etc
- buildings or small lots being used for storing equipment
- buildings, oil well tank batteries
- clear edges of permanent structures and roads
- clumps of trees
- corner post fences
- fence post or boundary marker
- goats
- haystacks
- hedge rows
- irrigation pipes, pivot towers, wheel lines
- light pole
- new ground breakings, movable storage facilities, new construction, fence posts
- oil/gas well pump jacks
- outbuildings and gate entrances
- recently built fence placed on new boundary line
- riser
- row of crops for measurement service
- survey pins
- tank ponds, native pecan trees
- tobacco plants
- vegetable rows and fruit trees, crop practices
- vegetation changes
- very small fields
- vineyard rows
- watering facilities
- water tanks
- waterways, filter strips, conservation practices, driveways
- wetlands or creeks
- young fruit trees

Question 16. Select a start and end date for acquiring imagery that best meets your requirements for boundary maintenance. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

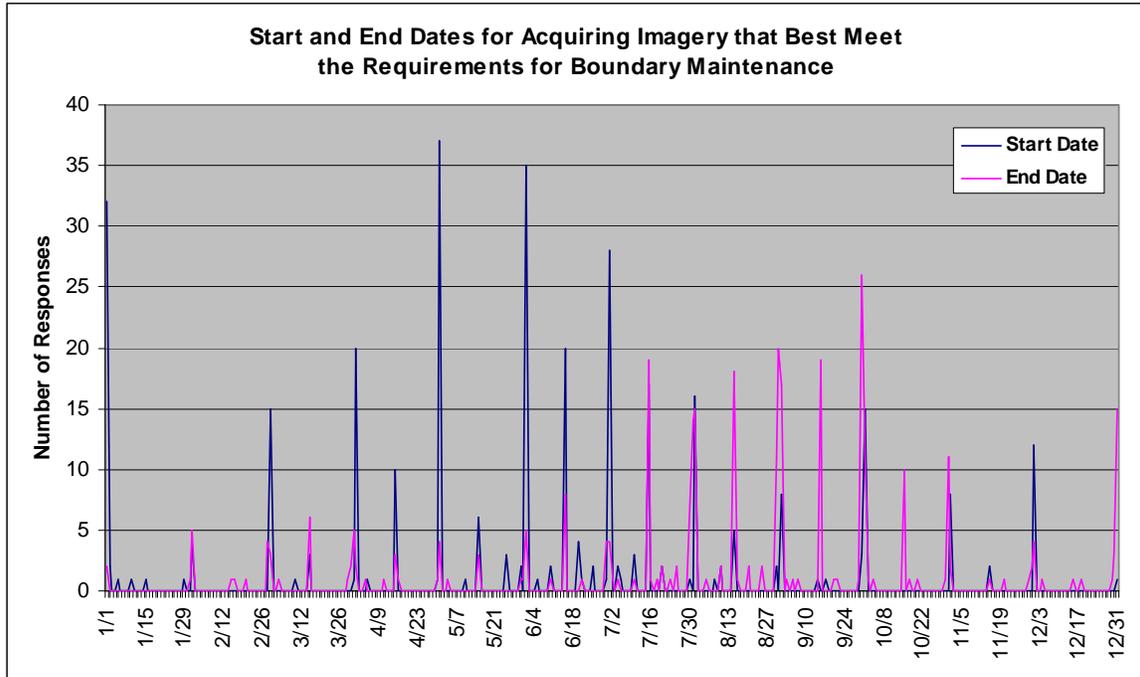


Chart 20 – Question 16

Question 17. Which of the following delivery schedules best meets your requirements for boundary maintenance?

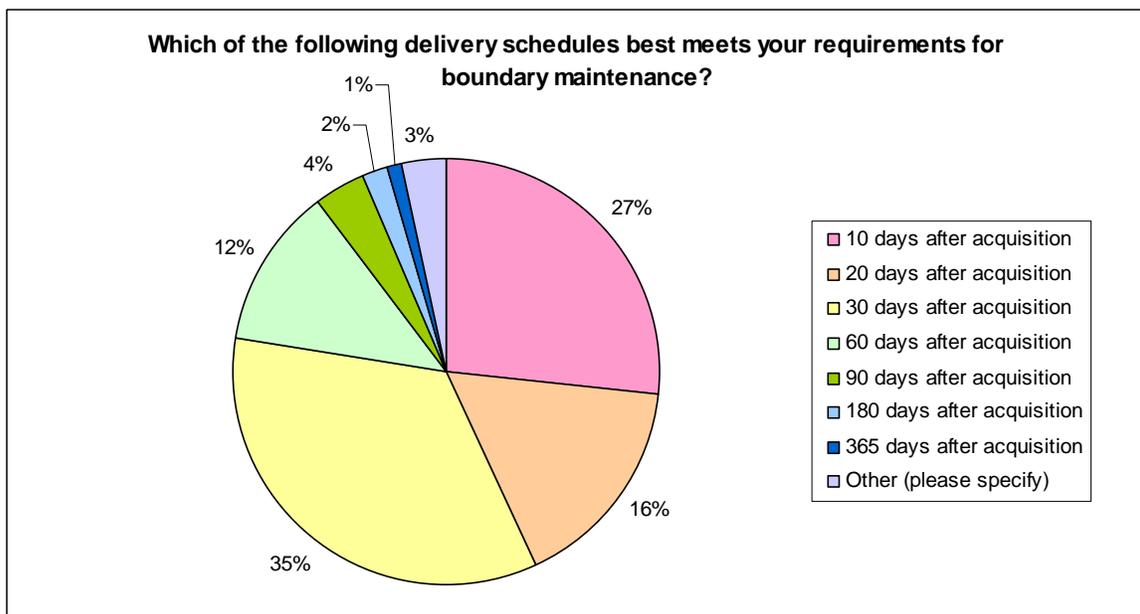


Chart 21 – Question 17

Question 18. How often does imagery need to be updated to best meet your requirements for boundary maintenance?

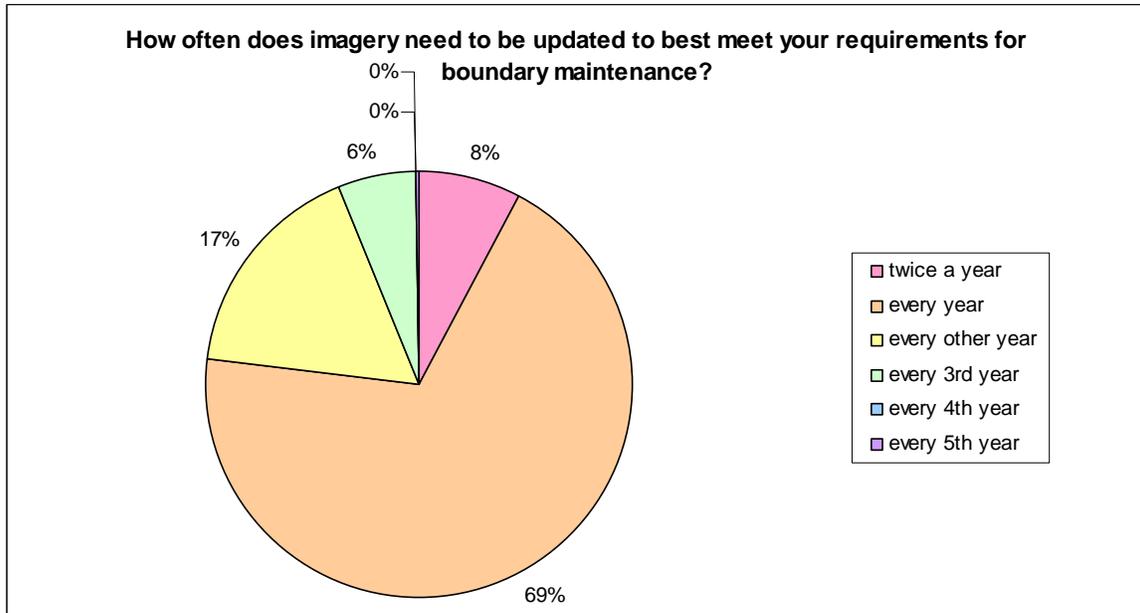


Chart 22 – Question 18

Question 19. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to boundary maintenance:

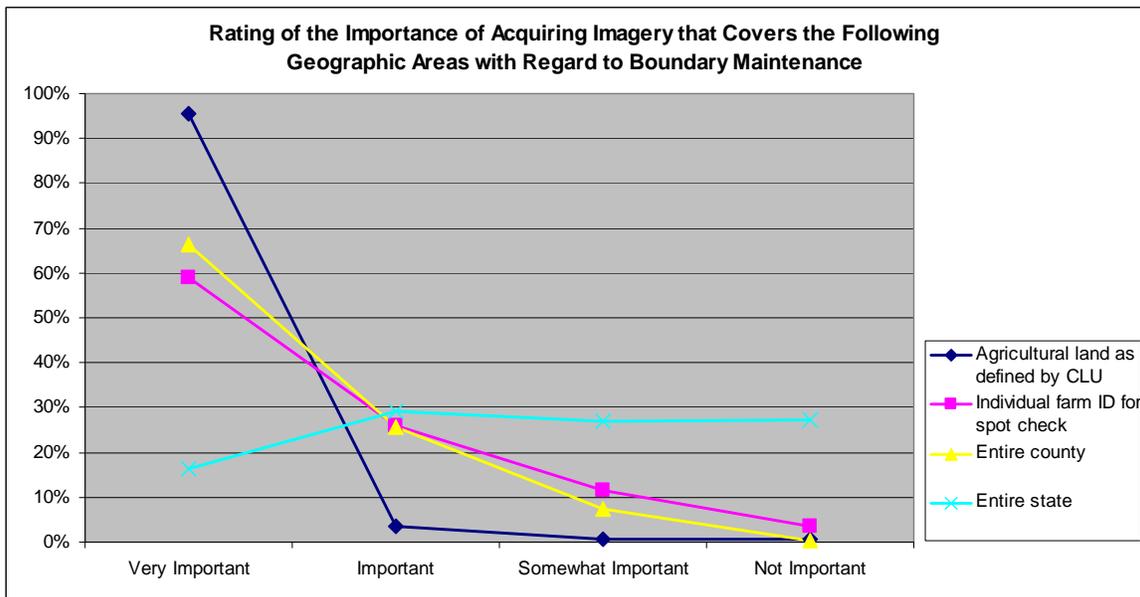


Chart 23 – Question 19

Questions 20. Rate the importance of the following as they relate to your imagery requirements for boundary maintenance:

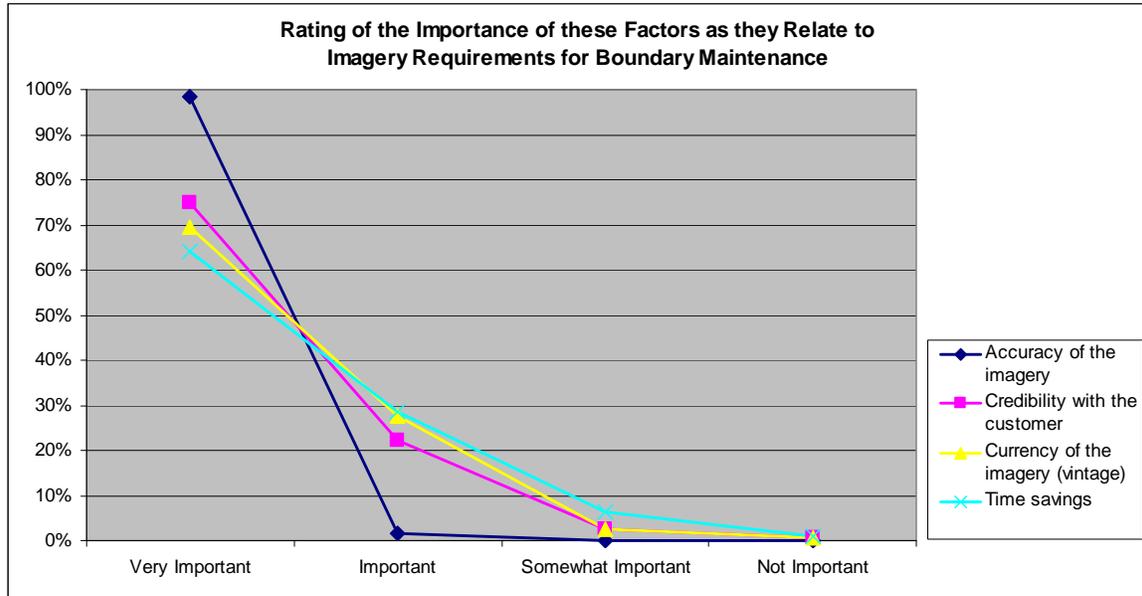


Chart 24 – Question 20

Questions 21 through 28: Program Compliance

Question 21. Do you use imagery for program compliance?

