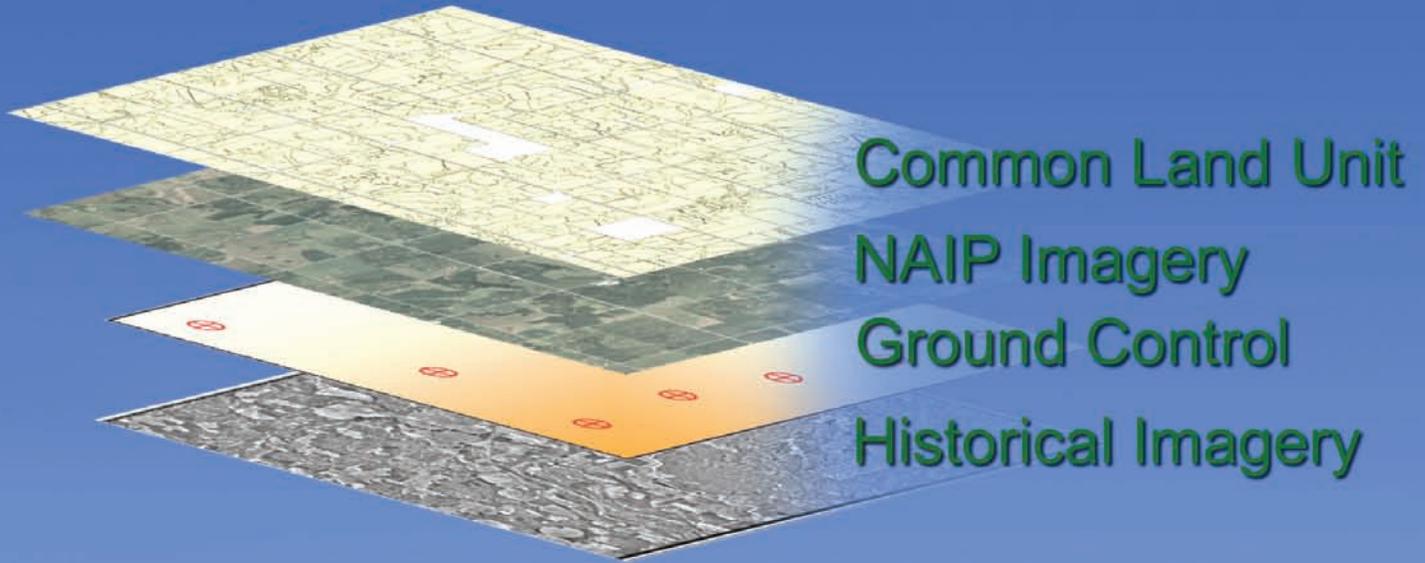


Aerial Photography Field Office

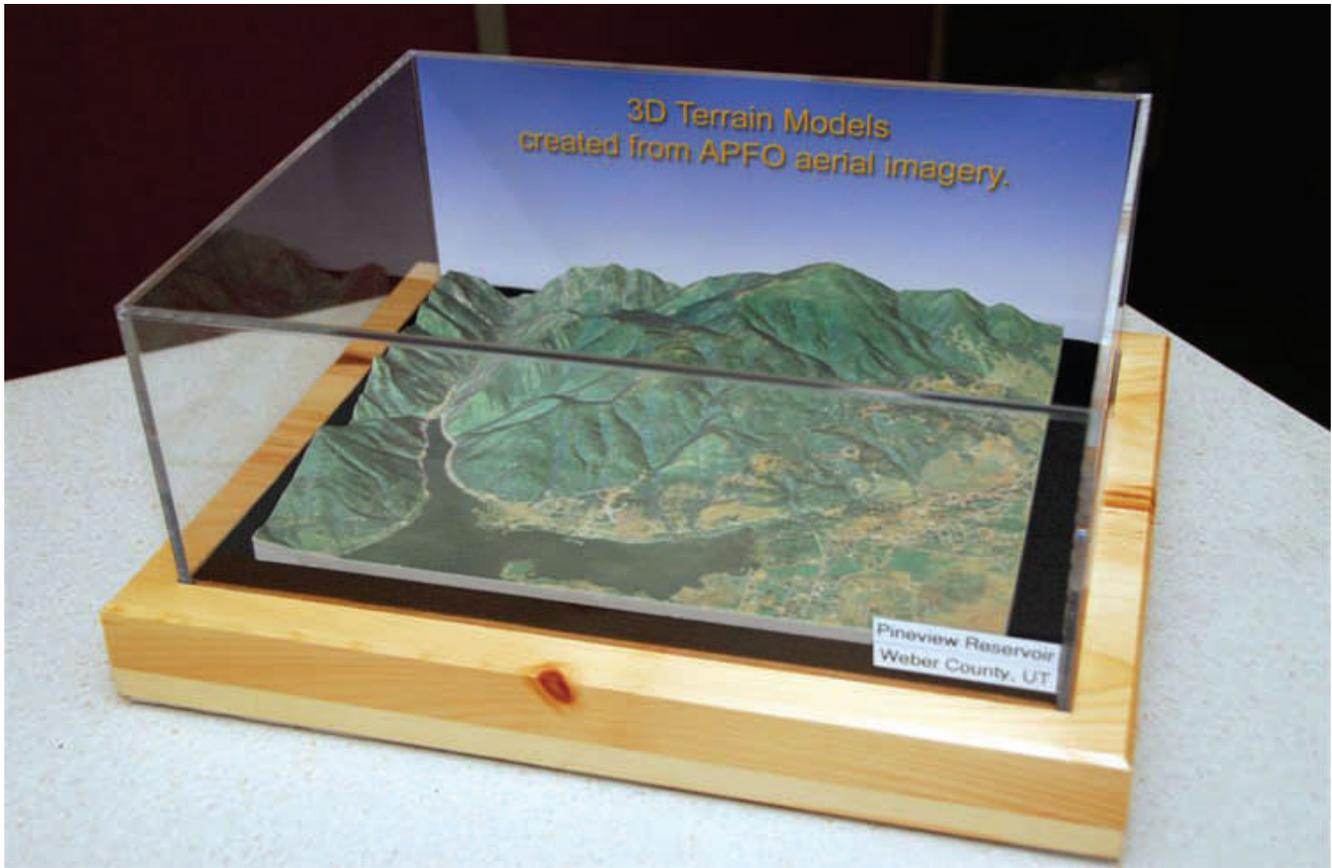
A Division of Deputy Administrator for Farm Programs

Annual Report 2009



Common Land Unit
NAIP Imagery
Ground Control
Historical Imagery





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OFFICE OF THE DIRECTOR



For more than 32 years, the Aerial Photography Field Office (APFO) has provided valuable aerial imaging services and products to not only USDA agencies, but other departments and agencies as well as the general public.

