National Agriculture Imagery Program

Potential Program Changes

USDA Planning Meeting

Salt Lake City, Utah

December 4-6, 2006

Kent Williams
NAIP Program Manager
USDA Farm Service Agency
Aerial Photography Field Office (APFO)

NAIP Program
Agenda

Potential Program Improvements for 2007

- Evaluation
  - In terms of management
  - Vendor feedback, RFI and Vendor site visits
- 2007 Contract plans

NAIP Program
Evaluating Potential Changes

1) User and stakeholder feedback
   - QA results
   - Direct feedback
   - FSA user survey
2) Vendor Feedback
   - Vendor Site Visits
3) Capture Issues

- Internal (APFO)
  - Contracting, Data management, Delivery, QA, etc.
  - Partners (NDOP Steering Committee meeting, USDA Planning Meeting)
  - FSA customers and stakeholders

4) Request for Information
5) Define 2007 Specifications
6) Request for Proposal

Potential Changes in NAIP Program

1. Product Deliverables
2. Coverage
3. 1 meter only
4. Delivery Cycle
5. Improved Horizontal Accuracy
6. Image Quality Improvement
7. Status Information

Product Deliverables

Item	Objective/Requirement
4 Band Deliverable	• FSA Aerial Compliance – Better discrimination of vegetative features • 2 product, same deliverable – RGB FSA, CIR partner
Maximum radiometric resolution	• More detail in highs and lows – FSA example -CLU in tree shadow
Native Image Extent	• Better confidence in image acquisition date
Format	• Long term archival • Max usefulness to user

Product Deliverables

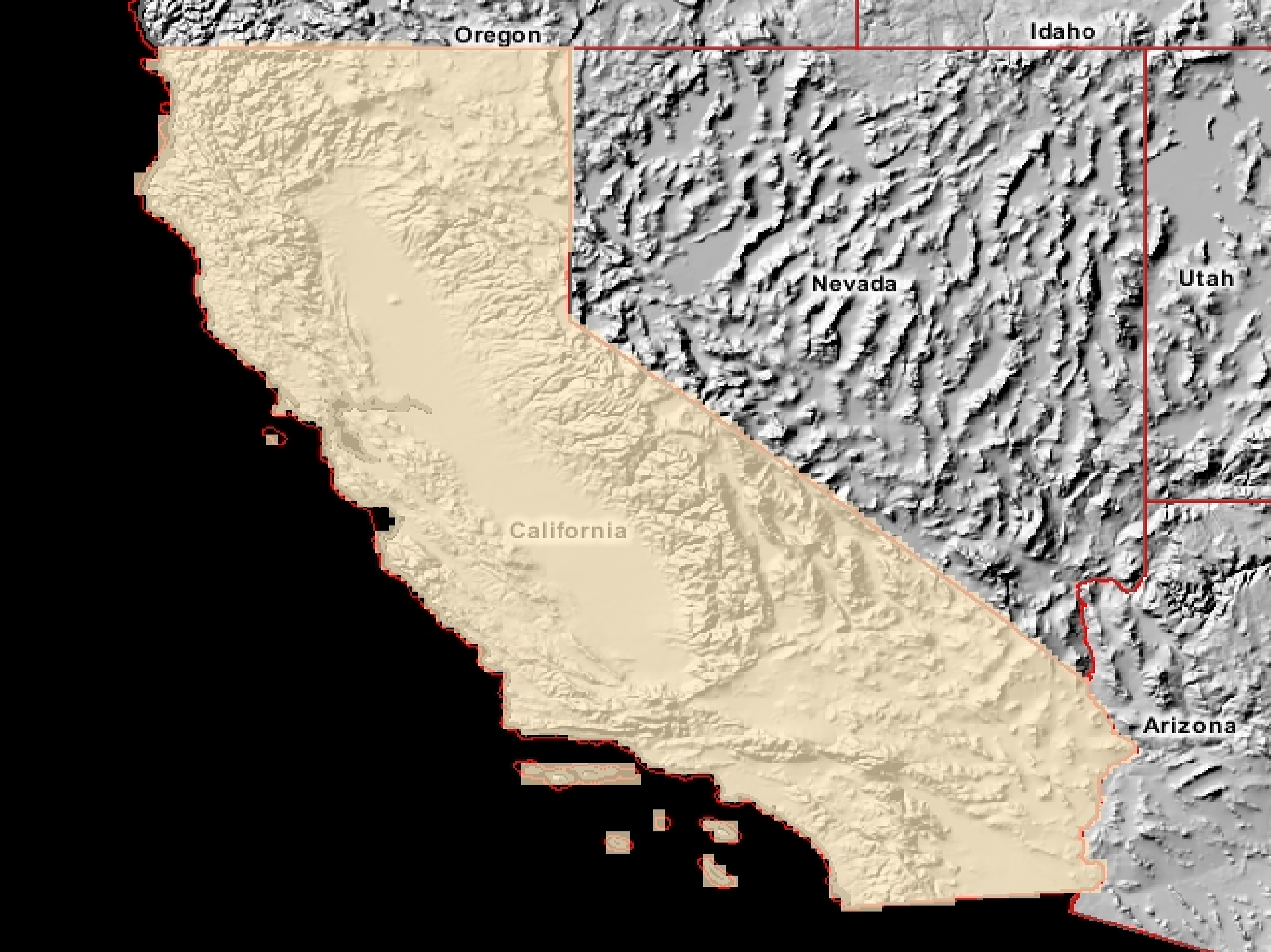
Item	Objective/Requirement	Where we're at:
4 Band Deliverable	• FSA Aerial Compliance – Better discrimination of vegetative features • 2 product, same deliverable – RGB FSA, CIR partner	• GeoTIFF, QQs • Web service delivery to FSA users (and partners?) • Issues: – Color balancing – Web service delivery • Possible pilot project
Max radiometric resolution	• Retain maximum info of sensor	• Possible secondary deliverable • How to use?
Native Image Extent	• Better confidence in image acquisition date	• Possible secondary deliverable
Format	• Long term archival • Max usefulness to user	• Retain GeoTIFF (QQs) • Retain MG3, 15:1 (CCM)

Coverage

Sub Item	Requirements/Objectives
Remove Duplicate QQ	• Minimize Costs
Minimize FSA core coverage	
NAPP flight line	Reduce acquisition and delivery time