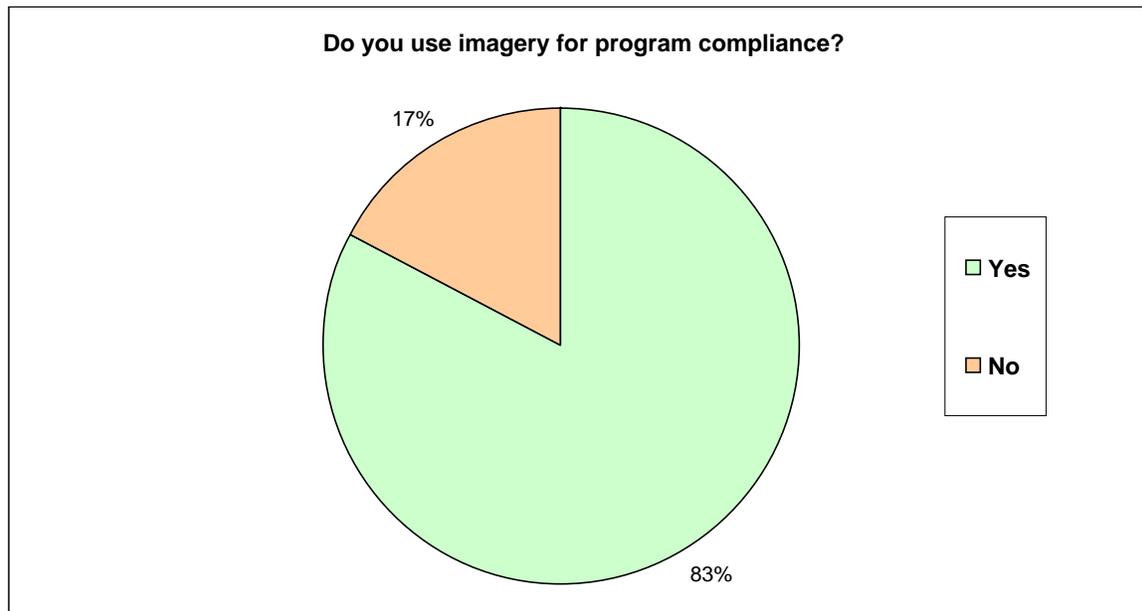


Chart 25 – Question 21

Question 22. Which of the following features need to be clearly recognizable on the imagery for program compliance? (Select all that apply)

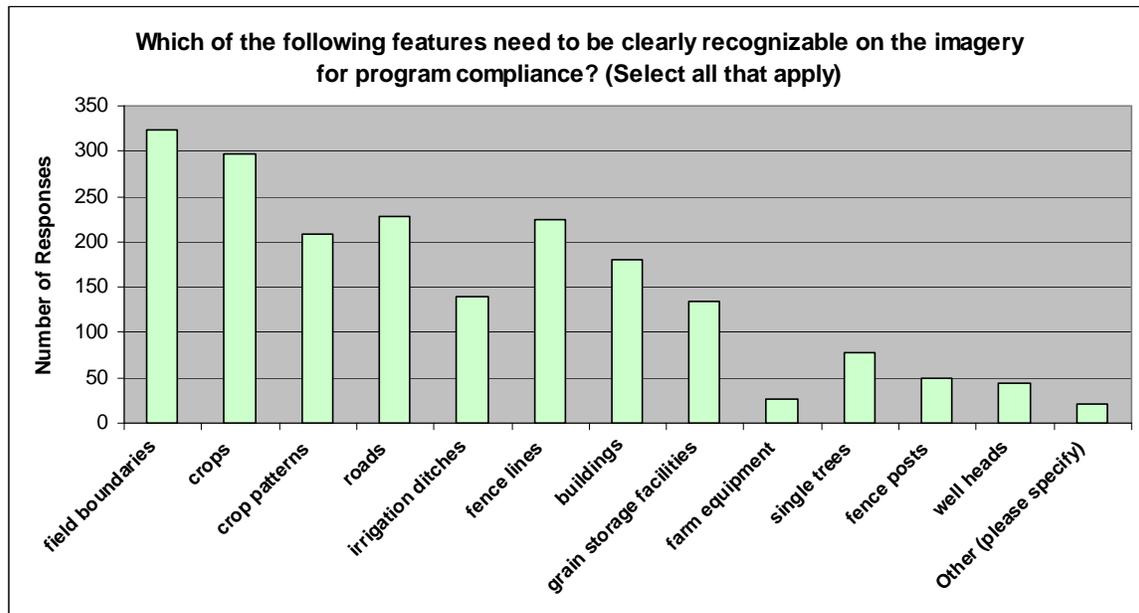


Chart 26 – Question 22

Question 23. What is the smallest object you need to see clearly on the ground for program compliance? There were 268 responses to this question, many of which matched answers to the previous question (duplicate answers to question #22 were left out of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 1 meter
- 10ft x 10ft object
- 15'X30'= .01 acre 1-meter resolution maximum
- 33ft wide filter strips
- animals
- any object greater than .1 acre in size
- clear precise crop boundary
- clearly defined crop rows
- clumps of trees
- crop changes
- crops, hay fields, rangeland
- ditches and paths
- electric towers
- fence posts, storage tanks, environmental concerns
- fruits and vegetables are usually small acreages .01 or less
- haystacks
- high bush blueberry bush - 1 meter
- ideally to be able to determine crop type
- irrigation practice, pipes, lines, irrigation canal gates, wells, etc.

- mowed strips within CRP acreage and noxious trees
- newly constructed buildings
- newly planted trees
- oil/gas well pump jacks
- one year old pine or hardwood trees planted in spring of current year
- outbuildings and gate entrances
- overall weed infestation versus maintain crop
- planting patterns
- plants
- post and power lines
- property line posts
- pump
- rock pile or water hole
- small outbuildings and water bodies
- small strips (30 feet) wide of CRP
- tobacco plants
- trees 5-10 years old and brush
- turn rows
- very small fields
- vineyard rows
- water bodies
- way points, such as a tree, pond, or building
- weeds
- young fruit trees

Question 24. Select a start and end date for acquiring imagery that best meets your requirements for program compliance. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

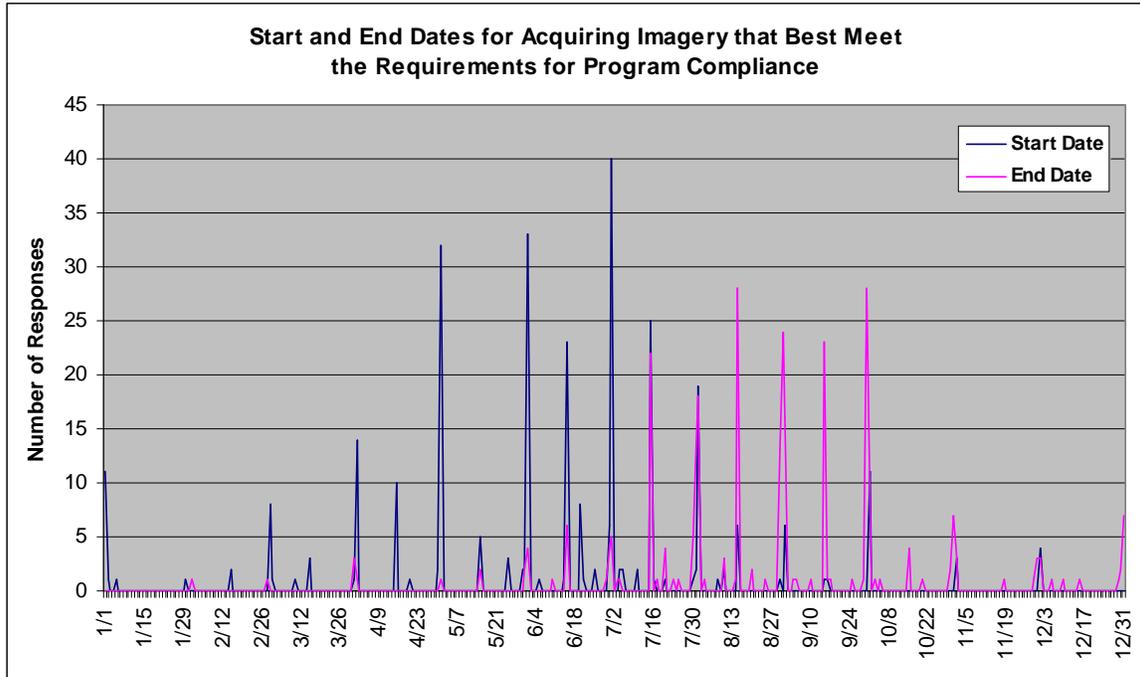


Chart 27 – Question 24

Question 25. Which of the following delivery schedules best meets your requirements for program compliance?

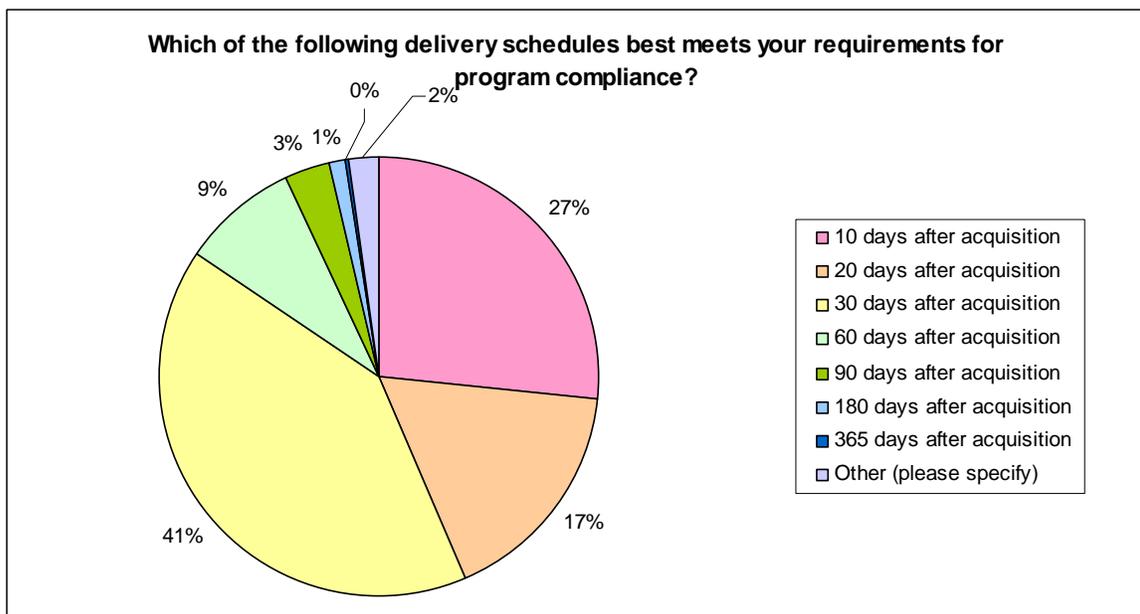


Chart 28 – Question 25

Question 26. How often does imagery need to be updated to best meet your requirements for program compliance?