Throughout the years of service, the general functionality of the office has remained relatively consistent, but the actual products and services have changed, evolving with technological advancements. The basic functions of the APFO include;

[Acquisition of Data](#) – In 1977, the imagery was 100% film based, or analog photography. Today, digital photography is replacing the silver halide image and has become a valuable tool in Geographic Information Systems (GIS).

[Quality Assurance of Data](#) – In 1977, aerial photography was received on rolls of film delivered in cans, containing approximately 200 – 250 9x9 inch images. Today, although some film is received, most data is received on portable hard disk drives.

[Archiving](#) – Since 1977 to 2002, more than 12 million film based exposures have been archived at the APFO. With few exceptions, there exists between 7 and 10 different years of coverage in any given area. From 2003 to the present, over 100 terabytes of digital ortho photography have been archived at the APFO.

[Production](#) – In the early years of APFO, various sizes and scales of imagery were produced and delivered. The majority of the products were 24” x 24” Black and White Enlargements. For each exposure, a left and right print was made from the center of the exposure. Today, because of the flexibility of digital photography, the customers Area of Interest (AOI) dictates the final image which can include many frames or an entire county on a single print.

Although the original hard copy photographic print still has its customers and uses, digital ortho imagery has become the standard product supporting FSA and other federal agency business requirements. APFO administers the National Agriculture Imagery Program (NAIP) which together with cost share partners at the federal and state level, acquires digital ortho imagery across the continental US on a regular cycle. APFO provides leadership and support to a number of multi-agency teams and working groups involved with coordinating the acquisition and use of digital ortho imagery and other geospatial data at the national level.

APFO continues to strive to meet our customer's needs, explore and participate in pilot efforts to find best solutions to geospatial problems utilizing recent and historical photography with digital ortho imagery. Striving to be current of continual changes in geospatial technologies is a challenge; one APFO must accept in order for ortho imagery to efficiently be implemented as a base layer in GIS supporting FSA's primary customers.

Diversification beyond using imagery as a reference layer becomes more evident each day. During FY 2009, several projects were completed for the Administrator to include urban area land use change studies, image analysis in conjunction with agricultural tabular and geospatial (vector) data for select areas: Chicago, Chesapeake Bay, Sacramento, Dallas, and Salt Lake City.

We continually strive to enhance, diversify and customize our primary products to meet the changing needs of our customers. We continue opening new doors for value added imagery and GIS based products.



Aerial Photography Field Office

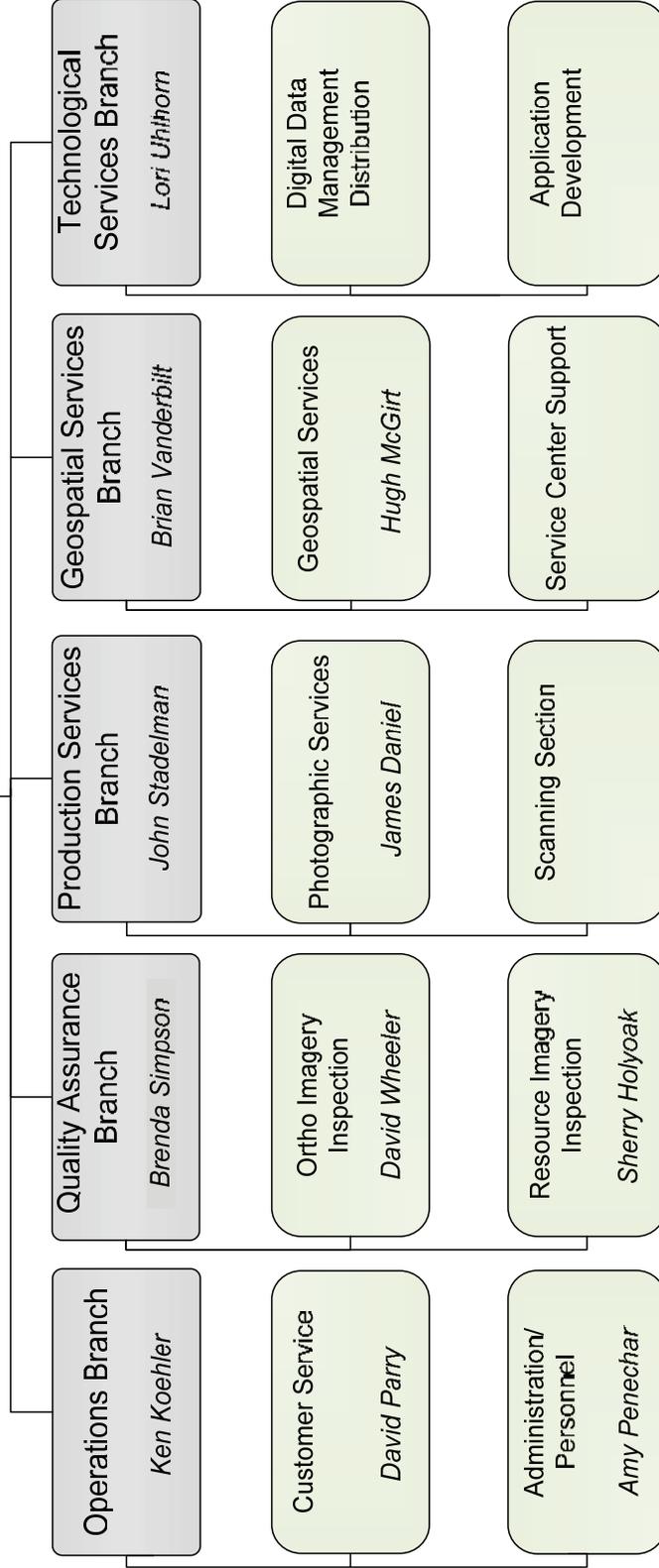
USDA – FSA Aerial Photography Field Office Salt Lake City, UT



Office of the Director
Ronald B. Nicholls
Kent Williams
Jeannie Lopez



Contracting
Geoffrey Gabbott



CONTRACTING

Mission Statement: *To provide quality procurement services which exceed customer expectations by promoting cooperative partnerships and excellence in customer service and products.*

Fiscal Year 2009 Procurement Achievements Summary:

- ◆ **37 Aerial Photography Contracts Awarded - Total \$39.23M**
 - * 13 Small Area Contracts (NRI, WRP) **\$7.69M**
 - * 18 Resource Contracts (9 Film & 9 Digital - USFS, NRCS) **\$1.64M**
 - * 6 NAIP Contracts (FSA & Partners) **\$29.90M**
 - * Total Coverage Contracted **2,217,425 Square Miles**
- ◆ **Multiple IT equipment and support contracts – \$3.46M**
- ◆ **Administrative Charge Revenue – \$396,417**
- ◆ **Grand Total Contract Value – \$42,687,880**

1. National Agriculture Imagery Program (NAIP):



Surdex Cessna 441 (Conquest) Aircraft and Installed Digital Sensor (DMC)

Provided contracting services to FSA and other contributing partners for one meter digital orthoimagery covering 2,064 counties (2,089,886 square miles) in 32 states. Awarded NAIP contract task orders for a total value of \$29,903,405.91. Approximately \$7.093 million was contributed by state and federal agencies through partnership agreements, and the balance of \$22.810 million funded by FSA. A total administrative charge of \$38,217.23 was assessed to partners requesting post-contract 4-band upgrades. Imagery was acquired using both precision mapping film cameras (10%) and large format digital cameras (90%).