Coverage

Item	Requirements/Objectives	**Where we're at:**
Remove Duplicate QQs	Minimize Costs	No Impact
Minimize FSA core coverage		FSA "core" coverage – Maintained as state and CONUS shapefiles – Reviewed by FSA STO specialist
Eliminate NAPP Flight requirements	Reduce acquisition and delivery time	No Impact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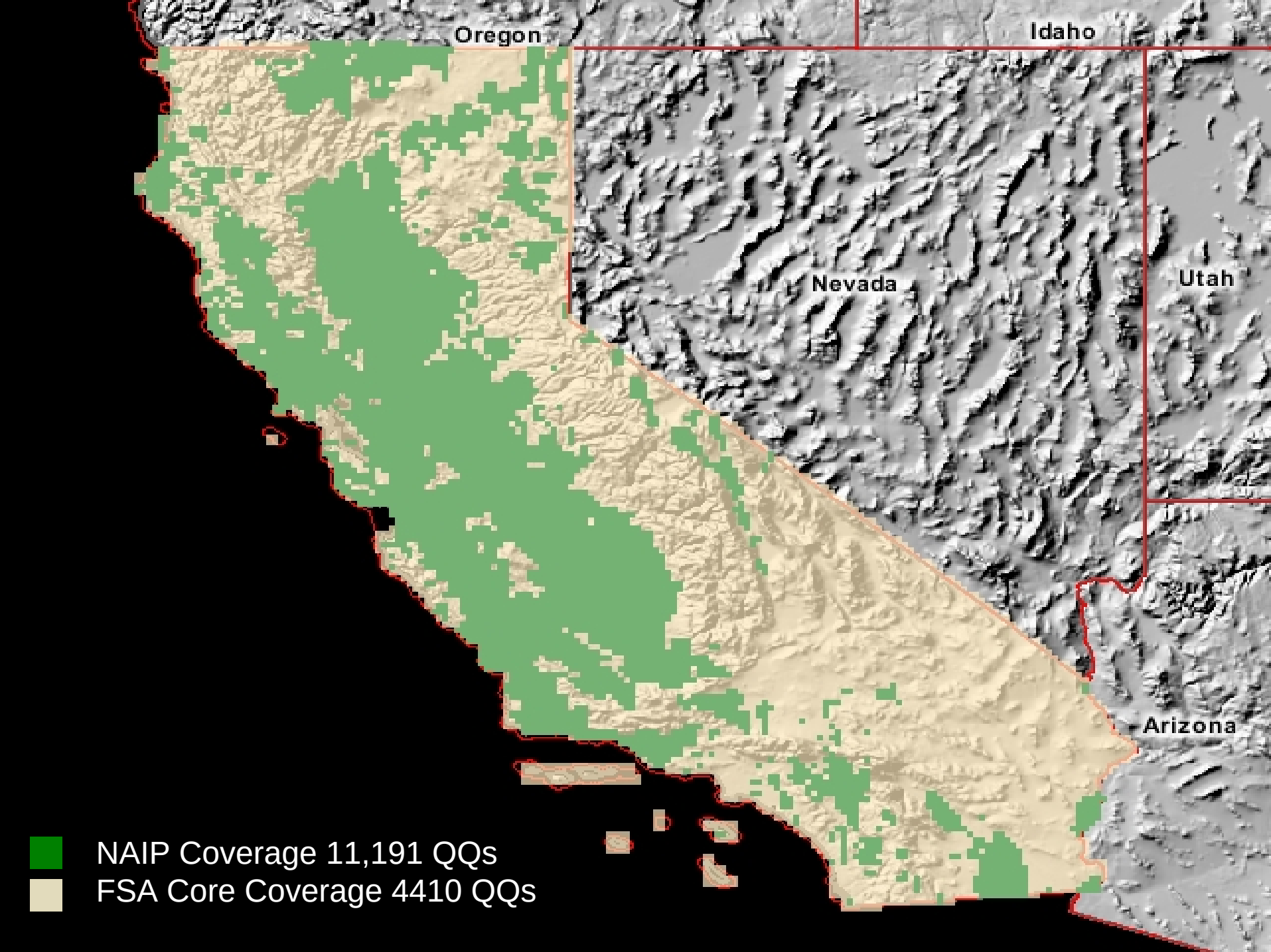
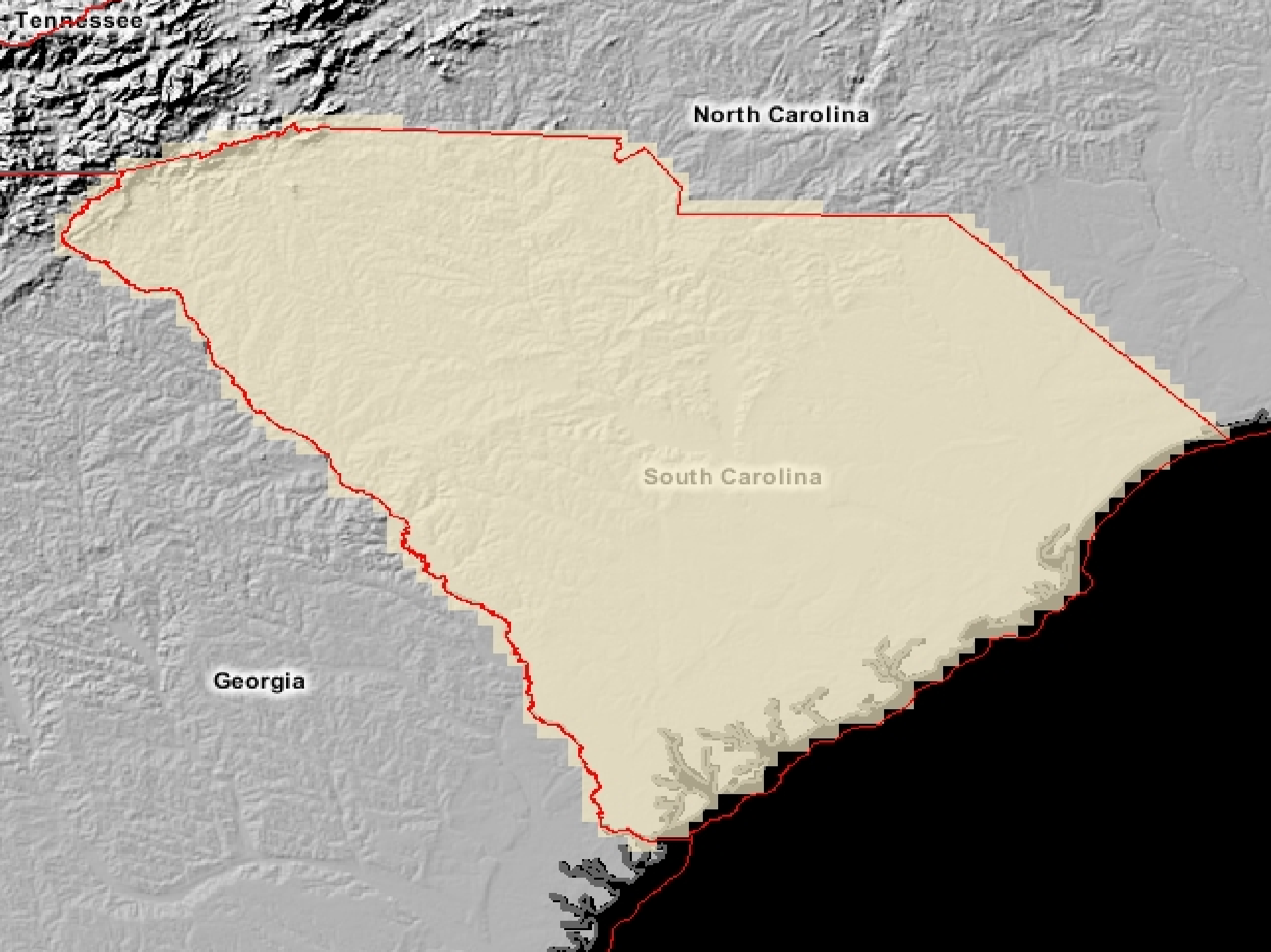
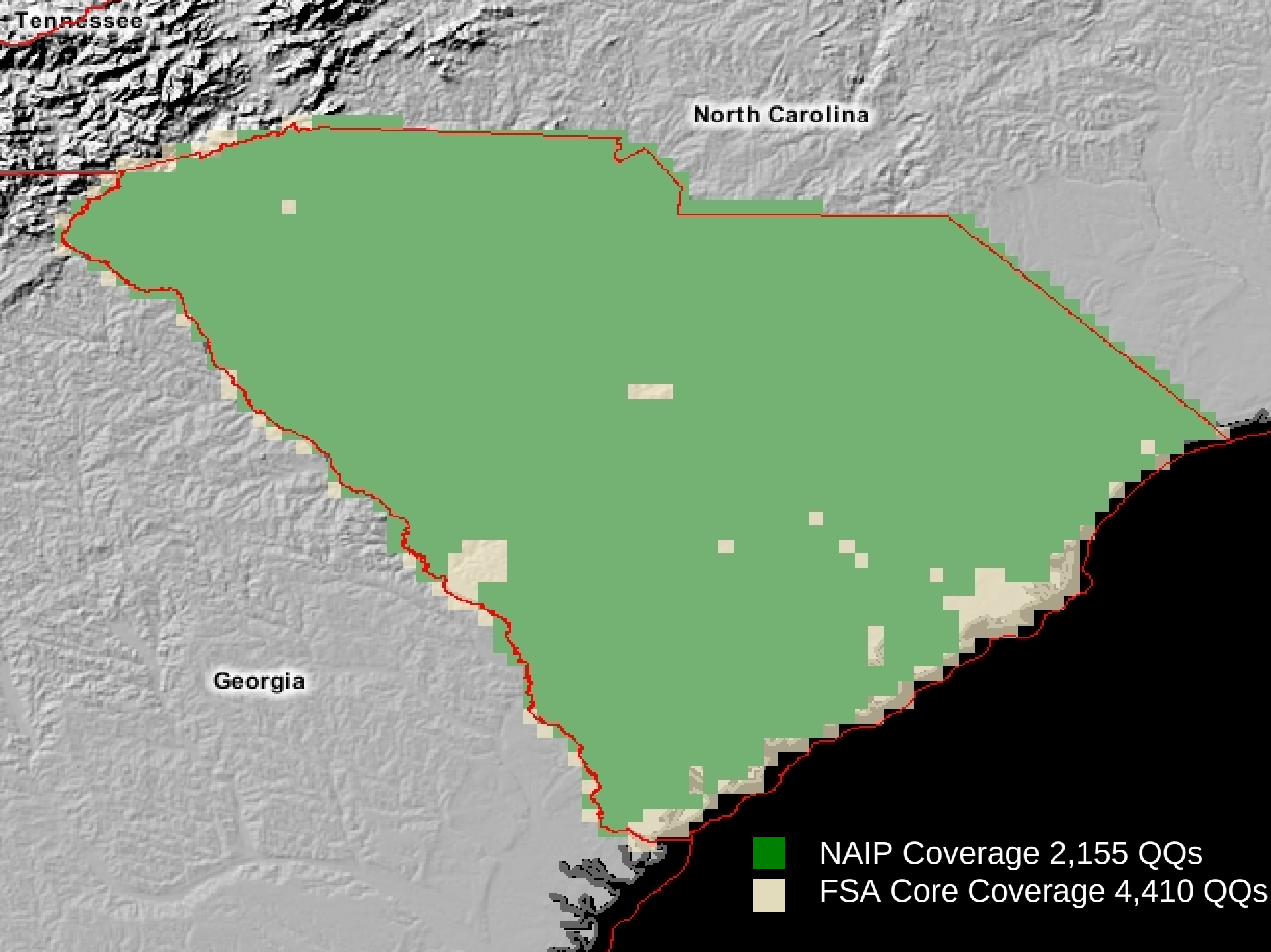
Idaho
Nevada
Utah
California
Arizona


Oregon
Idaho
Nevada
Utah
Arizona
NAIP Coverage 11,191 QQs
FSA Core Coverage 4410 QQs


Tennessee
North Carolina
South Carolina
Georgia


Tennessee
North Carolina
Georgia
NAIP Coverage 2,155 QQs
FSA Core Coverage 4,410 QQs

1 Meter Only

Item	**Requirements/Objectives**
1 meter only	FSA – Simplify Data management at SC level. – Use for more than just compliance (continual CLU maintenance) More Partners – Lower overall cost Align with IFTN – 1 meter CONUS Annual Leaf on

1 Meter Only

Item	Requirements/Objectives	Where we're at:
1 meter only	FSA – Simplify Data management at SC level. – Use for more than just compliance (continual CLU maintenance) More Partners – Lower overall cost Align with IFTN – 1 meter CONUS Annual Leaf on	APFO – Storage planning based on 1 meter CONUS – How to retain cost share incentive • Perception may be that FSA "will do it anyway"