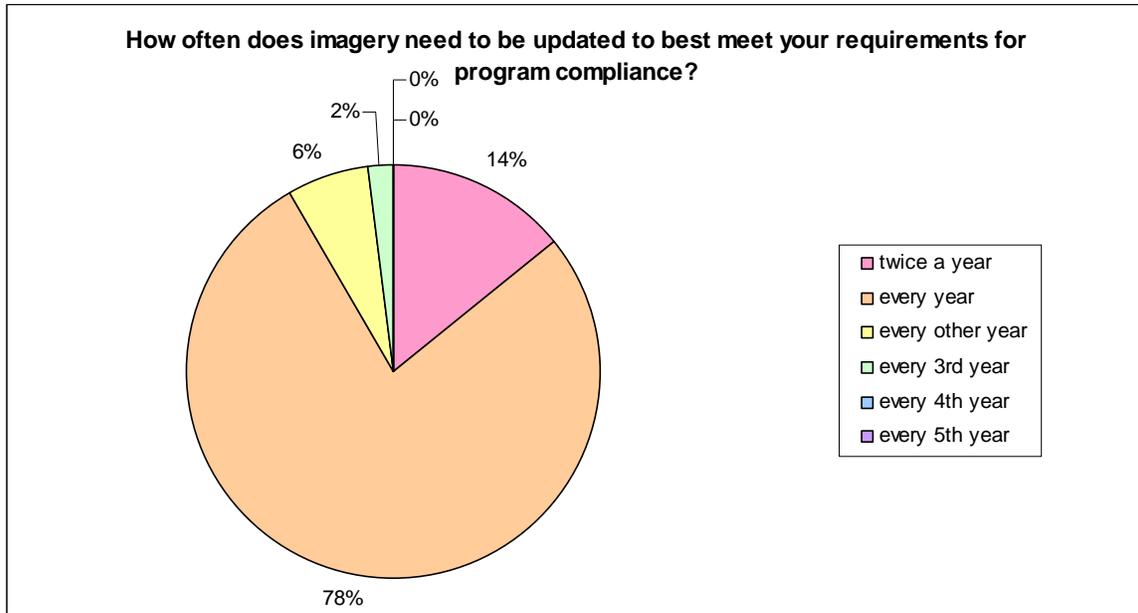


Chart 29 – Question 26

Question 27. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to program compliance:

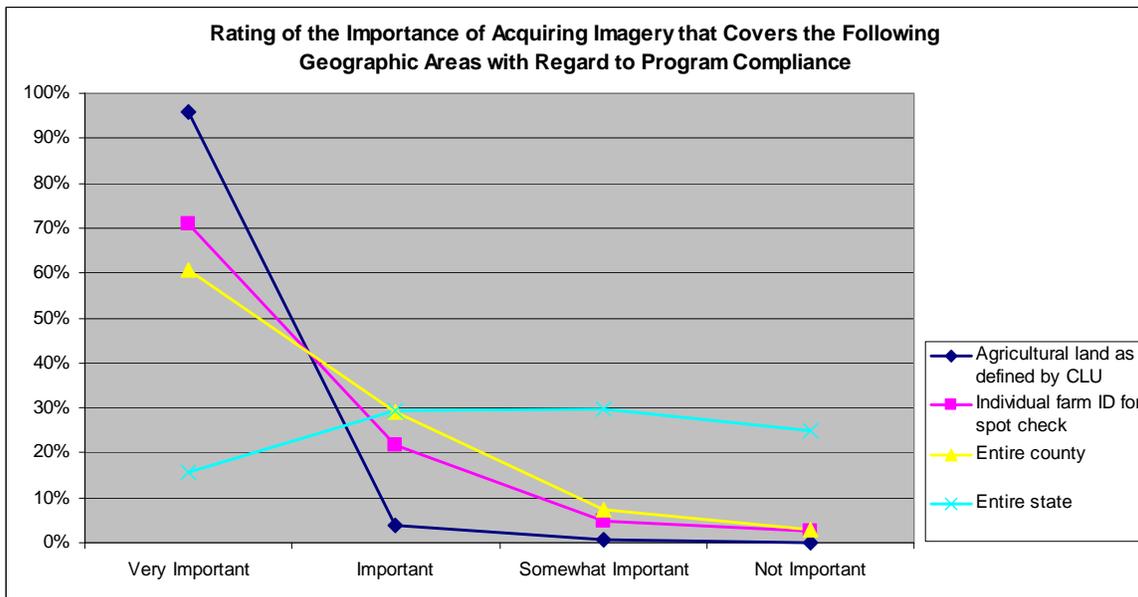


Chart 30 – Question 27

Question 28. Rate the importance of the following as they relate to your imagery requirements for program compliance:

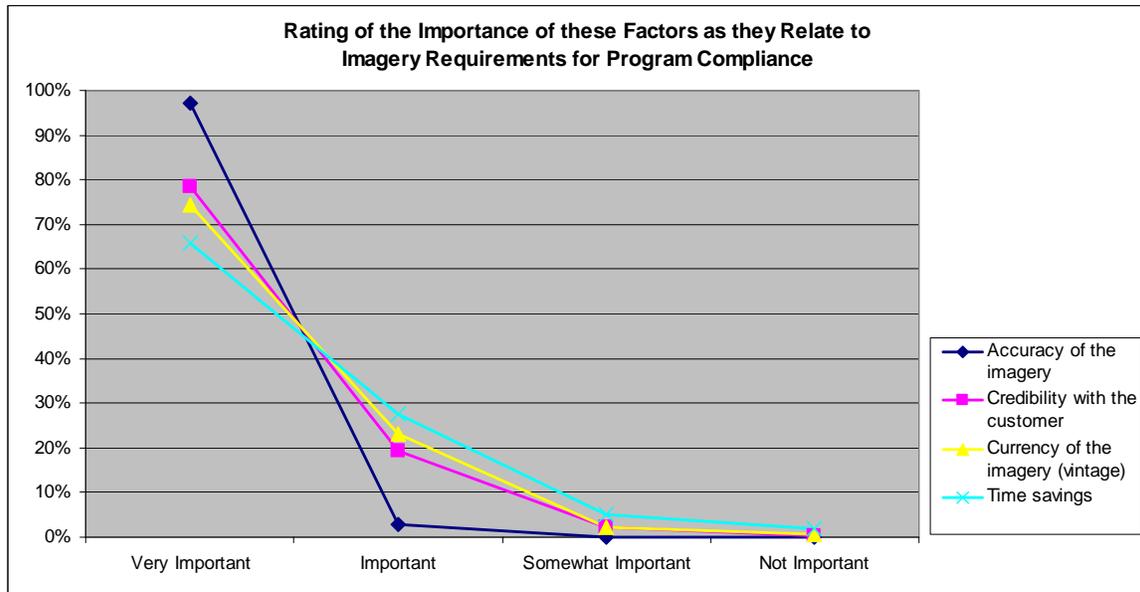


Chart 31 – Question 28

Questions 29 through 36: Site Inventory Analysis

Question 29. Do you use imagery for site inventory analysis? This would include the following programs: Food, Feed and Seed Facilities, Grain Bin Tool, and Farm Facility Loans.

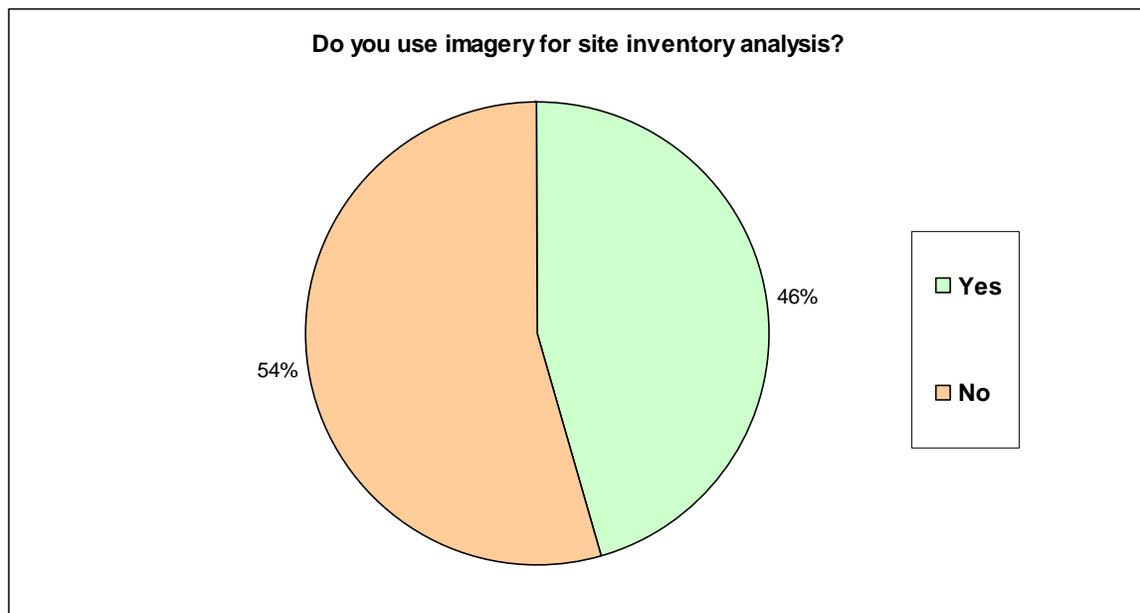


Chart 32 – Question 29

Question 30. Which of the following features need to be clearly recognizable on the imagery for site inventory analysis? (Select all that apply)

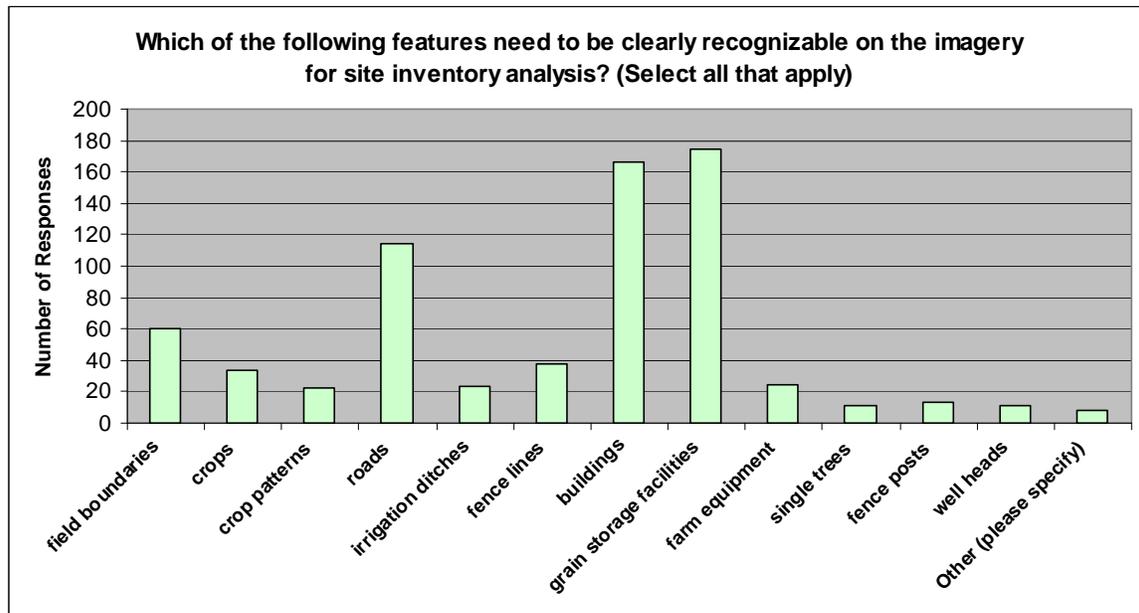


Chart 33 – Question 30

Question 31. What is the smallest object you need to see clearly on the ground for site inventory analysis? There were 158 responses to this question, many of which matched answers to the previous question (duplicate answers to question #30 were left out of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 0.1 acres
- 10 foot circle
- 15, 18, and 24 ft diameter grain dryer or bin
- auger and liquid storage tanks- cement commodity storage structure
- auger, grain leg, dump pit, well, electric utility pole
- clearly defined crop rows
- corners of crops
- fertilizer storage facilities
- fuel stations
- grain dryer
- outbuildings
- small grain bins
- small outbuildings; small ponds
- street name identifications, intersections, business signs
- tank
- very small fields
- well heads, cattle troughs, trees seedlings

Question 32. Select a start and end date for acquiring imagery that best meets your requirements for site inventory analysis. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