2. Resource Aerial Photography Contracts:

Provided contracting services for a total of 46,623 square miles of aerial photography for the Forest Service (USFS) and Natural Resources Conservation Service (NRCS) for a total value of \$1,637,396.66. A combined total administrative charge of \$127,692.53 was assessed. Contracted 3 project areas covering 7,334 square miles of Alaska ortho-imagery, 6 project areas covering 29,588 square miles of digital aerial photography for western national forests, and 9 project areas covering 9,701 square miles of film based resource aerial photography.

3. Small Area Contracts (SAC):

Provided contracting services to NRCS to acquire small area aerial photography and related services for 80,916 sites for the NRI and WRP programs in Hawaii, Puerto Rico, and the 48 CONUS states. Also contracted a digital pilot project for aid in determining future directions of the program. This was the fifth and last year of a 5-year IDIQ contract with a FY2009 total contract value of \$7,688,584.21. A combined total administrative charge of \$230,507.53 was assessed.



4. APFO, WDC & NAIP Information Technology (IT) Contracts:

Provided contract authority and procurement services for the purchase of computer hardware, software and other related equipment, and maintenance agreements. APFO IT contracts amounted to \$1,162,210.22, Washington DC requested \$978,388.51 in IT purchases, and purchases to support the NAIP archive and distribution amounted to \$1,317,894.21, for a grand total amount of \$3,458,492.94 expended.

5. Small Business Concerns Program

The contracting section solicited sources for program requirements under a 100% Set-aside for Small Business Concerns where applicable. This resulted in Small Business Concerns receiving 31% of the overall total contract dollar amount, with Large Business Concerns receiving 56% and North American Free Trade Agreement (NAFTA) Business Concerns receiving 13%.

Contract Program	Small Business	Large Business	NAFTA Business	Program Totals
NAIP Contracts	14%	43%	13%	70%
Resource Contracts	2%	2%	N/A	4%
SAC Contracts	10%	8%	N/A	18%
IT/Other Contracts	5%	3%	N/A	8%
ALL CONTRACTS	31%	56%	13%	100%

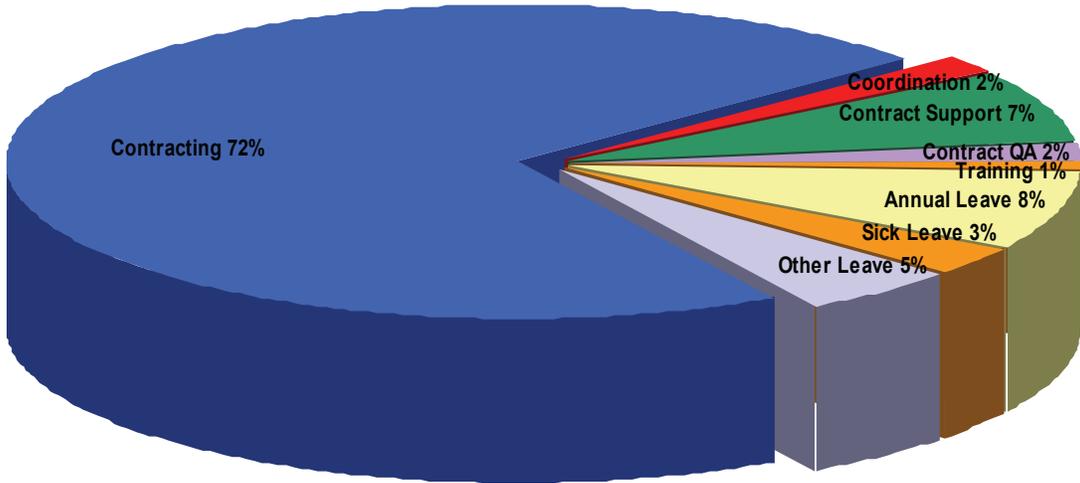
6. Support Activities

Members of the contracting staff participated in leadership roles in national programs including Co-Chair of the Imagery for the Nation (IFTN) Contract Working Group, Chair of the Acquisition Management Subcommittee for the National Digital Orthoimagery Program (NDOP), and the FSA/APFO representative for the Inter-Agency Digital Imagery Working Group (IADIWG).

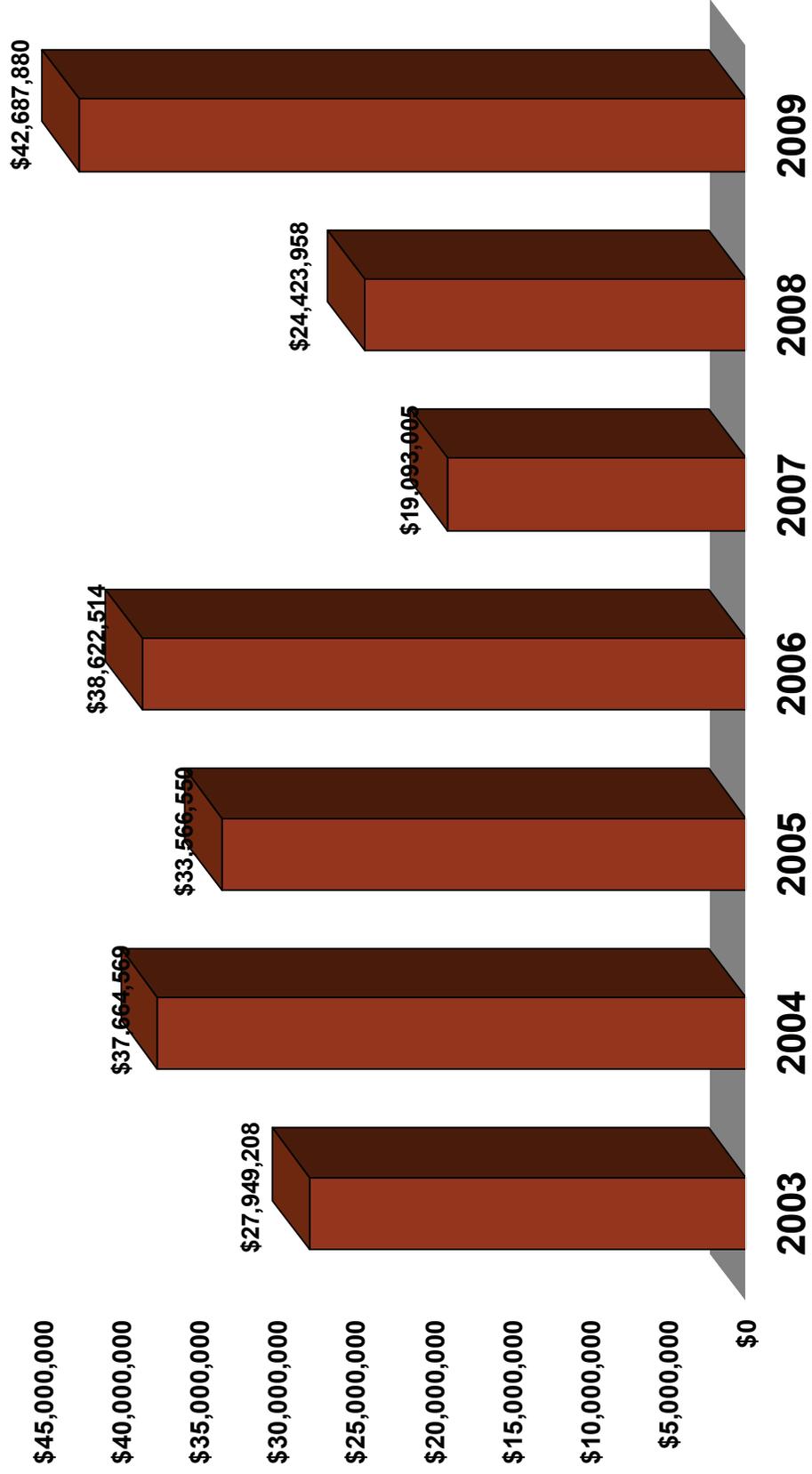
7. Transition to Direct Digital Acquisition