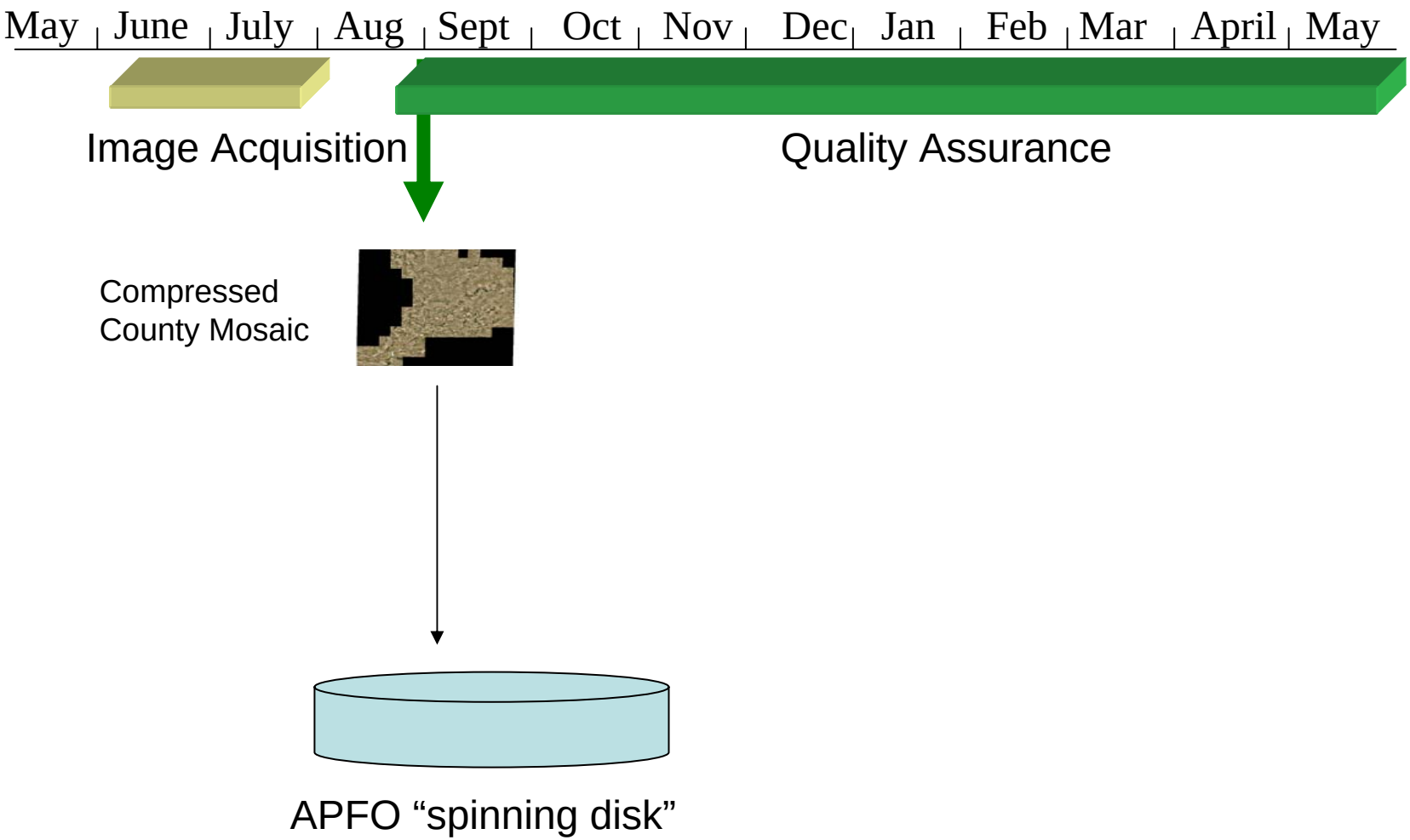
Delivery Cycle

Item	**Requirement/Objectives**
Delivery of Interim Product	FSA – Minimize time from acquisition to use for compliance
Delivery of Quarter Quads	Partners – Want access to full res sooner
Delivery of Final Products	

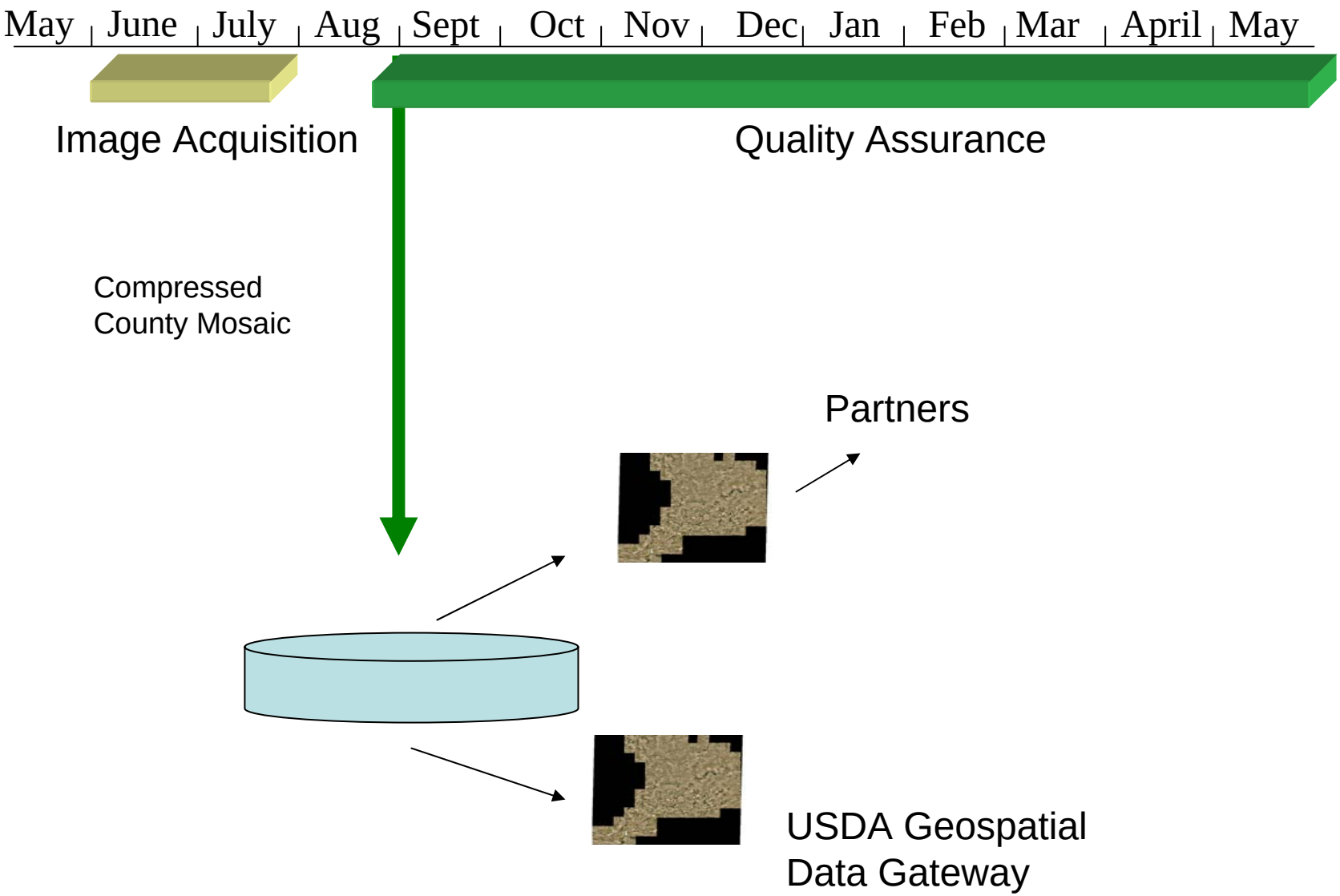
Delivery Cycle

Item	Requirements/Objectives	Where we're at:
Delivery of Interim Product	FSA – Minimize time from acquisition to use for compliance	Web Delivery of QQs – Allows access to blocks short of full project coverage – ArcIMS/Image Server – 1 and 2 meter
Delivery of Quarter Quads	Partners – Want access to full-res GeoTIFFs sooner	Single delivery of project to partners – After delivery from vendors – Before QA complete
Delivery of Final Products	Final Version – Address rework	Address quality problems through warranty – Completion of QA – Version management of QQs – Delivery via APFO Ordering system (Earthwhere)