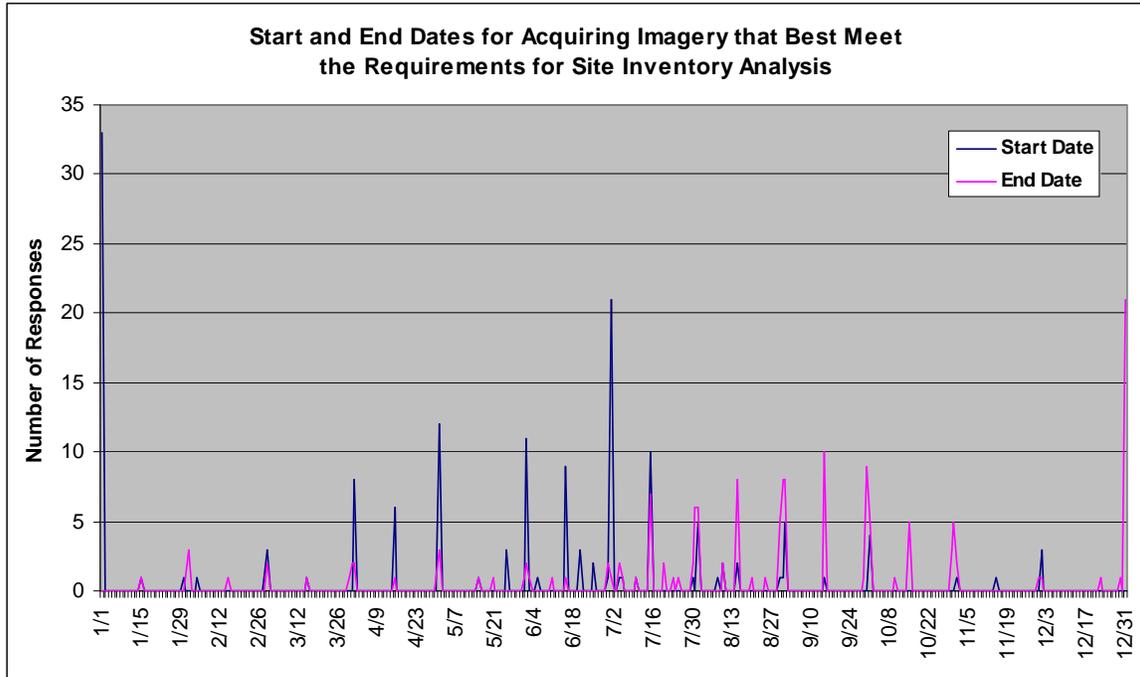


Chart 34 – Question 32

Question 33. Which of the following delivery schedules best meets your requirements for site inventory analysis?

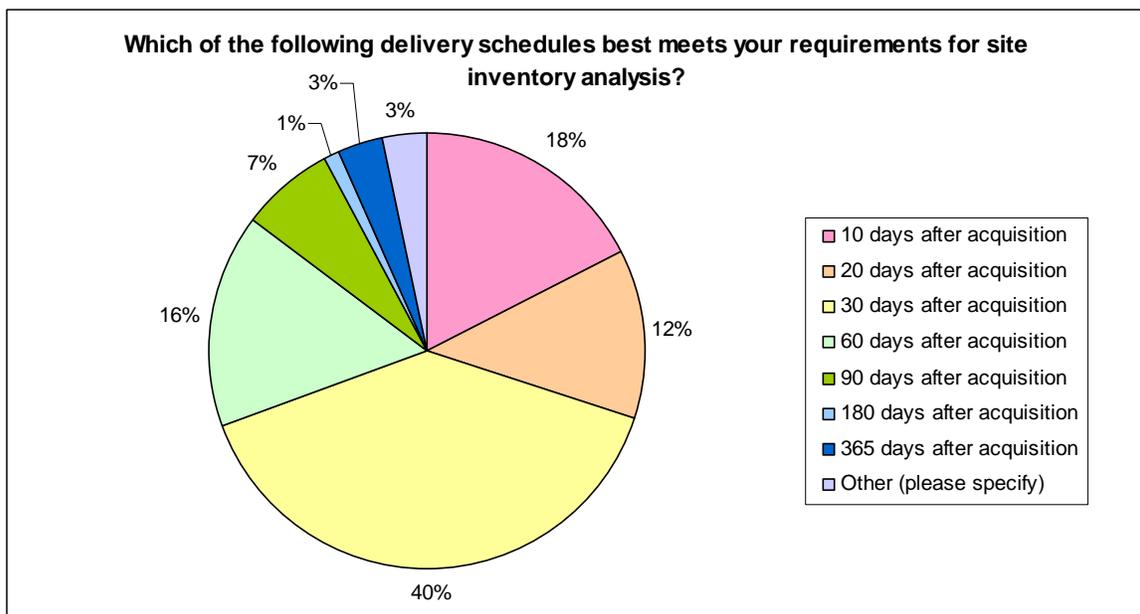


Chart 35 – Question 33

Question 34. How often does imagery need to be updated to best meet your requirements for site inventory analysis?

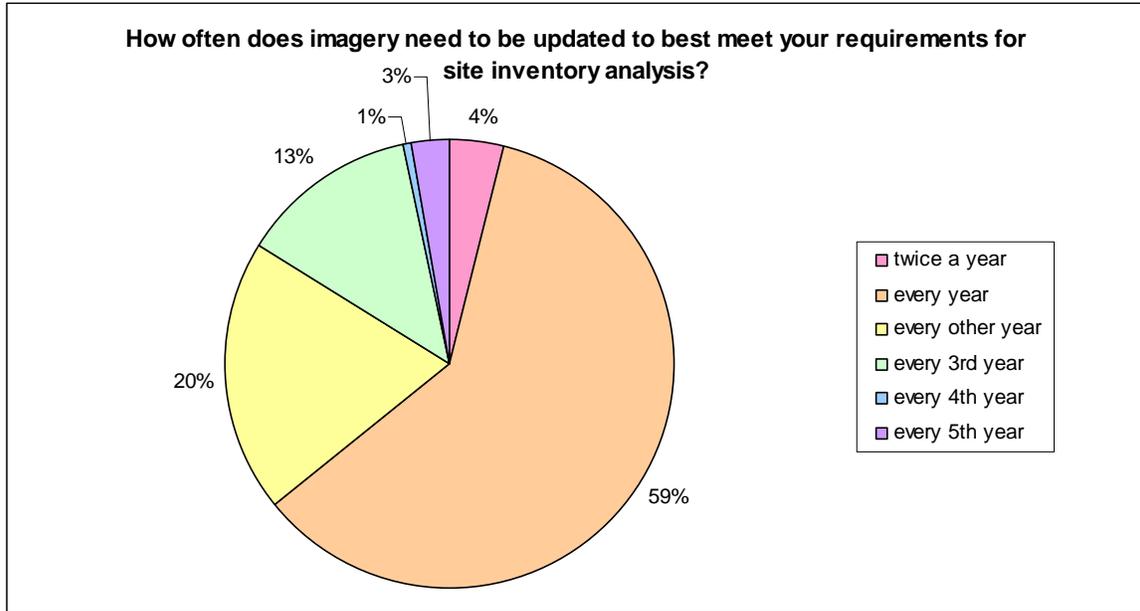


Chart 36 – Question 34

Question 35. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to site inventory analysis:

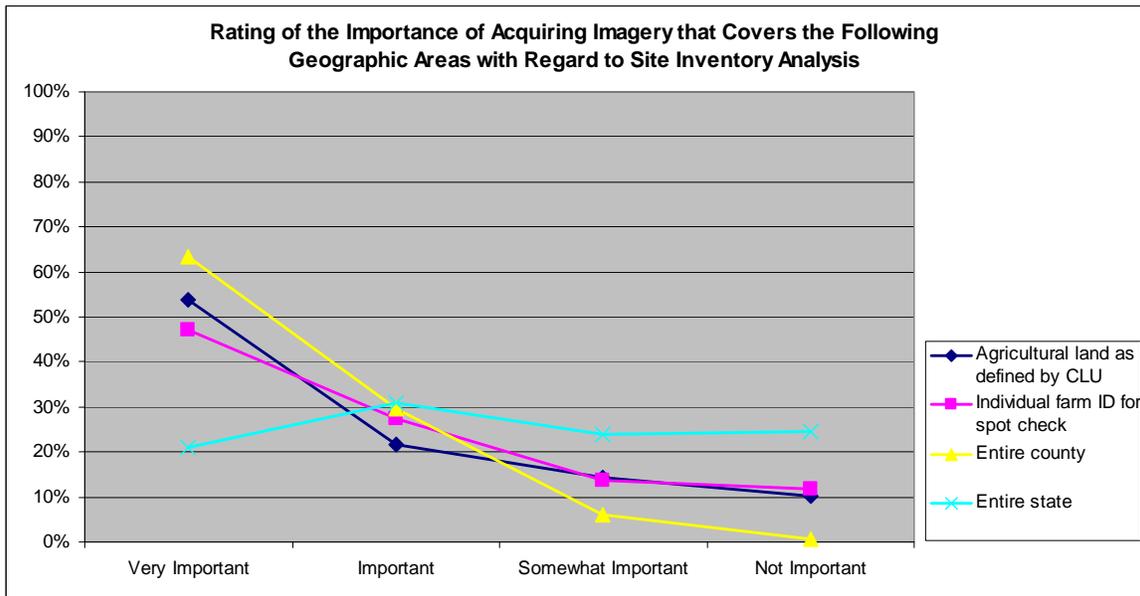


Chart 37 – Question 35

Question 36. Rate the importance of the following as they relate to your imagery requirements for site inventory analysis:

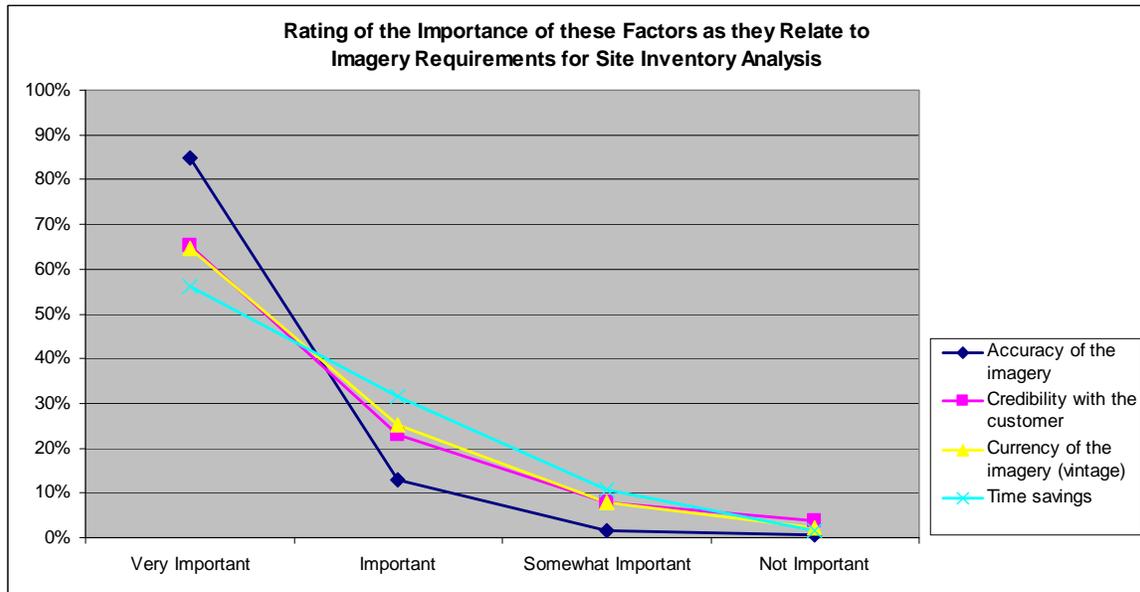


Chart 38 – Question 36

Questions 37 through 44: Disaster Program Administration / Emergency Planning and Response

Question 37. Do you use imagery for disaster / emergency management?