In FY2009 the Forest Service and NRCS requested APFO's contracting section to acquire 9 large resource projects utilizing digital cameras to provide a more versatile product. Through continued research and experience, the contracting section has developed a digital imagery procurement program by providing standard specifications and products to satisfy a variety of customer requirements.

FY2009 Contracting Section Activity Report

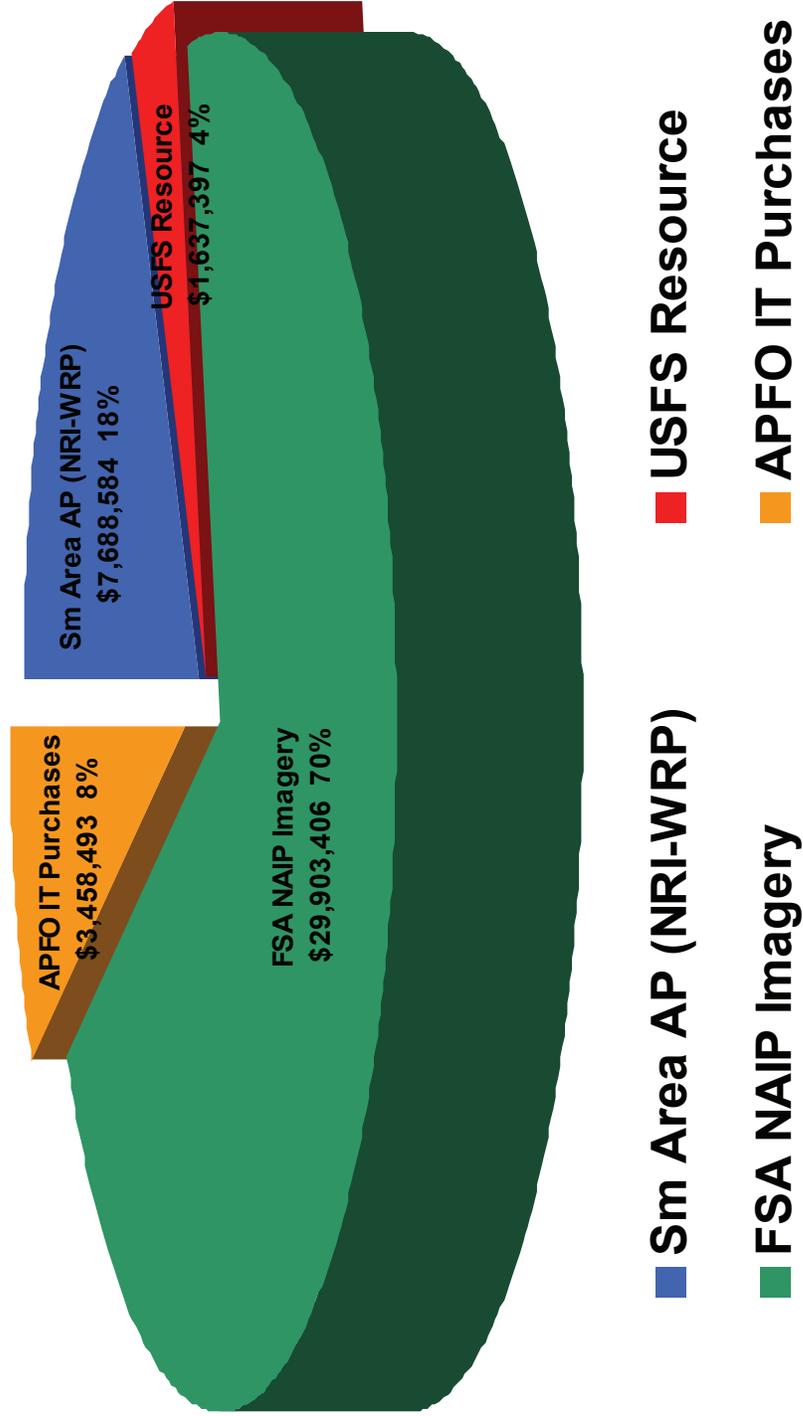


History of APFO Contract Award Totals

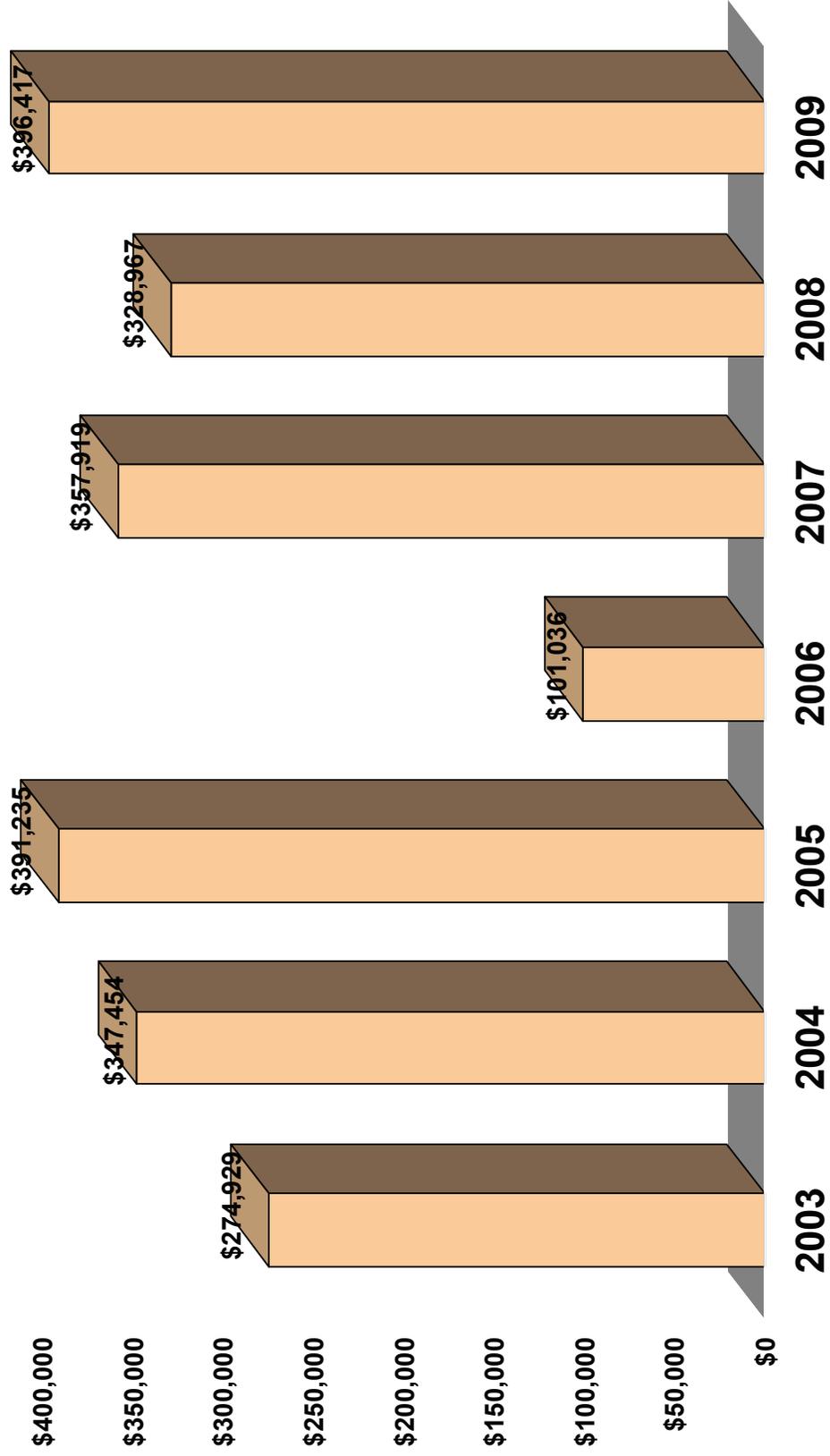


FY 2009 CONTRACTS

Total Amount Awarded: \$42,687,880

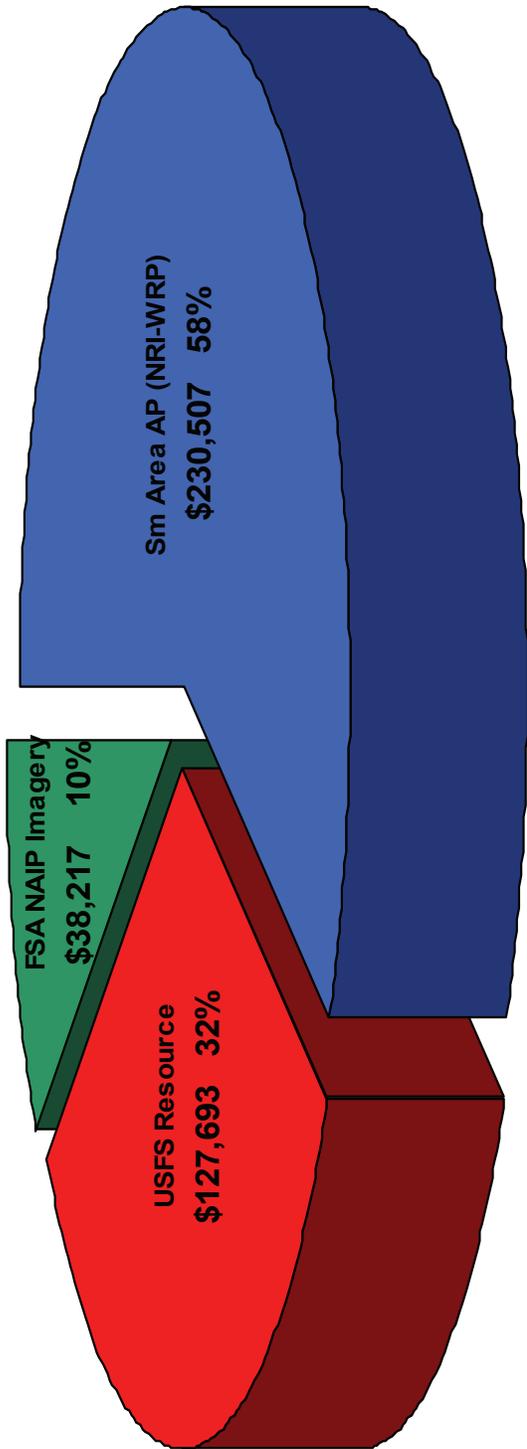


History of APFO Administrative Charge Totals



FY 2009 ADMINISTRATIVE CHARGES

Total Revenue: \$396,417.29



- Sm Area AP (NRI-WRP)
- USFS Resource
- FSA NAIP Imagery

GEOSPATIAL SERVICES BRANCH

GEOSPATIAL SERVICES SECTION

[The Geospatial Services Section](#) is responsible for producing accurate and quality checked ortho imagery, from a variety of sources. Imagery is made available in soft and hardcopy formats to meet the needs of GIS implementation in support of FSA Service Centers. In addition, the Geospatial Services Section flight planned the acquisition of imagery for the NAIP 2009 year.