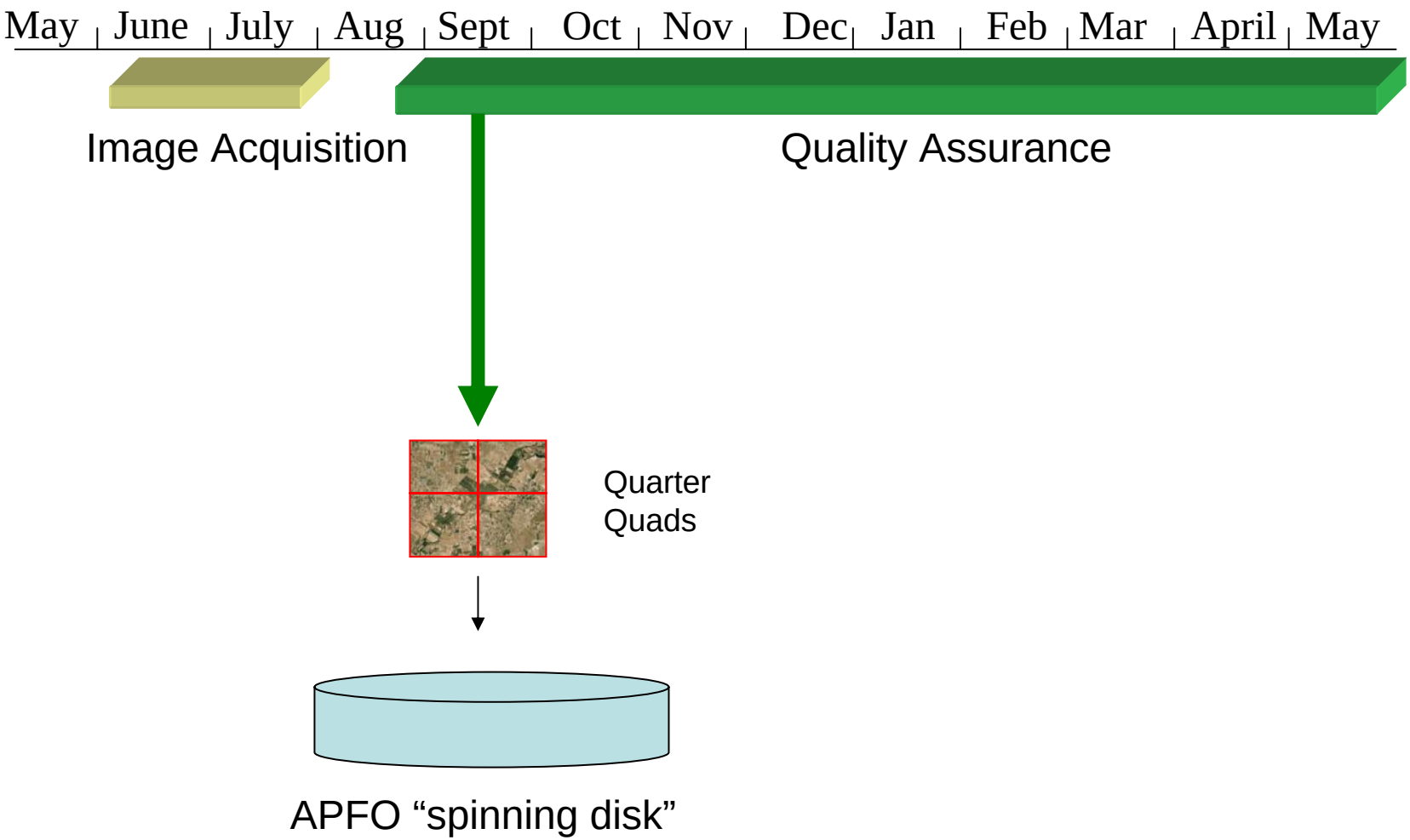
NAIP Annual Delivery Cycle
2006



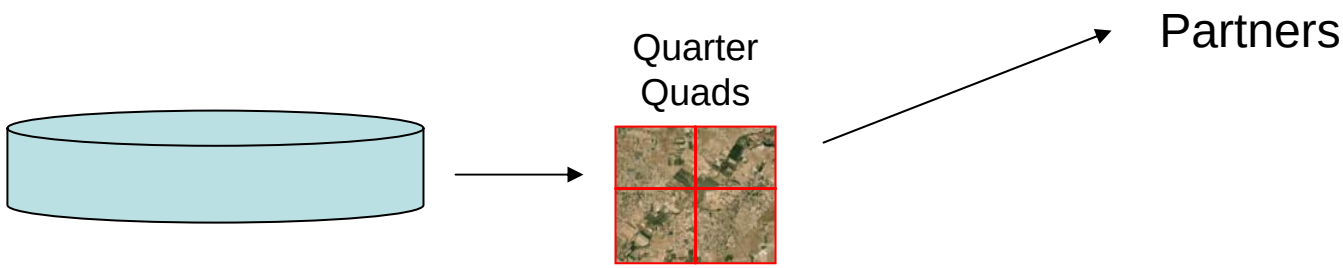
NAIP Annual Delivery Cycle
2006



NAIP Annual Delivery Cycle
2006



NAIP Annual Delivery Cycle
2006



NAIP Annual Delivery Cycle
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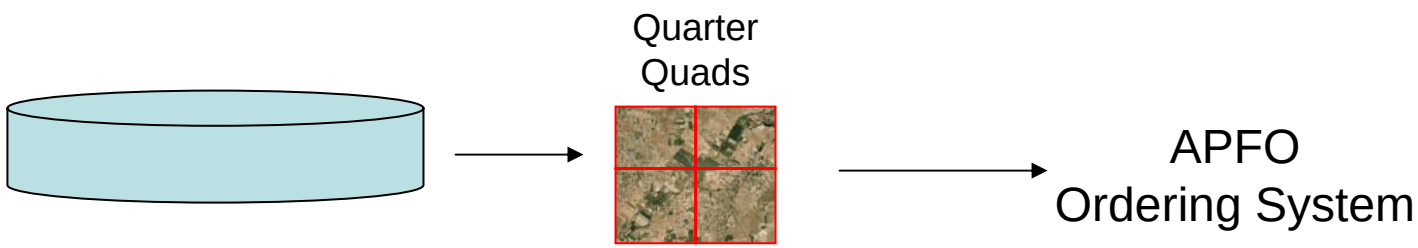
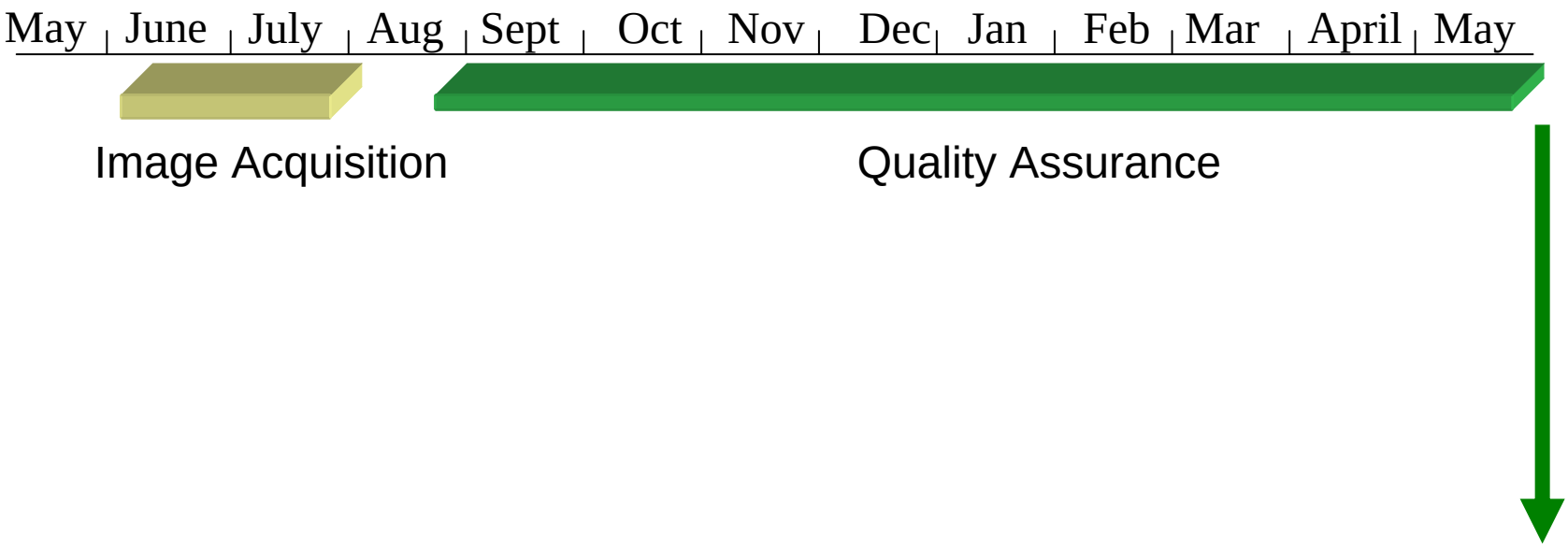
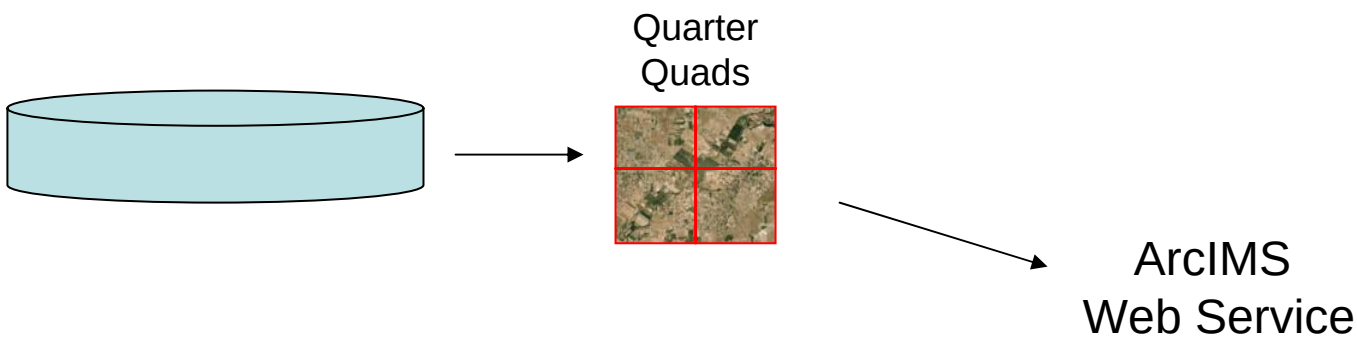
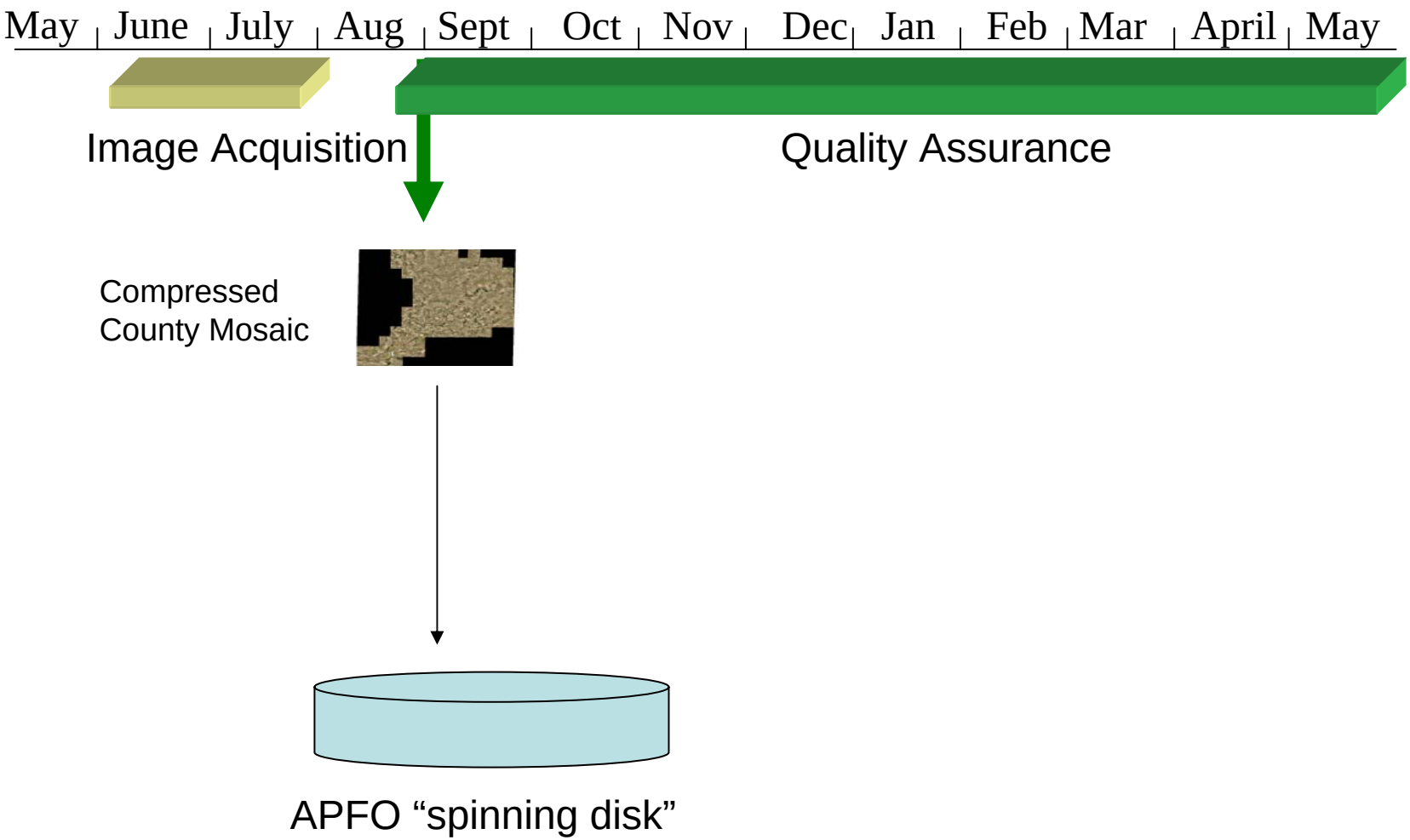