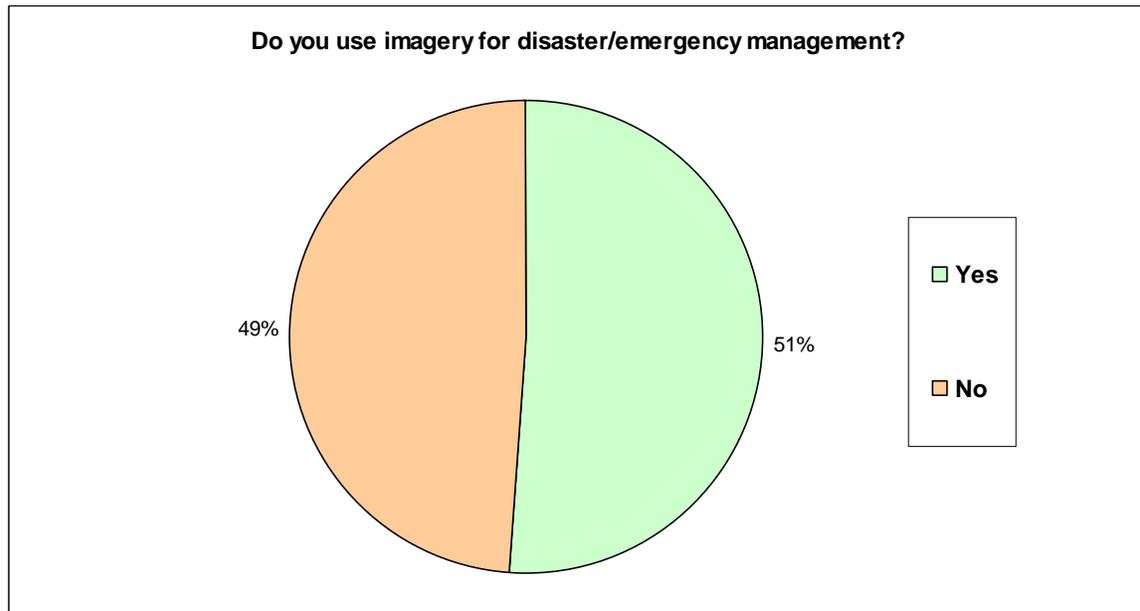


Chart 39 – Question 37

Question 38. Which of the following features need to be clearly recognizable on the imagery for disaster / emergency management? (Select all that apply)

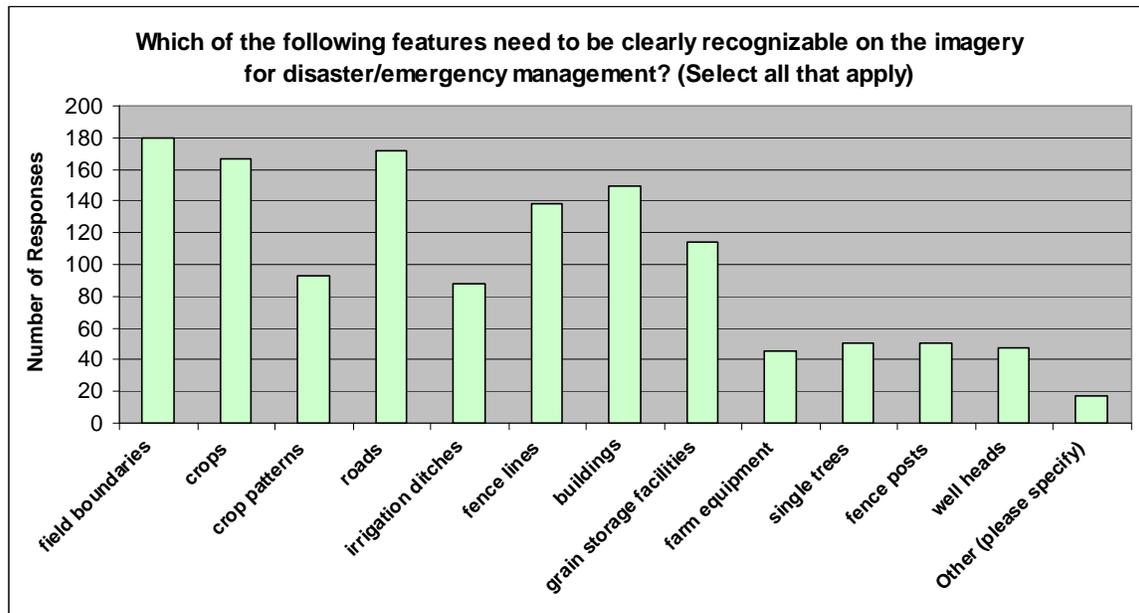


Chart 40 – Question 38

Question 39. What is the smallest object you need to see clearly on the ground for disaster / emergency management? There were 161 responses to this question, many of which matched answers to the previous question (duplicate answers to question #38 were left out of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 0.1 acre increments
- 1 ft resolution
- 10ft * 10ft
- animals
- cattle/calves for LCP, LIP, etc.
- clearly defined crop rows
- corner fence posts
- creeks and streams
- crop types
- cropping plots less than .5 acres.
- crops to determine damage
- damage patterns - not very small
- ditches and paths
- fence damage
- fence lines, ponds, holding pens
- haystacks
- high bush blueberry plant - 1 meter
- outbuildings and gate entrances

- pens
- pivots
- ponds
- rock piles or water holes
- small building, fence row
- small outbuildings, small ponds
- small trees and debris from buildings and sheds
- washouts in fields
- water sources, wells
- watering facility
- young fruit trees

Question 40. Select a start and end date for acquiring imagery that best meets your requirements for disaster / emergency management. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

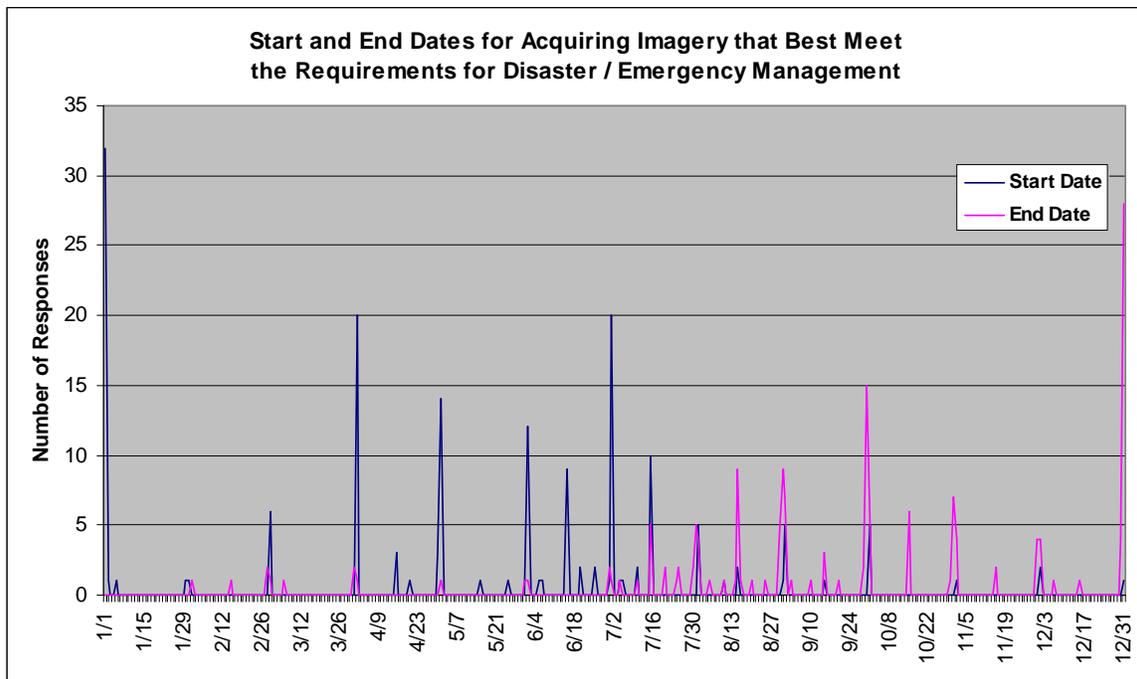


Chart 41 – Question 40

Question 41. Which of the following delivery schedules best meets your requirements for disaster / emergency management?

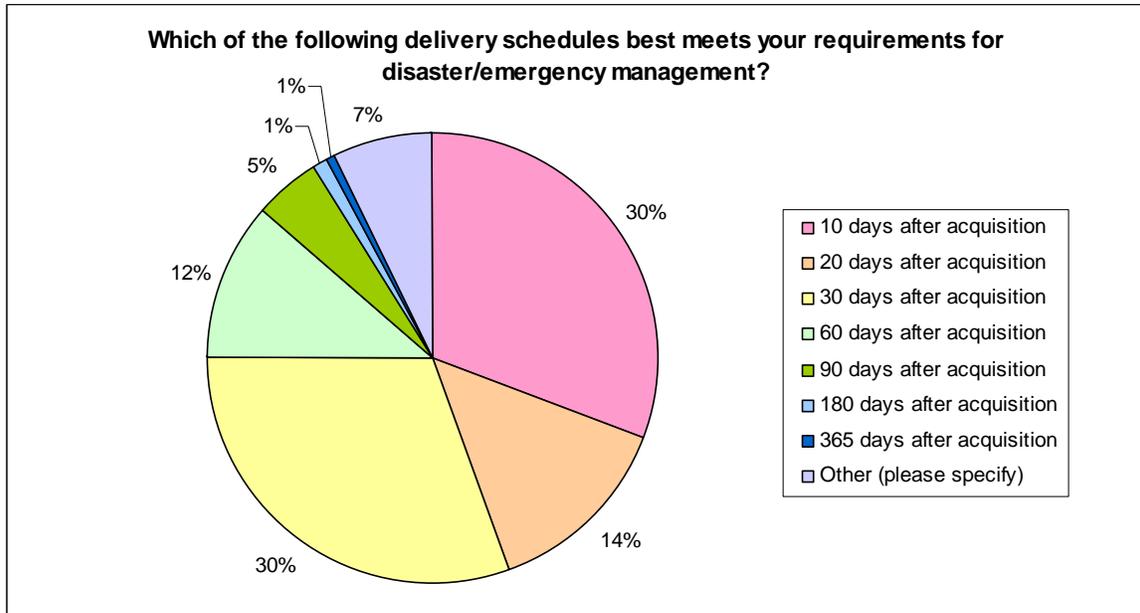


Chart 42 – Question 41

Question 42. How often does imagery need to be updated to best meet your requirements for disaster / emergency management?

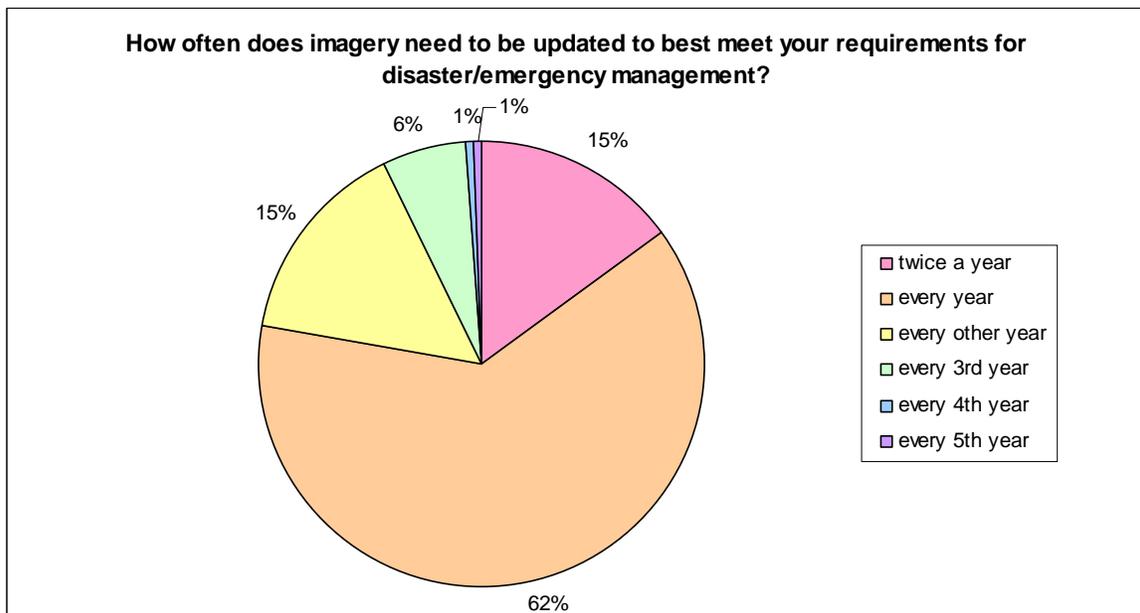


Chart 43 – Question 42

Question 43. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to disaster / emergency management:

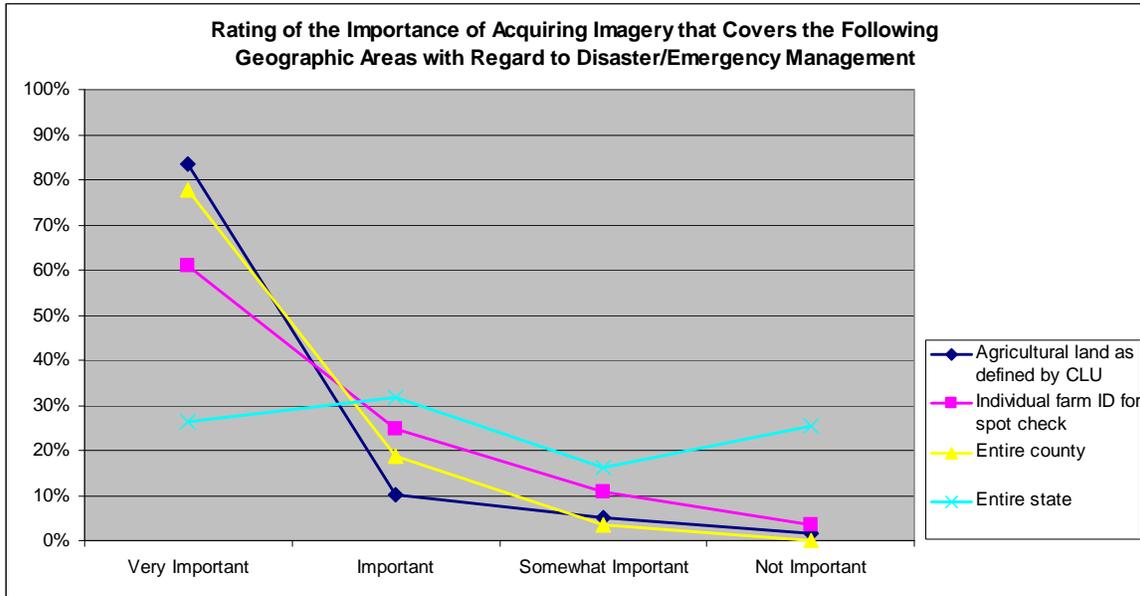


Chart 44 – Question 43

Question 44. Rate the importance of the following as they relate to your imagery requirements for disaster / emergency management:

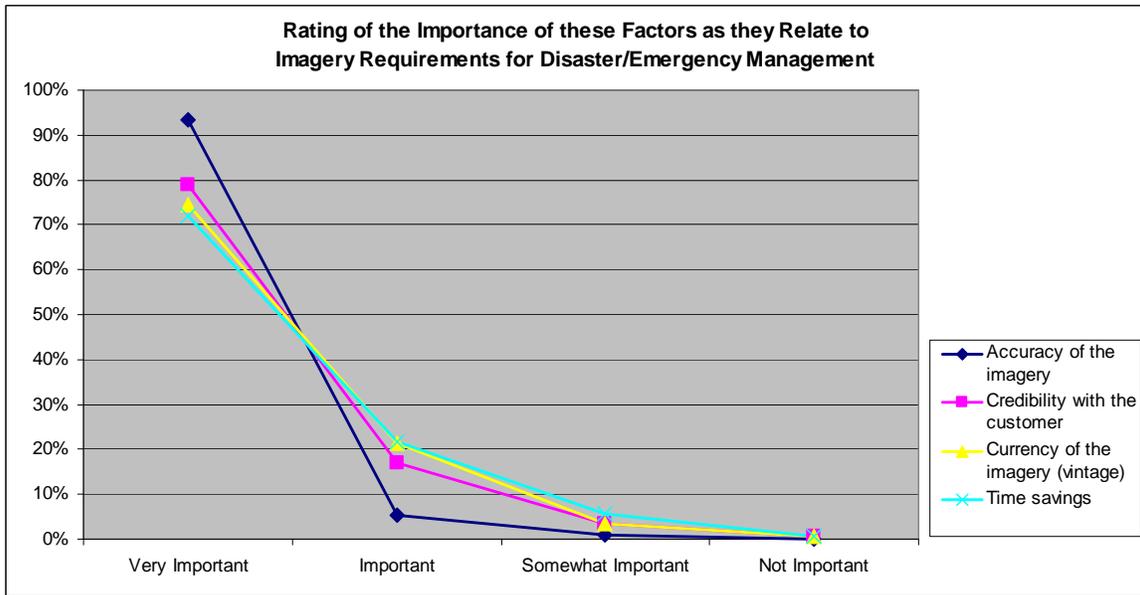


Chart 45 – Question 44

Questions 45 through 52: Farm Loan Programs

Question 45. Do you use imagery for farm loan program activities?

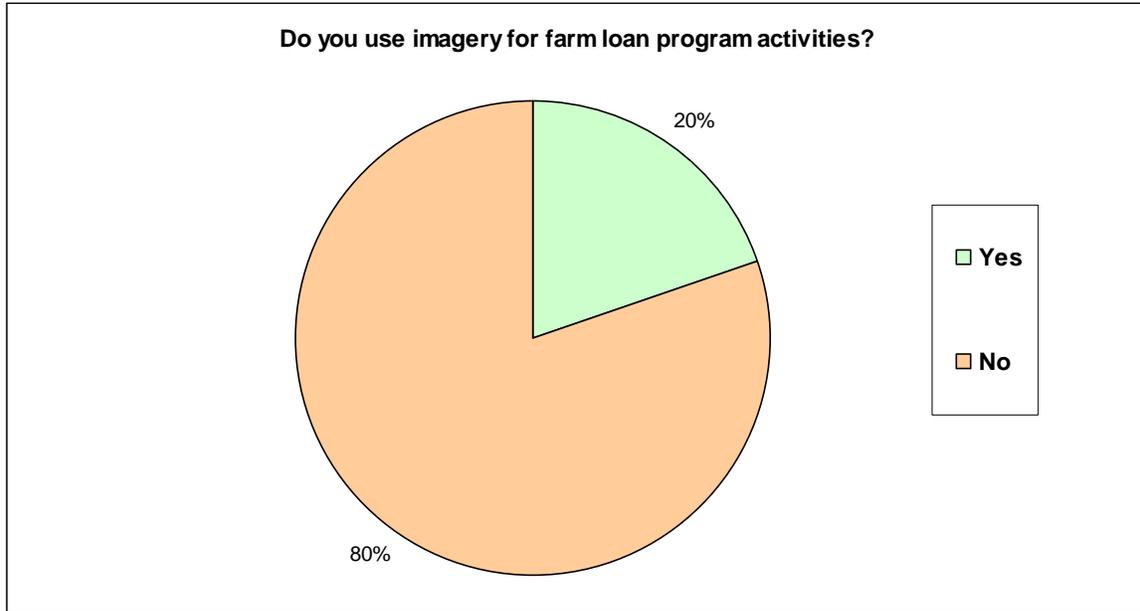


Chart 46 – Question 45

Question 46. Which of the following features need to be clearly recognizable on the imagery for farm loan program activities? (Select all that apply)

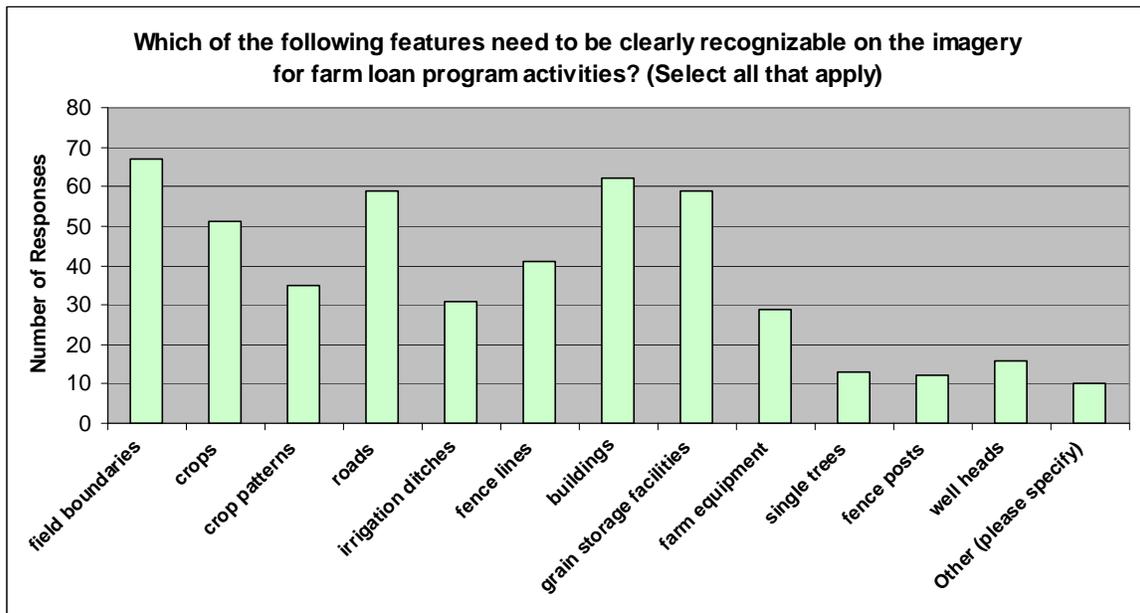


Chart 47 – Question 46

Question 47. What is the smallest object you need to see clearly on the ground for farm loan program activities? There were 59 responses to this question, many of which matched answers to the previous question (duplicate answers to question #46 were left out

of the list below). The following is a summary of open ended responses to this question pulled directly from the survey. All of the responses can be viewed in the summary table.

- 0.1 acres
- 10x10
- above ground storage tanks, tire piles, etc.
- aquatic plants
- building site
- farmstead and field boundaries
- individual tree and vine rows
- planting pattern
- small bins (1000 bushel capacity)
- small farm equipment, livestock
- small outbuildings, small ponds
- tires, debris, fence lines corrals
- tractor
- well head ~8" diameter

Question 48. Select a start and end date for acquiring imagery that best meets your requirements for farm loan program activities. The chart below depicts the answers to this question graphically by identifying the ideal flying season start and end date responses. Spikes may be attributed to the selection of first, last, and middle days of the month more often than other dates.

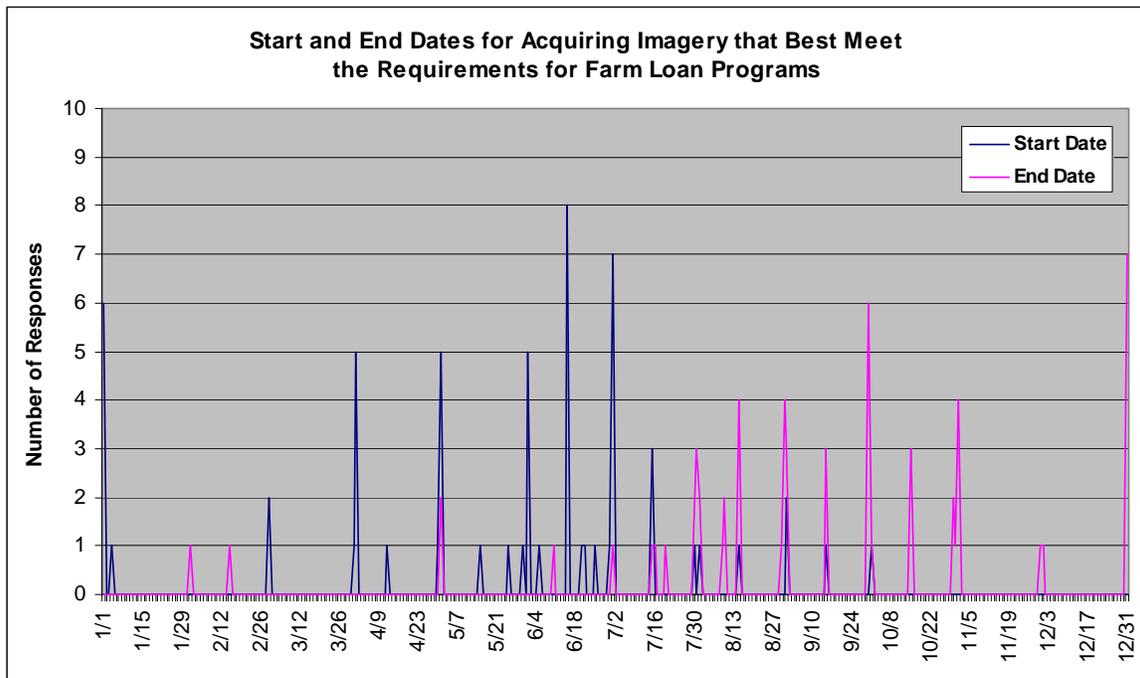


Chart 48 – Question 48

Question 49. Which of the following delivery schedules best meets your requirements for farm loan program activities?