Cartographic features such as scales or legends accompany hardcopy digital products, thus enhancing usability. Responsibilities of the Geospatial Services Section include:

- County Index maps created with quarter quad overlays
- County, State, and National Status Maps containing geospatial information
- Special projects including ortho generation, compressed imagery production, color balancing of county imagery, and reformatting of imagery to meet FSA specifications.
- Detailed flight planning status maps by county and state
- National flight planning status map

Strategic Planning

Equipment, process improvements, and training were goals established and achieved to include:

Training

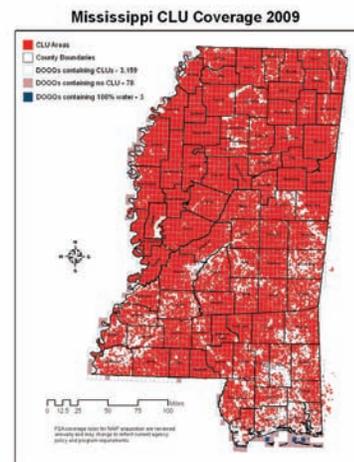
ESRI Geodatabase
2 Employees

ERDAS Imagine
3 Employees

Accomplishments

Production

- Digital Ortho Quarter Quads produced - 34
- County mosaics reprojected - 1
- Compressed county mosaics produced – 17 (14 – jp2000, 4-band)
- Compressed state mosaics produced - 2
- Compressed county mosaics unit corrections - 17
- Forest Service Digital Indices created – 16 (24 sheets)
- Reformatted county mosaics – 1 (4 parts)
- NAIP 2008 states flight planned – 32
- Resource indices reviewed - 1
- Status maps Produced - 200
- Georeferencing for DAFP projects (ongoing)