NAIP Annual Delivery Cycle
2006





NAIP Annual Delivery Cycle
Proposed 2007



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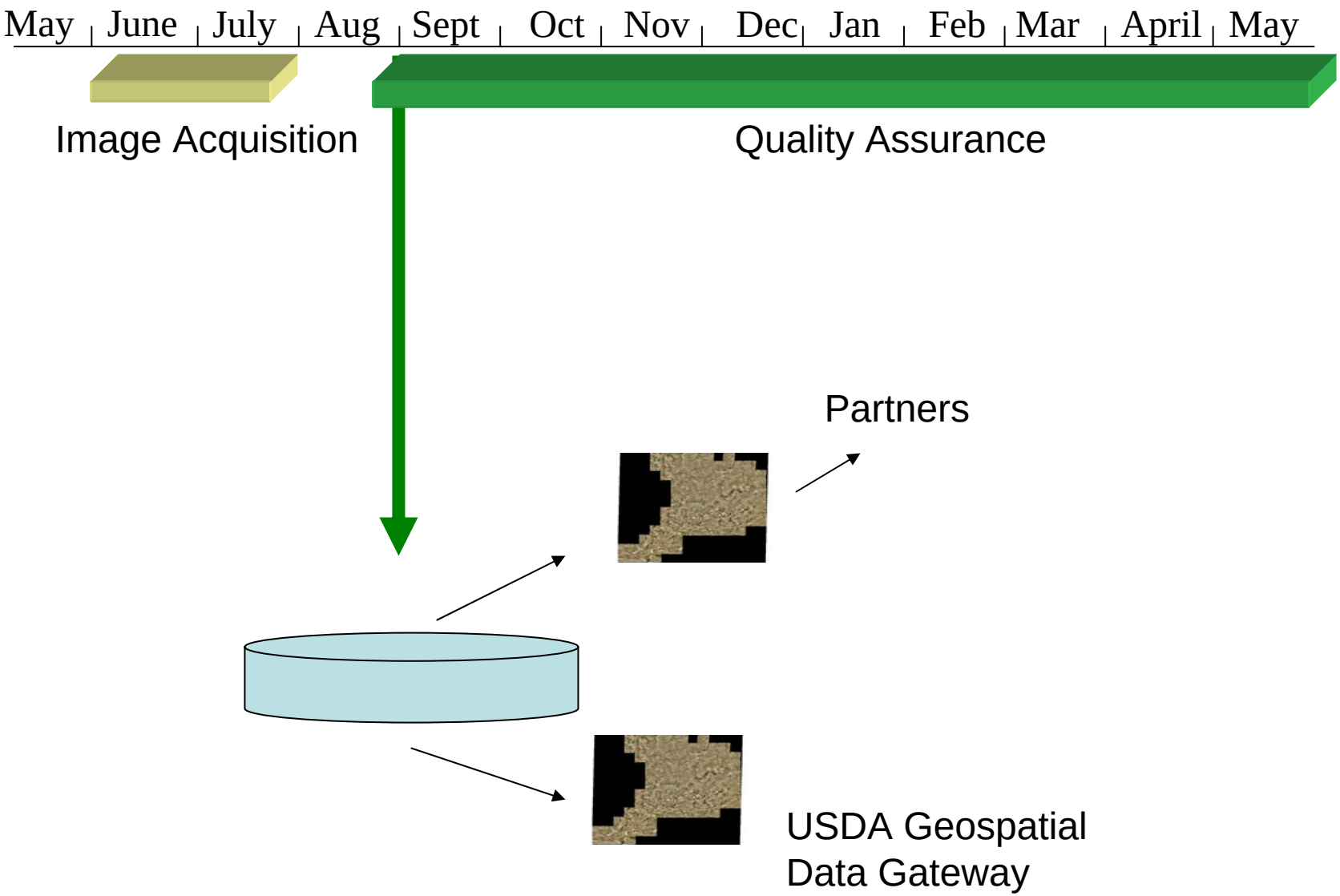
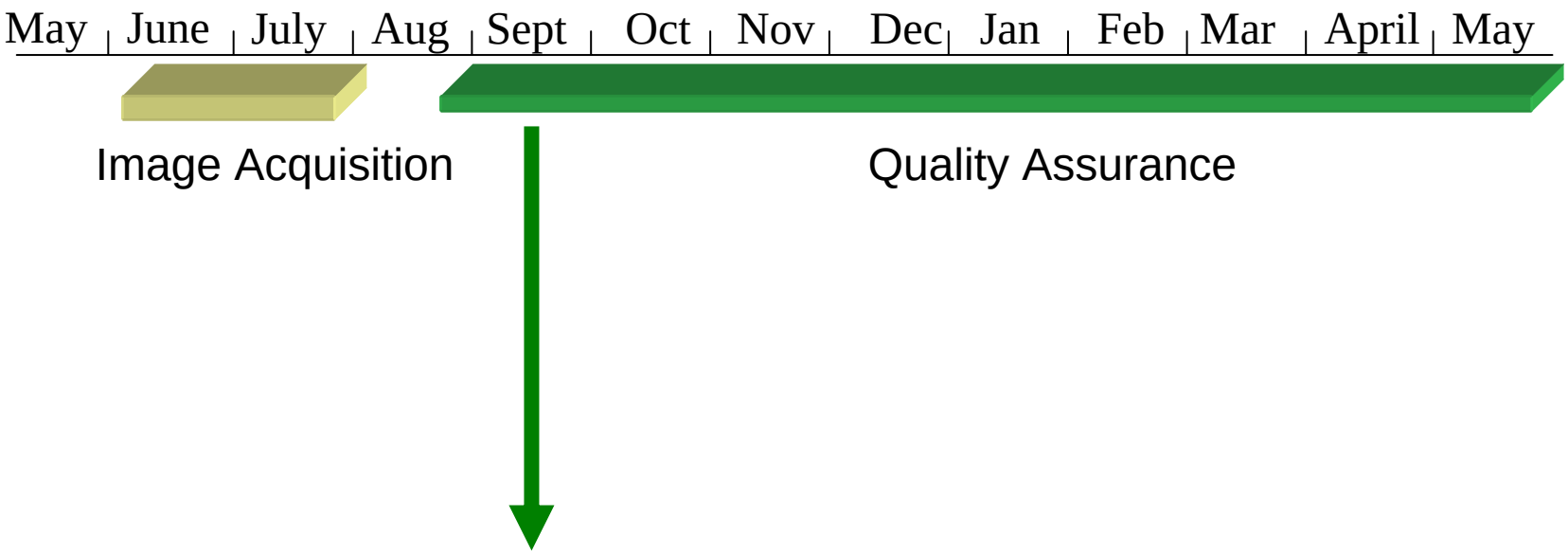
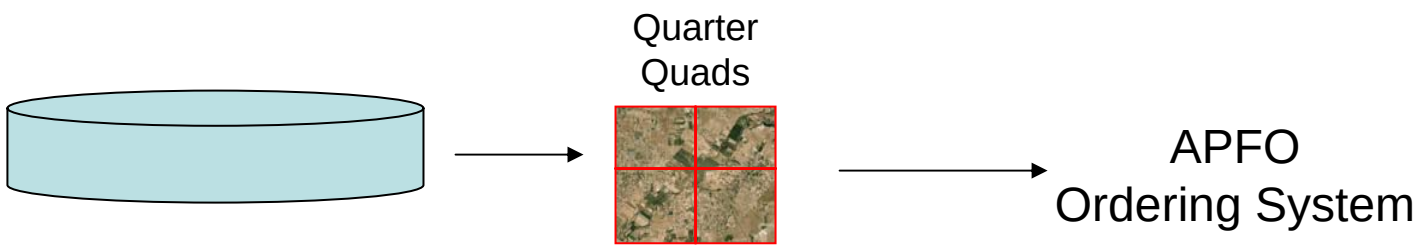