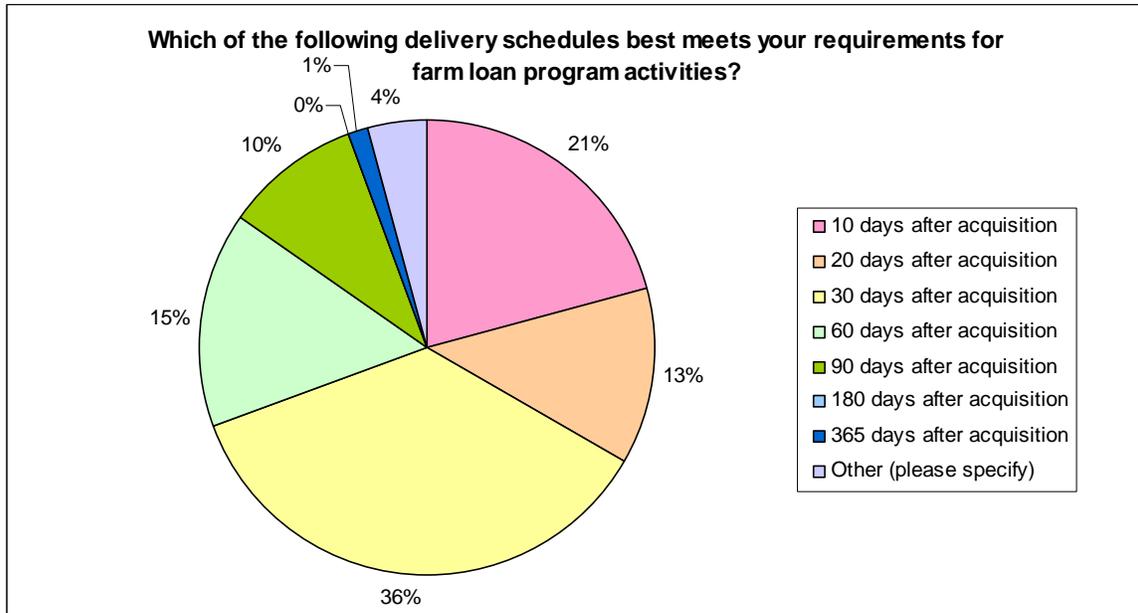


Chart 49 – Question 49

Question 50. How often does imagery need to be updated to best meet your requirements for farm loan program activities?

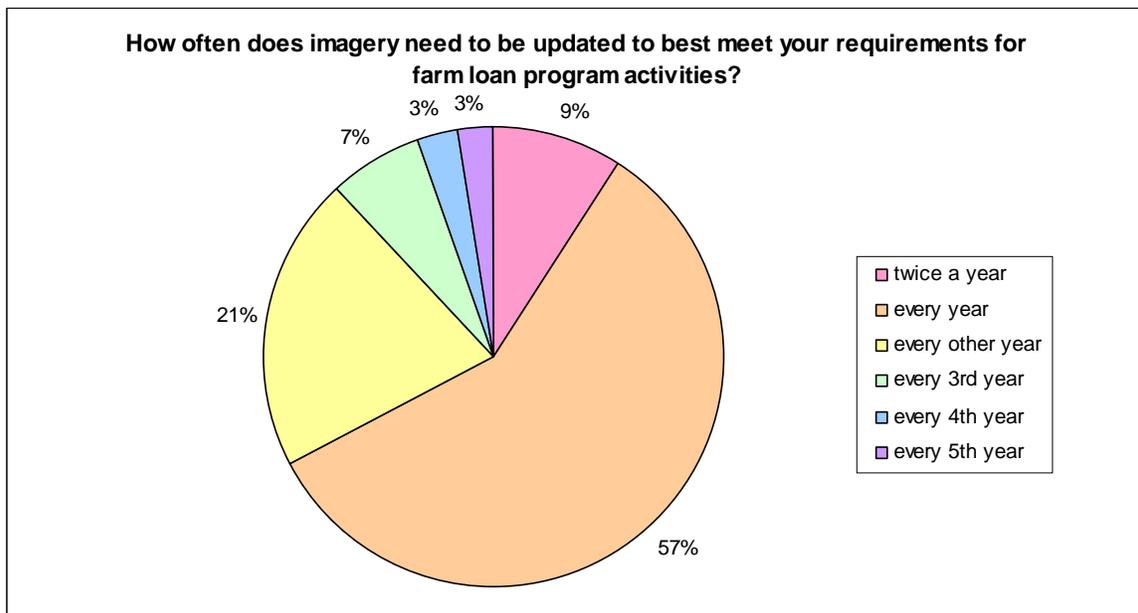


Chart 50 – Question 50

Question 51. Rate the importance of acquiring imagery that covers each of the following geographic areas with regard to farm loan program activities:

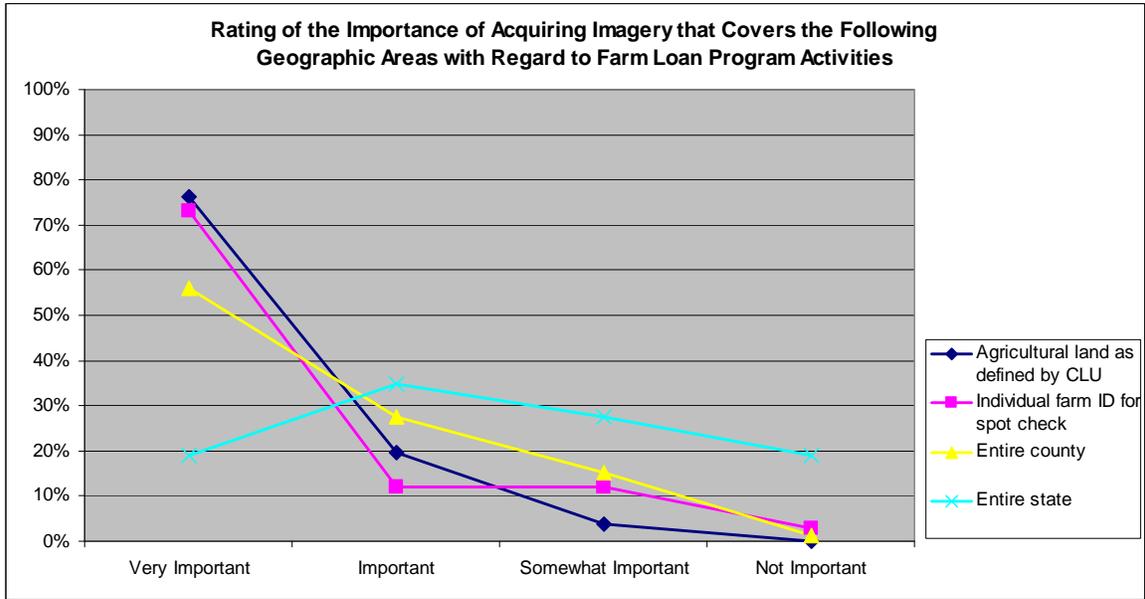


Chart 51 – Question 51

Question 52. Rate the importance of the following as they relate to your imagery requirements for farm loan program activities:

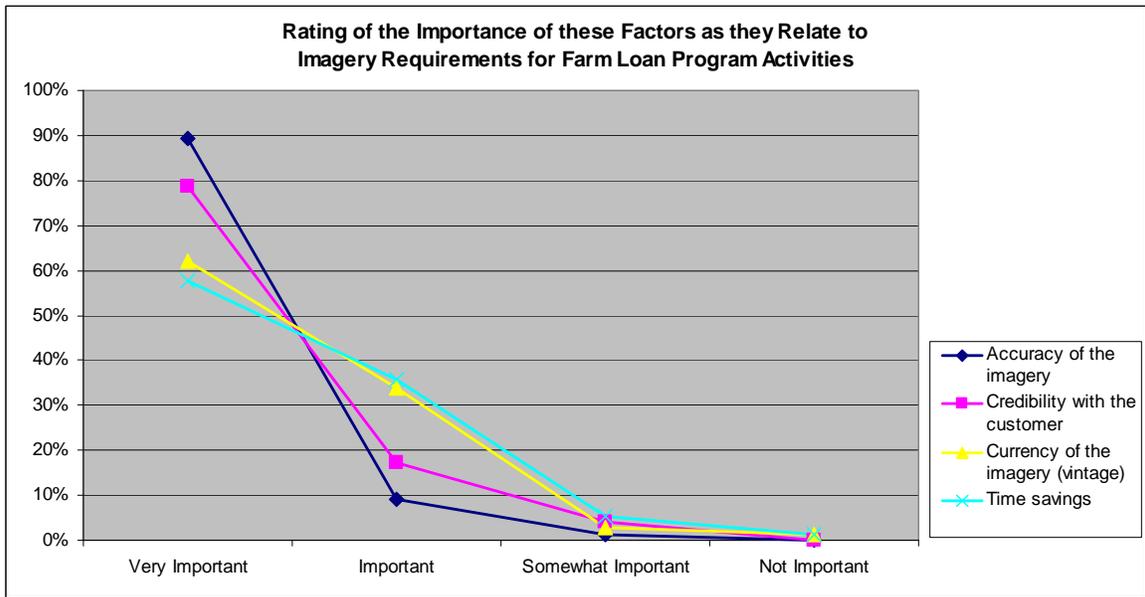


Chart 52 – Question 52

Question 53. Is there anything else you would like to add to the survey regarding your imagery requirements? There were 101 responses to this question. A summary of open ended responses to this question can be found in Appendix A.

Appendix A – Comments Regarding Imagery Requirements

Question 53 of the Imagery Requirements Survey asked if there is anything else customers would like to add to the survey regarding imagery requirements? Open ended responses varied greatly, but general trends noted the following:

- Majority of respondents would like to see annual delivery of imagery
- Some respondents would like to see increased resolution

The following are the actual responses taken from the survey. Only grammatical errors have been corrected:

- Important to have imagery annually for Land Use reporting and maintenance. If you have it then everything else such as farm loans, disasters, etc fall into place. We can always debate timing of flight and delivery but the key is getting it annually.
- Imagery is used for checking CREP compliance regarding irrigation being used or not. This also is a program compliance need.
- The 2008 imagery we received earlier this fall is great, good contrast, good quality-allows us to zoom in pretty close. Thanks
- The imagery is such a huge asset in administering and maintaining the integrity of the farm program. House sites are clearly defined and we don't have to worry if payments are made on ground that does not meet the definition of cropland. I can't stress enough how much we rely on it every day!
- It would be good to have current imagery for the crops we are certifying (i.e. December-April imagery for wheat certification).
- It would be nice if we had new aerial maps each year.
- More funding and time could be used for current imagery and GIS in general. This is important for the integrity and administration of FSA and NRCS programs.
- Due to Gilliam-Wheeler having Summer Fallow crop rotations, imagery every year will benefit agencies as farms would be cropped differently between even and odd years.
- imagery would be used if it was current, or just a few years old,
- I was wondering if Google's new imagery would be sufficient because it is a lot better than what some states would be purchasing and using including New Mexico's not so stellar imagery.
- Imagery is VERY important to administer the programs that FSA has to offer. Land is daily being sold off or converted to non ag. Producers do not always tell us about these changes. It is up to us to recognize the changes and to get timely changed as to not effect their payments much. Many times we find a house only years later that the producer has received DCP money on because they forgot to tell us. Without yearly imagery we can go several years and not note the changes. It is costly to send a reporter out to find and document the changes. Much easier to make changes on ArcGIS when we find if the imagery is accurate. The old yearly slides were nice to document crop patterns, changes etc. Yearly imagery would be nice to do the same, just a click and we can trace the prior years.