A typical Status Map showing Common Land Units (CLU)

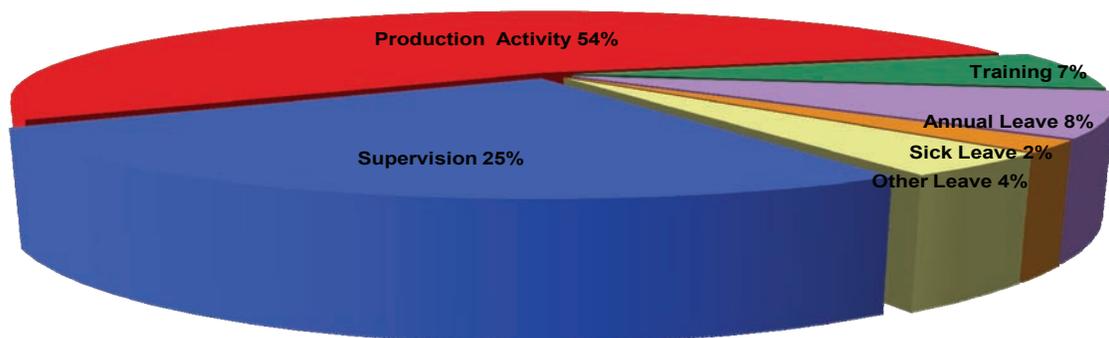
Geospatial Services Section Activity Report

Activity	Hours	% of Time
Annual Leave	630.50	8%
Sick Leave	161.25	2%
Other Leave	325.00	4%
Supervision	1814.00	25%
Training	530.00	7%
Production Activity	4033.75	54%
Total	7494.50	100%

Production Activity Defined

Activity	Total hours	% of Time
Resource Index Production	370.00	10%
Compressed County Mosaic Production	719.25	20%
Special Projects	293.50	8%
NAIP Flight Planning	506.50	14%
Resource Flight Planning	22.50	1%
Georeferencing Imagery	164.00	5%
Flight Exposure Planning	60.00	2%
Ortho Production	1388.50	40%
Total	3524.25	100%

Geospatial Services Section Activity Report

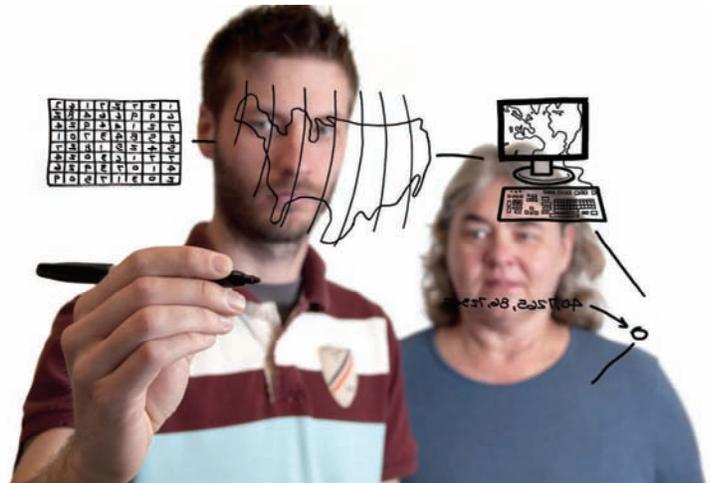


SERVICE CENTER SUPPORT SECTION

Mission Statement: *The Service Center Support Section provides technical and programmatic support and assistance on geospatial related issues to Farm Service Agency (FSA) Service Centers, State Offices, and Headquarters offices as well as to other government agencies and the public. The Service Center Support Section supports APFO and FSA in research and analysis, product enhancement, and in the development of processes and methodologies to improve efficiency in all aspects of geospatial business.*

Planning and Project Management

- ◆ Developed multiple GIS and remote sensing projects and product lines for FSA Administrator, highlighting changes in agriculture over time, utilizing historical and current aerial photography. Applied data analysis and georeferencing skills and techniques to raster and vector datasets to produce rich contextual pictures of how agricultural lands have changed over the last 50-60 years.
- ◆ 1AP – Continuing to revise this policy for APFO. The last update to this document was in 1996. A draft has been submitted, reviewed by Leadership and returned for changes. The review process, internal and external to APFO, is expected to span most of the next Fiscal Year.
- ◆ National Agriculture Imagery Program (NAIP) Support
 - * Developed and administered 2008 NAIP Survey: AP Notice, design, setup, distribution, analysis, and annual assessment report.
 - * Absolute Control Projects: 2009 control point acquisition for 32 NAIP States. Teaming with States and Federal Agencies to obtain points and supplemental data, database update and maintenance, and assistance with automation of the inspection process. The database is conservatively worth \$7.0M at present, developed through partnership and on a mostly gratis basis.
 - * Used \$200K in FY09 funding to purchase control points to fill spatial gaps in the database. Prepared technical specification for the contract.
 - * Updating NAIP Control Point Plan.
 - * Updating NAIP Flight Planning Plan.
 - * Enhancements to NAIP – Seamline shapefile implementation across all NAIP states and support for inspection methodology.
 - * Provided NAIP graphic for FGDC Annual Report.
 - * Updated NAIP Annual Acquisition Map (PDF) for Customer Service Section.