NAIP Annual Delivery Cycle
Proposed 2007





NAIP Annual Delivery Cycle
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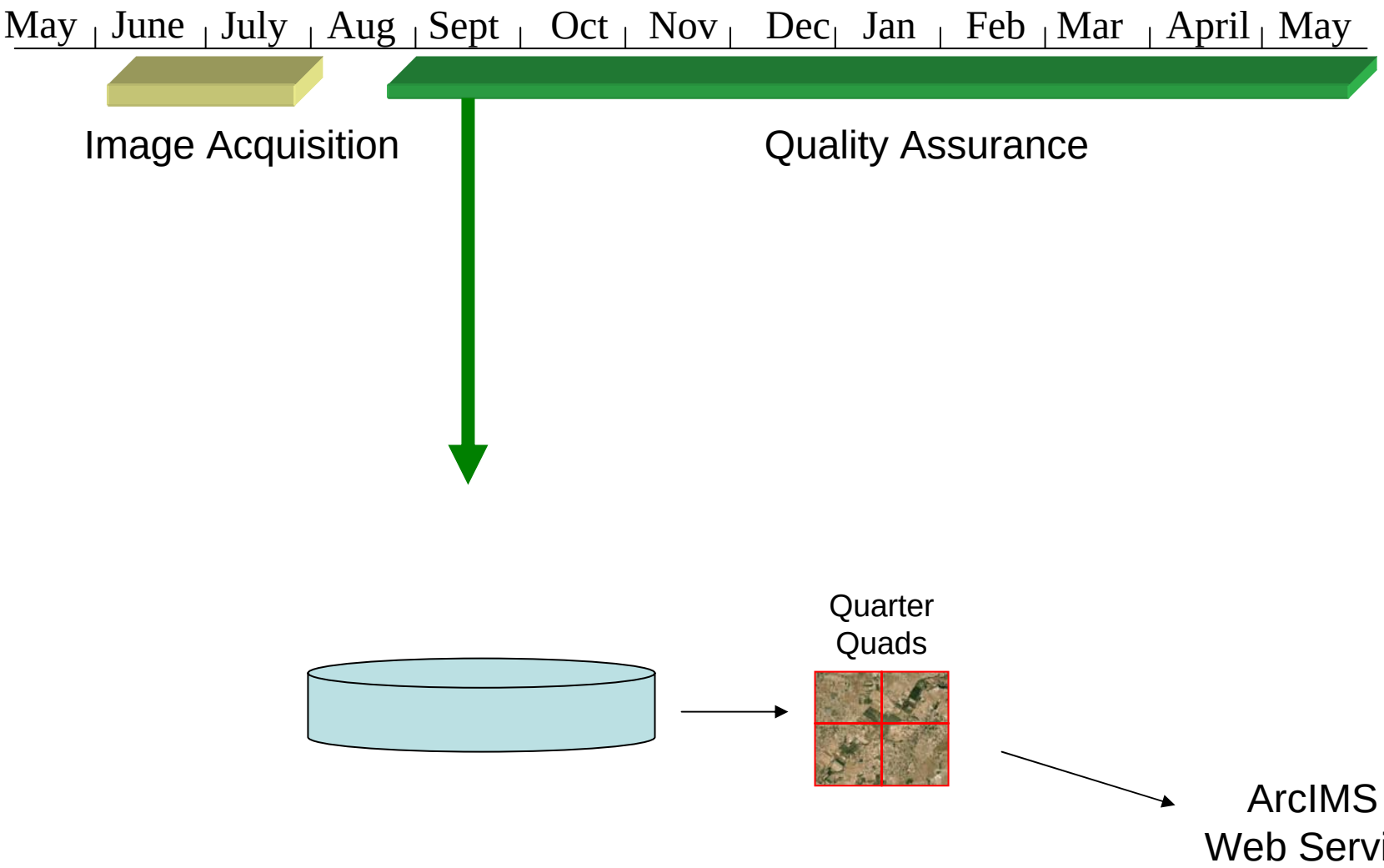
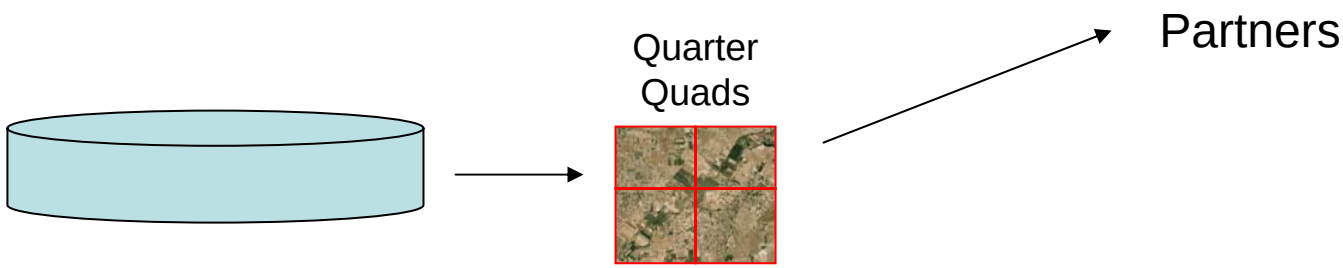


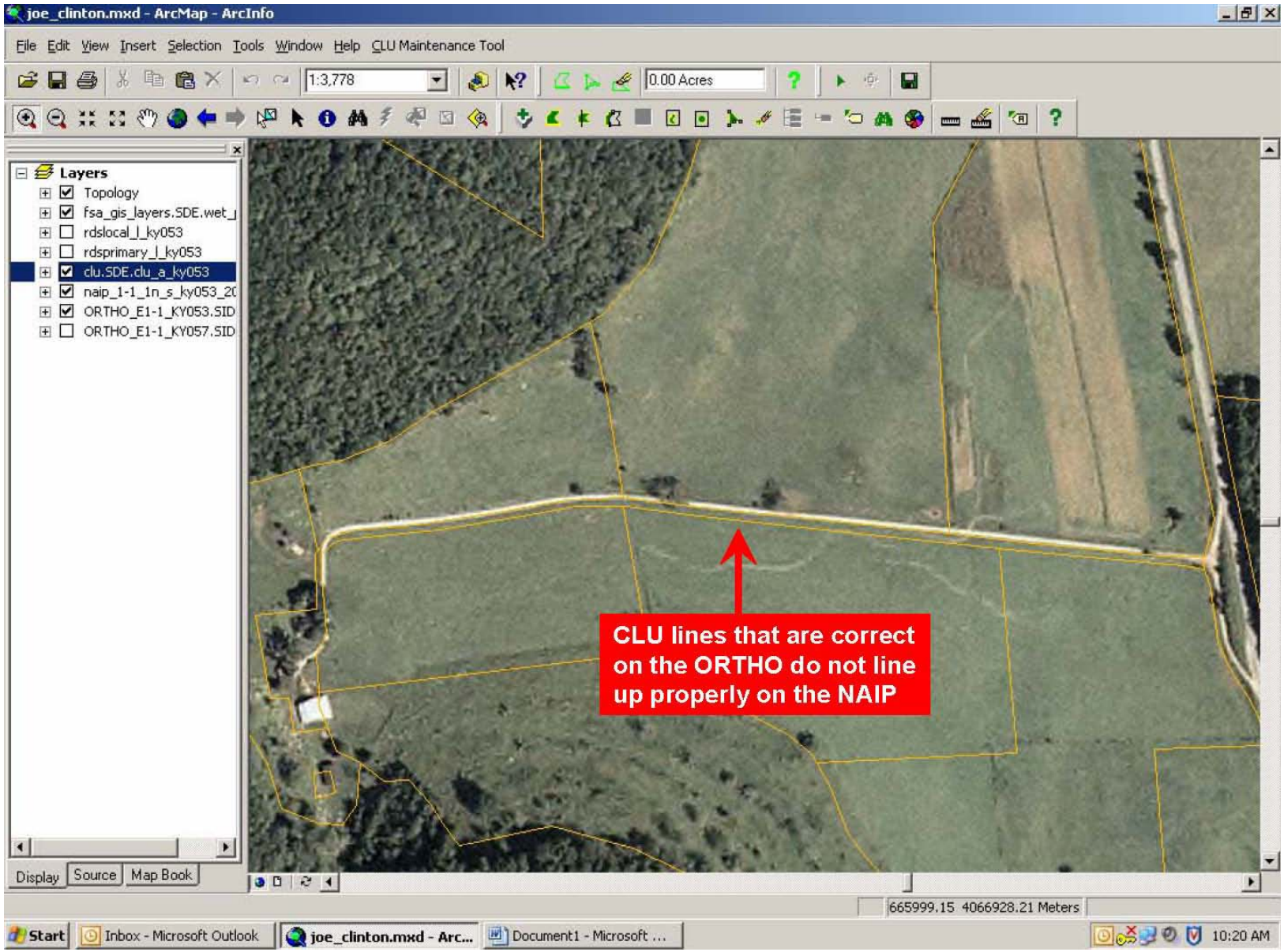
NAIP Annual Delivery Cycle
Proposed 2007