- I feel that having new imagery yearly would be very helpful and provide us with the capabilities to better serve the American farmer.
- Receiving entire County is important to us. Leaving areas in the County that does not have imagery creates problems when it's needed for grazing lands and NAP reports.
- If we could order satellite for specific disaster incidents or farm spot checks that would be current within 10 days and acreage adjusted to previous imagery (like we used to do for slides to paper photography) it would be very helpful for disasters, compliance spot checks, RMA acreage cross verification, prevented planting/destroyed acreages, etc.
- The Aerial Photos for Compliance purposes would be great if we could get that imagery 5-6 times a year.
- It helps in getting current cropland acreages for farms with pasture and woods with modified changes that have occurred over the years from adding ponds to building homes even land sales that are not reported to the county office.
- Keep the program consistently funded, it provides credibility to potential partners! Also, it would be helpful for the cost-share to reflect our actual cropland requirements rather than based on the last 2 meter flight which did not include several of our CROPLAND counties. Other than those items, the overall response to NAIP has been good. Thank you APFO for providing this service to us!
- Make sure that resources are provided to the GIS teams and the imagery to enable use and accuracy.
- Imagery needs to be clear, more complete, and updated more often.
- Keep the software for GIS is compatible to GPS.
- The last imagery I received in Yadkin County was very poor. Some of it was very good and some was so grainy and blurred that we could not tell the difference between a bare field with nothing growing and one with crops in it.
- It would be nice if we would receive imagery at least once a year. This way we could use it to update field boundaries in the applicable program year.
- Use least amount of steps to get to results of problem.
- "2 things I would like to see with the imagery (1) Imagery more clear and defined, (2) Imagery updated preferably every year so that imagery is recent and up to date for efficiency in the office. This would save us a LOT of time and the customer the following year doing the acreage report, checking CRP, spot checks, recons, field boundaries, etc..."
- Prefer one-meter
- Having 1-meter NAIP annually would be ideal. The three-tier photography products outlined in the IFTN plan would be very beneficial. Serving contiguous imagery through a web service and the ability to download or order county CCMs would be great.
- For general Farm Programs we need photo's as current as possible and every year. For disaster we need photos as soon as possible after a disaster to help formulate losses.
- 2008 Imagery received is good quality and appears to be overall a very good production. No problems matching with existing CLU or GPS pts from the field.
- Current and up to date Imagery is very important to all of our programs.

- I think it would be great to get the imagery every year due to investors that are developing the land.
- The color makes all our work better.
- Imagery must be collected annually. Our GIS applications are increasingly requiring complete statewide coverage to meet customer program requirements. FSA must receive imagery funding support. Currently, imagery must be stored locally when used for analysis. Access to historical imagery (including annual slides) is important.
- Imagery accuracy and credibility are always very important to our program administration and customer.
- We do need imagery every year. It saves a lot of time and man-hours when we have current imagery. The imagery we have now is 2006. There have been a lot of changes to some areas of the county since this imagery was taken, anywhere from 1500-3000 acres have been taken out of production for homes, roads, or some other type of commercial development. Without imagery taken and delivered to county offices, travel and other money figures will increase.
- Measuring Stripes for Crop Reporting is very time consuming.
- I'm not sure the start and end date references. I use it as dates to be flown. It's important to receive it timely and the resolution needs to be very high.
- Measuring Strips takes a lot of time. It is hard to get everything accurate with overlaps.
- Imagery is very important to our FSA agency in that acreage reports are very detailed. This information is also shared with Federal Crop Insurance Agency for doing claims and carrying out the producers' crop insurance policies. Clarity of photos is important for our use. It would be nice to have done yearly but with budget constraints at least every other year at the least.
- Shading always seems to be an issue in the field boundaries.
- It would be easier to draw off boundaries if the contrast between cropland and non-cropland was clearer when you zoom in.
- Pinal County, AZ needs to have NAIP imagery every year.
- Annual imagery is important to provide history documentation. It seems we always have a need to verify what has occurred in the past, and without this valuable record, we are falling short on some of our business processes.
- We use the imagery for every program - it is important to have accurate, clear, and current imagery available at all times. If the producers can't depend on the imagery we have, neither can we.
- Would be great if we could receive a new image every year. At minimum a one meter resolution or even greater if possible as they tend to become distorted and blurry when zoomed in when doing CLU maintenance
- I feel it is very important to have accurate and updated imagery each year for counties to administer programs efficiently and effectively.
- Better accuracy on the first set of imagery given to the state rather than having to issue 2nd versions so often. Also, absolute accuracy would be a great benefit instead of accuracy relative to the old aerial photography.
- Counties that have double cropping may have a need to obtain imagery more than once a year for spot checking purposes

- There are very few FFF&S locations in our counties. On rare occasions, Farm Loans requests maps.
- Most important is to receive annual, (current year) imagery EVERY YEAR!
- Multiple tract printing capability.
- The yearly NAIP imagery is a very useful tool in keeping our records up to date especially in regards farm changes.
- 4-band is very helpful for distinguishing between features and should be considered as a normal part of imagery acquisition.
- Basically the better the resolution we can get the more accurate our reports will be. It is hard to tell a farmer that we carry cropland in hundredths, when the resolution from most of our imagery has a hard time picking up field boundaries.
- In the "South" it is important to take imagery early in the crop year for crop reporting, due to heavy haze and clouds that come on us later in the season. Winter is the best time to take imagery that will be used for boundary line work, since the leaves will be gone from the trees.
- In our state we have an average of 100 land changes per year per county that range from ownership changes to farmers taking land out of production to farmers bringing new land into production. Our state is also heavily enrolled in the Conservation Reserve Program and to ensure accuracy and integrity of the CRP the Office will use the imagery to determine if the area is in compliance with procedures.
- You have asked about what days we need the NAIP flown--we need it twice a year for crops, as needed for disaster (before and after) which is as needed through out the entire year. It all depends, why do we not utilize our satellites to obtain NAIP on an as needed basis? We are the Government and have access to several satellites just like the military does. Wouldn't it be more economical to use our own satellites instead of contracting to have someone fly over the US and take pictures. This year's NAIP is very foggy and cloudy and poor quality.
- We would like to use the imagery for all programs; however, it is not up to date.
- We find this imagery invaluable to the office to keep our farm records current and for compliance with all of our programs. We think that receiving imagery annually helps us tremendously.
- The clarity is very important to almost everything I use the imagery for. We use our imagery a lot for CRP boundaries and for boundaries for new ground broken out and farmed.
- Really wish farm and tract number would automatically post to CLU maps when printed - would make certification and compliance much easier.
- I am new to FSA and am trying to feel my way around. I have a very vague concept of applications. I appreciate the survey.
- Annual imagery is needed due to extensive building in the area.
- Yearly updates to the CLU layer and having a very clear, close up picture would be very helpful. Having farm and tract numbers and the date automatically updated on maps would also be very helpful.
- The clarity and accuracy of the imagery is critical. You don't realize how vital it is until you get an imagery that has a shifted for part of a section and it starts throwing the acreage accuracy off. Thank you for asking the COF opinion. It is greatly appreciated.

- We use the imagery extensively and really have needed to receive it every year. With the addition of hog buildings, wind mills, etc. it is very important for us to have every year. We also use that imagery to determine cropping history for programs such as CRP. It would be our hope that something could be done to make the imagery happen each year. Thanks.
- The updated imagery is a very important tool in our office. Because of new highway construction, flooding and wind this past year, the new imagery was very useful to our county.
- Good color; ensure that it aligns properly to different flight lines.
- I left a couple of the time frames to fly the imagery blank. This is b/c for imagery for disaster/emergency use it would be important to fly based on the time of the disaster. Also, for the grain bin tool the timing of the imagery doesn't matter as much as it could be flown at any time once that structure was built.
- Imagery needs to be flown timely each year and provided to the county ASAP. It is a valuable tool when received accurately and timely.
- High value specialty crops grow in very small fields sometimes .001 of an acre. So the better the imagery, the better the reporting and program implementation. GIS personnel at the state level must receive training or be trained when hired. This is a powerful tool but only if fed correctly and uniformly across the country. There is no coordination between FSA and NRCS on the national level that is trickling down to the COs. The amount of care and feeding of the GIS system in the county office is sufficient to justify more GIS PTs. Without folks who can dedicate time to this, the best imagery in the world is wasted. Thanks for the opportunity to weigh in.
- The imagery should be provided in a measurable mm for official use every year to keep CLUs current with changes made to the farm. This would result in better relations with our customers.
- Having a clearer image that does not have smudged together pixels is important. Annual imagery is very important. Last year was the first we didn't have that and we really missed it. It caused a lot of field visits that would have otherwise been handled in the office.
- Would be nice if the imagery was at a higher resolution so we could see more detail on the maps.
- Since I am looking at NAIP from a State perspective, the dates I've shown for acquisition are broad to cover the entire State.
- Since NAIP imagery is no longer used for compliance and cannot be produced quickly enough to impact crop certification, we should maximize its use for boundary determinations. In South Carolina, this means leaf off. This also avoids the volatile summer weather patterns.
- Imagery provided at least once every year is very essential for program delivery.
- The imagery for Payne County is darker in the Eastern half of the county. This was due to cloud cover on the 2nd day of the flyover. When you adjust the contrast to compensate, it overexposes the other half of the county. This makes it very difficult to create "clear" maps en masse. Thanks!
- Very important not to be clouded on day of picture. These latest imagery was excellent.
- I love the imagery. Thanks.

- I would have liked to have had the ability to go back to reconsider some of my answers in this survey. The question on location is somewhat incorrect as I am a STO Specialist working out of a county office.
- Denton County is in an area that is growing rapidly, and also has a lot of gas well activity in cropland fields. It is extremely helpful to receive new imagery each year.
- better resolution
- With good imagery many tools and decision making processes can be used and/or developed to utilize the accurate imagery.
- Thanks for updating it this year. It is great to have the new imagery.
- No, thank you :)
- I'VE BEEN WITH THE AGENCY FOR OVER 37 YEARS AND NAIP IMAGERY IS ONE OF THE BEST TOOLS THAT WE'VE HAD FOR DETERMINING LAND AND/OR CROP ACRES.
- 2008 imagery is a lot better than the 1 meter imagery in the past.
- Need to better show the difference in Corn and Grain Sorghum acres planted.
- Imagery is clearer. I am adjusting to the "redness" of the "CIR". Thanks for your hard work!!
- Keeping up with urban development, so many farms are being put into subdivisions that are no longer in ag.
- Emergency use imagery would have to be taken right after a disaster event occurs to be useful. Normally this new imagery does not arrive timely for compliance use in the county office. Most compliance has to be done in the field due to the new imagery.
- For maintenance of CLU, the best time for flight of imagery would be the winter season when trees do not have foliage. Better resolution for older fence (property) Lines.
- Currently we are scheduled to receive imagery once, every three years. That is two long a time to go without pictures of the county. Annual imagery would be best, but at least every-other-year. Thanks for this opportunity!
- The most recent (2008) set of imagery received was of somewhat poor quality. It had clouds and shadows obscuring several areas of cropland. Better resolution imagery would also be preferred.
- We are in an area that urban sprawl is taking place and not having updated imagery every years possibly leads to producers receiving payments on areas that have been converted to housing or driveways. Being able to see these delineations and to remove them from the field keeps the farm records accurate. Imagery 2 - 3 years old allows for that many more errors in these cases. When property is subdivided we are able to see the established field lines rather than guessing if we are correct or not. There definitely is a benefit to having imagery every year in our county.
- I wish we would receive our imagery earlier. We are already in November and have not had our imagery for the 2008 year. That makes it difficult to verify crops on the field after crop is harvested or destroyed.
- Resolution needs to be very good for proper identification.