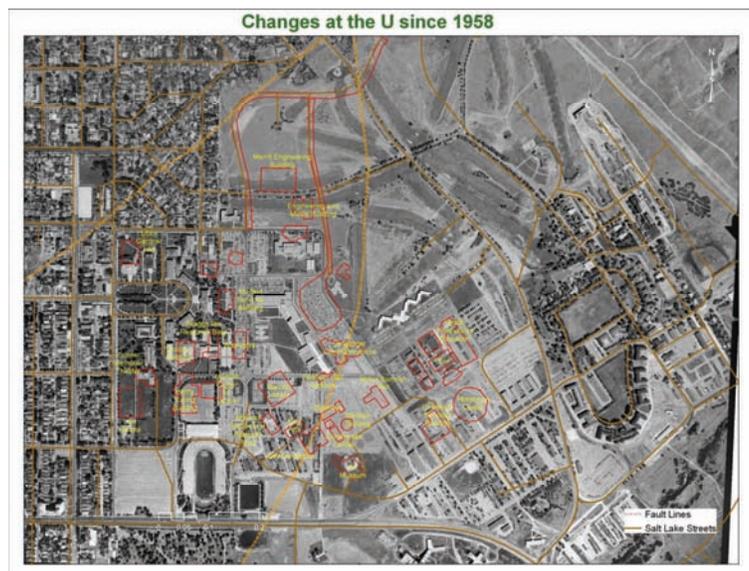
- * Updated NAIP Program page content on APFO Website.
 - * Produced NAIP Usage Study – a qualitative and quantitative synopsis of NAIP usage by FSA, other federal agencies, and the public.
 - * Updated 2009 NAIP contract specifications requiring projection in CCM header.
- ◆ Developed, distributed, consolidated responses, and produced report for the Imagery Requirements Survey, a multi Agency survey outlining requirements for imagery acquisition and use.
 - ◆ Leading project to address ingestion and archiving of varied datasets at APFO. The project consists of development of policy and approval processes, and a functional mechanism for the ingestion and archiving of varied datasets into the APFO infrastructure. The scope of this project has been expanded to encompass Geospatial Enterprise Datacenter (GeoEDC) status. Local policy and approval process is in place; the technical solution is pending.
 - ◆ Assisted on digital resource photography projects at APFO, consisting of a complex mix of new customer requirements and diverse deliverables.
 - * Evaluated proposals for 5-7 digital resource contracts.
 - * Assisted in development of contract specifications.
 - * Evaluated new camera system.
 - * Provided maps for insertion into contract.
 - * Designed and/or reviewed several metadata templates.
 - ◆ Information Sheets: updated one Information Sheet on APFO website, and created new Information Sheet for remote sensing.
 - ◆ Participated in Geospatial Enterprise Data Center (GeoEDC) and Centers of Excellence (COE) Groups. Lead 2 multi-Agency subgroups: Quality Control and Functions to Stakeholders.
 - ◆ Worked with contractor to develop custom ERDAS Imagine training for 12 APFO employees. Connected FSA State Office GIS Specialist with access to ERDAS 9.2 and 9.3 licenses at APFO.
 - ◆ Created custom print template for print requests with basic color choices, display look, and ordering options for APFO Customer Service.
 - ◆ Developed specifications and process steps for the Utah Historical Project, for georeferencing and ortho production.
 - ◆ Provided Quarter Quad (QQ) coverage for Washington DC based on North Dakota and Minnesota submittals for 2009 Red River Floods.

Research and Analysis

- ◆ Leading NAIP High Resolution Impact Study. This study will outline the programmatic and technical impacts of potentially moving NAIP to a higher spatial resolution deliverable.
- ◆ Evaluated current and potential NASA World Wind functionalities. Tracked progress of NASA implementing NAIP on World Wind, and ensuring NASA meets requirements of dual Agency understanding.
- ◆ Reviewed alternate methods for inspecting horizontal accuracy of imagery to ensure APFO methods are in line with other organizations and national standards.
- ◆ Researched methods of using and processing Band Sequential (BSQ) files in ArcGIS for FSA North Dakota.
- ◆ JPEG 2000 (JP2) Team – Lead team to assist in overcoming issues with the JP2 format. Team is comprised of members of APFO and the 6 prime NAIP Contractors.
- ◆ Researched the Geospatial Data Gateway raster clip/ship tool, support for and possible issues with the tool from the FSA and public perspective.
- ◆ Created Absolute Horizontal Accuracy Study and 2008 Control Point Projects Summary, comparing horizontal accuracy of NAIP to Mosaicked Digital Ortho Quad (MDOQ) products in a single state.
- ◆ Researched availability of Digital Elevation Model (DEM) along the Canadian and Mexican Borders.

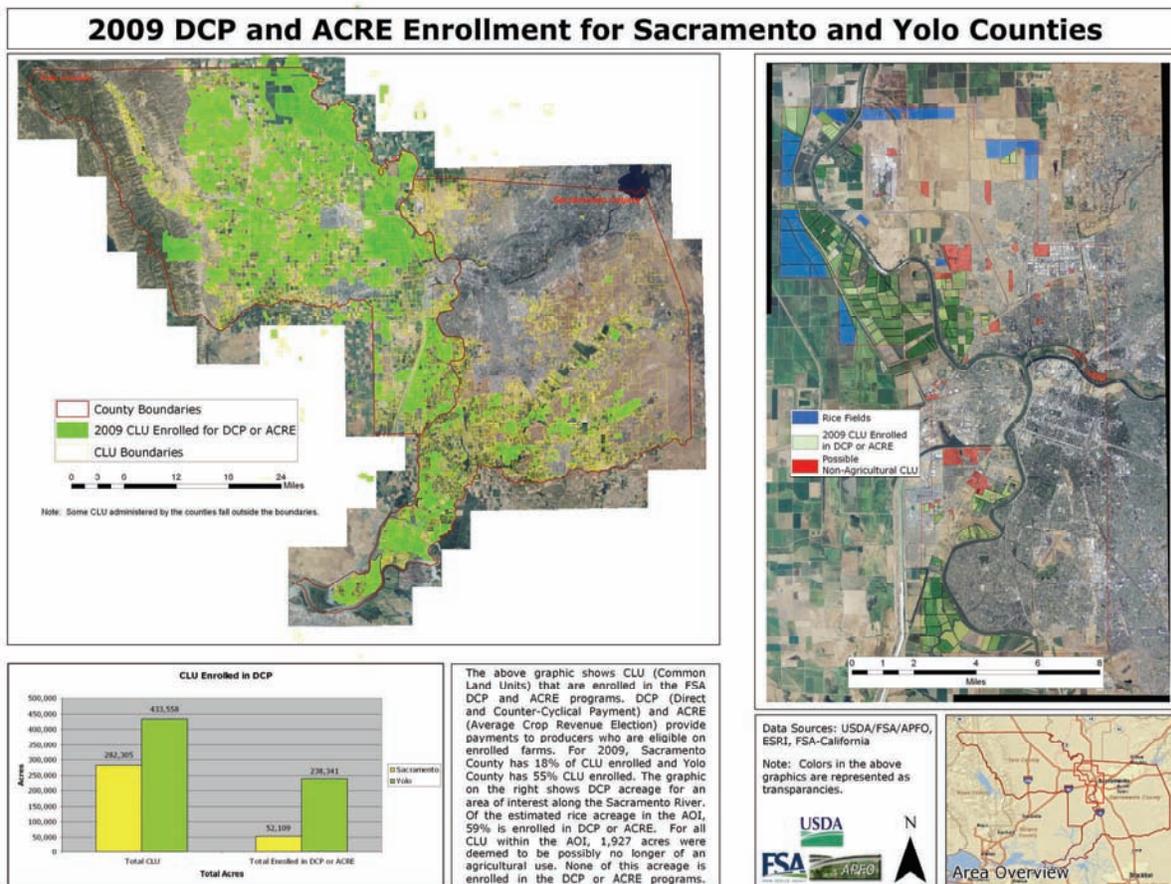
Team Representation, Presentations, and Training Provided