Improved Horizontal Accuracy Specifications

Item	Requirements
Absolute Control Specification	• FSA – Better overall accuracy of CLU and other FSA data • 2-3 meters absolute with ABGPS and IMU, given “good DEM” – CLU registers with state/local datasets. – Increase/maintain credibility with customers
Control	• Independent source of control for QA • Control as GFM
DEM	• Consistency • Best available

FSA Requirement: Increase/Maintain Credibility with Customer (Producers)



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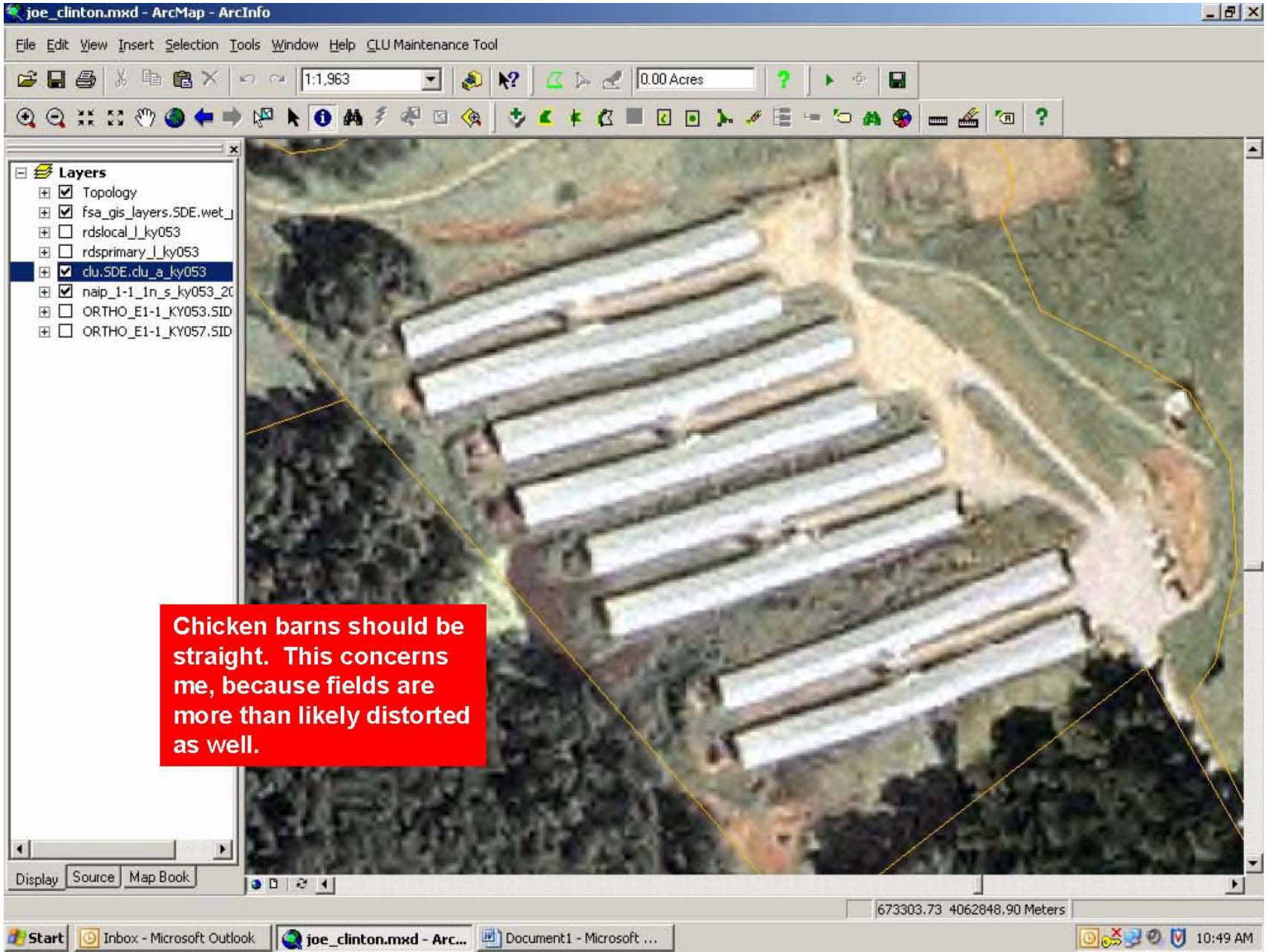

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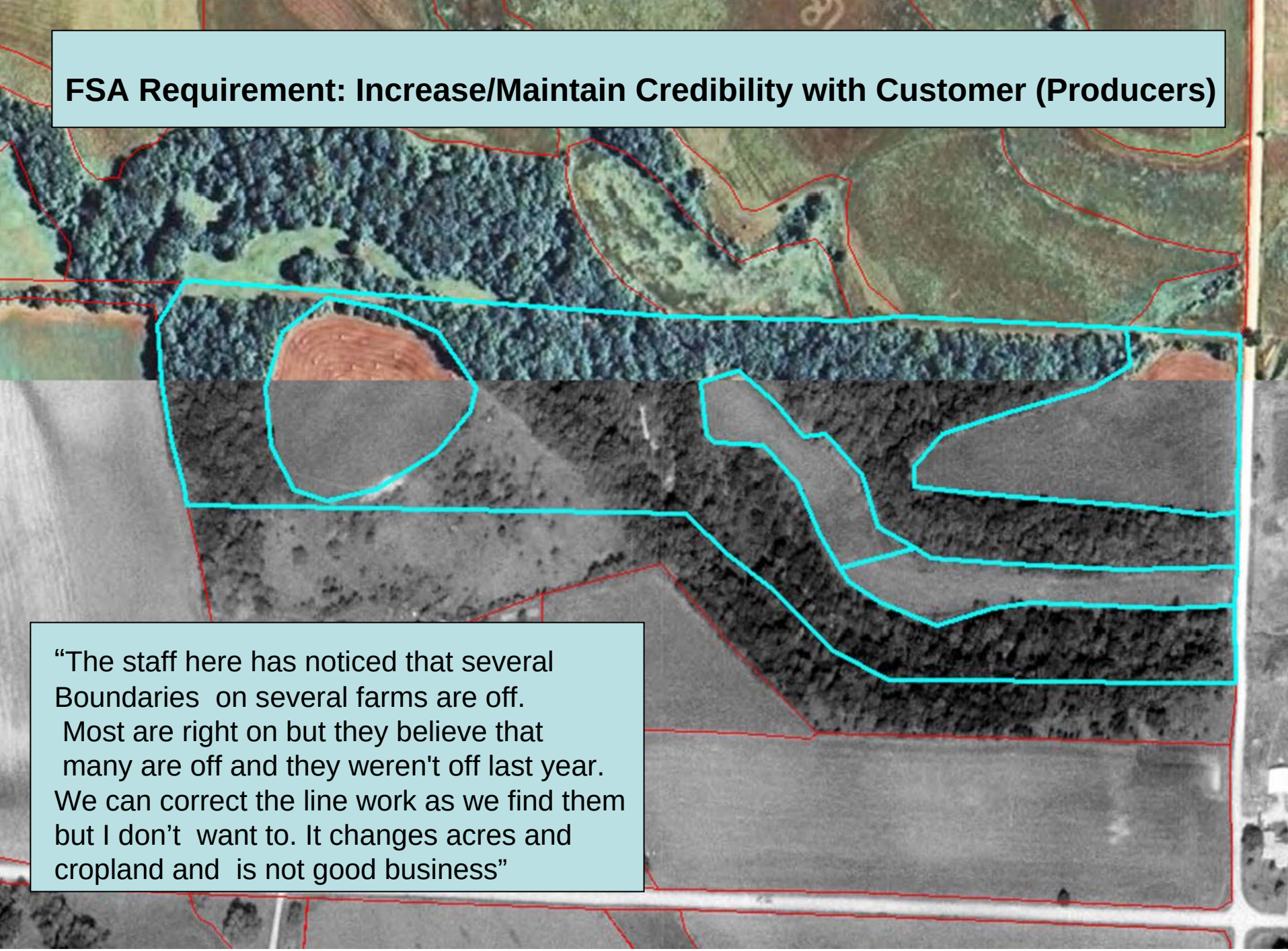
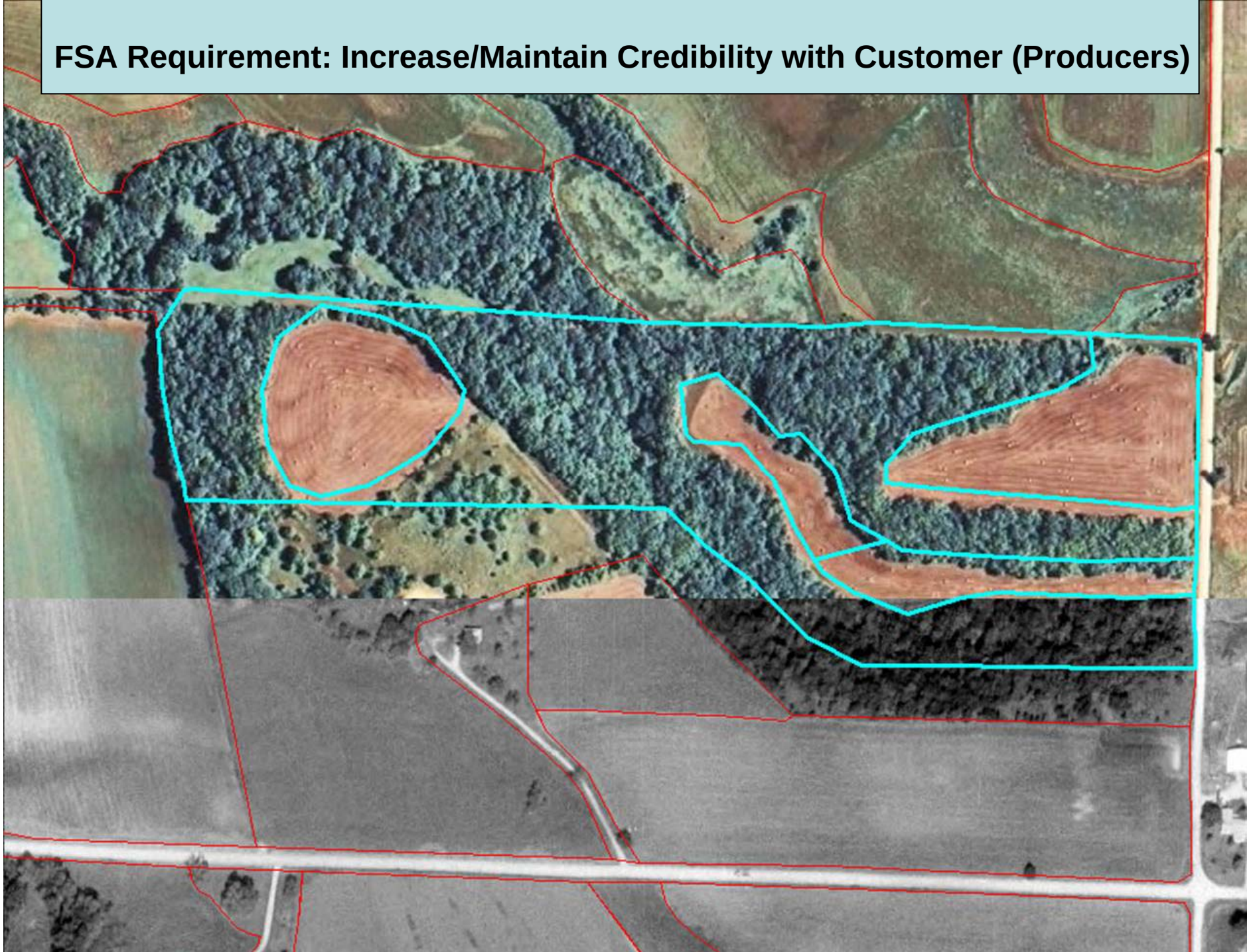


"The staff here has noticed that several Boundaries on several farms are off. Most are right on but they believe that many are off and they weren't off last year. We can correct the line work as we find them but I don't want to. It changes acres and cropland and is not good business"

FSA Requirement: Increase/Maintain Credibility with Customer (Producers)



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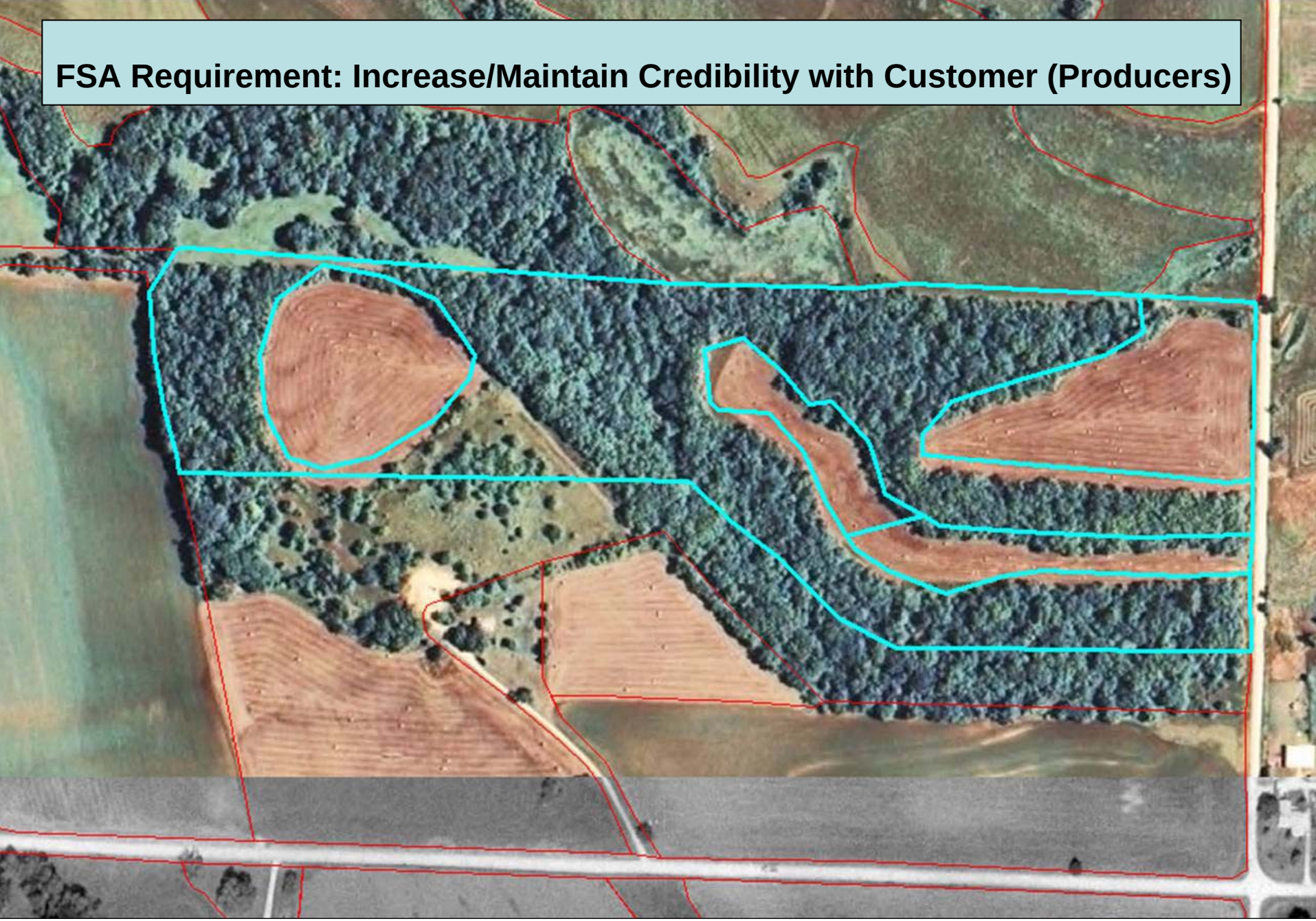

Improved Horizontal Accuracy Specifications

Item	**Requirements**	Where we're at
Control Specification	• FSA – CLU registers with state/local datasets. – Better overall accuracy of CLU and other FSA data. – Increase/maintain credibility with customers • Partners want it – Utah 2006	6 meters (CE95)
Control	• Independent source of control for QA • Control as GFM	Dave Davis – Utah 06 Pilot – Control data base
DEMs	• Consistency • "Best Available"	Brian Vanderbilt – DEM relationship

Image Quality

Item	**Requirements/Objectives**
Quality Assurance	ID image quality “rejects”
	ID quality trends
	Improve Quality Specifications
	Make QA less subjective

Image Quality

Item	**Requirements/Objectives**	**Where we're at:**
Quality Assurance	ID image quality "rejects"	Brenda Simpson APFO QA
	ID quality trends	
	Improve Quality Specifications	Sharon Lunt Tracy Bijck ITT Image Chain Analysis
	Make QA less subjective	

Status Information

Item	**Requirements/Objectives**
Acquisition Progress	• FSA – Monitor acquisition status and data • Determine if “ground checks” required
Delivery Progress	CCM delivery
QA Progress	Monitor QQ availability

Status Information

Item	**Requirements/Objectives**	Where we're at:
Acquisition Progress	• FSA – Monitor acquisition status and data • Determine if "ground checks" required	• Static web page – Updated Daily • Interactive map in development – demo
Delivery Progress	CCM delivery status	
QA Progress	Monitor QQ availability	