- ◆ Presentations on various subjects, from historical imagery to NAIP at:
 - * Southwest GIS Users Group (SWUG)
 - * ESRI International Users Conference
 - * National Digital Orthophoto Program (NDOP)



Historical Imagery Depicting Changes at University of Utah since 1958

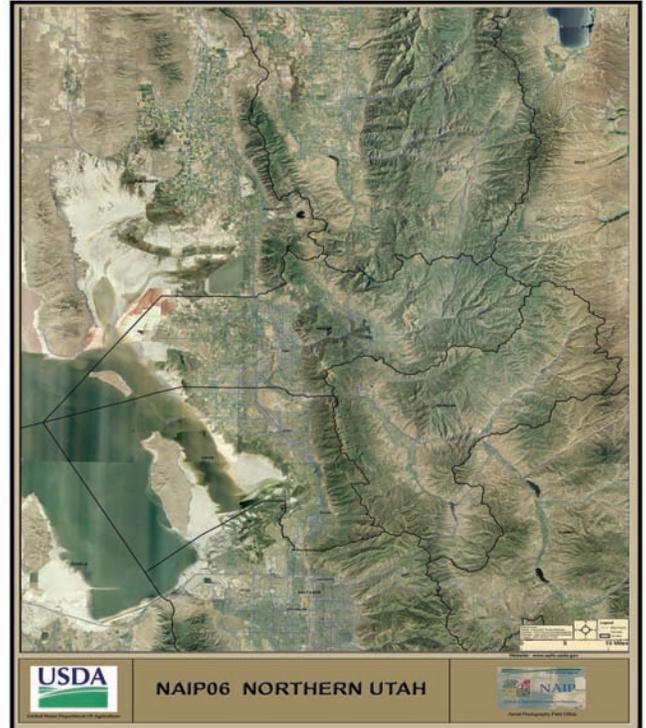
- * American Society of Photogrammetry and Remote Sensing (ASPRS)
- * Utah GIS Day
- * ESRI Federal Users Conference
- * Risk Management Agency (RMA) Senior Specialists Meeting
- * Illinois GIS Association (ILGISA)
- * Utah Geographic Information Council (UGIC)
- * Western Association of Map Libraries
- * NDOP Technical Subcommittee and Inter-Agency Digital Imagery Working Group (IADIWIG) meetings held at APFO
- * Utah Valley University
- * Adopt-a-School Program



CLU (Common Land Units) enrolled in the FSA DCP (Direct & Counter Cyclical Payment) and ACRE (Average Crop Revenue Election) provide payments to producers who are eligible on enrolled farms

- ◆ Provided supporting documentation for:
 - * Ohio GIS Conference
 - * World Agriculture Exposition
 - * California GIS Conference

- ◆ Provided training for:
 - * APFO QA on absolute control
 - * APFO QA on seamline inspection
 - * Representation on (active teams):
 - NDEP
 - Ingest/Archive Team
 - IFTN Technical Plan Working Group
 - FGDC Cadastral Subcommittee
 - NAIP Team
 - NDOP Tech Subcommittee
 - GDMT
 - IADIWG
 - Tech Manual Team for Photo Control Inspection
 - Aerial Observer
 - CFC Project Lead (2009)
 - EA Committee
 - Safety Team
 - Green Team
 - Community Education Teams (Salt Lake Community College and Utah Coalition for Geographic Information Systems Education)



Custom Data & Digital Cartographic Work Provided

- ◆ Produced 11 custom cartographic products, which included georeferenced and ortho images, vector overlays, elevation, annotation and custom layouts
- ◆ Repaired projections on several Resource Photography mosaics
- ◆ Updated map displaying years of imagery represented by the APFO imagery archive
- ◆ Updated map for APFO Customer Service outlining all years of NAIP
- ◆ Created statewide exposure index for State of Minnesota
- ◆ Created 3D model and fly through for USDA Chief Information Officer
- ◆ Created statewide mosaics for Alabama (ADECA)
- ◆ Created NRI/WRP pilot site maps for APFO Contracting

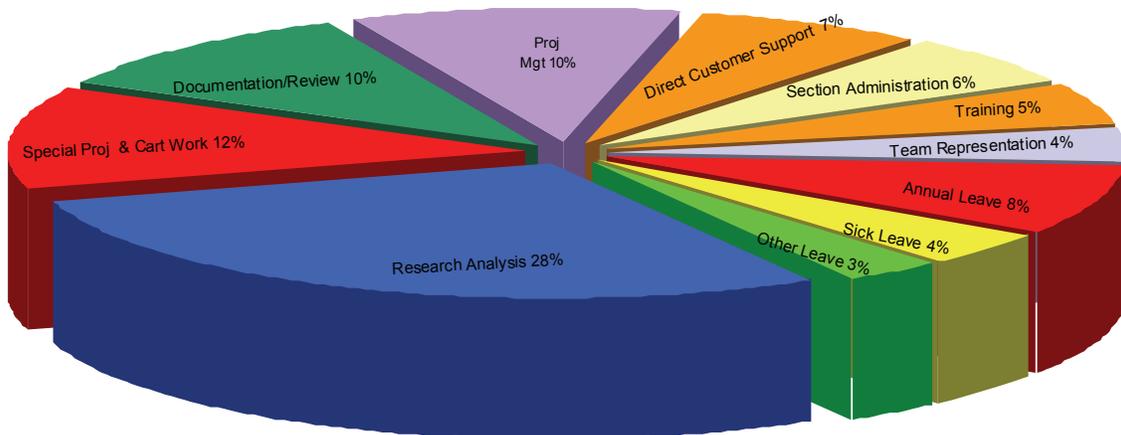
Customer Support

Fielded and answered several hundred customer support calls and emails from APFO, FSA, SCA, federal & local government, private business, and the general public.

Geospatial Service Center Support Report

Activity	% of Time
Research and Analysis	28%
Special Projects & Cartographic Work	12%
Documentation/Review	10%
Project Management	10%
Direct Customer Support	7%
Section Administration	6%
Training (Trainer & Trainee)	5%
Team Representation	4%
Imagery Evaluation	3%
Annual Leave	8%
Sick Leave (including FFLA)	4%
Other Leave	3%
Total	100%

Service Center Support Section Activity Report



OPERATIONS BRANCH

Mission Statement: *To insure the Aerial Photography Field Office operates in an efficient, cost effective manner by providing resources necessary for the production of aerial imagery products*

Procurement

APFO's Operations Branch, Administrative staff provided maximum, practicable opportunities in acquisitions to small business, small disadvantaged business, and woman owned small business concerns for FY 09.

Procurement for resources has been through the use of GSA SmartPay Purchase Cards and the Integrated Acquisition System (IAS).

Human Resources

APFO's Operation Branch, Personnel and HR Management worked closely with the Kansas City Human Resource (KCHR) to provide a comprehensive program of personnel services to the APFO employees throughout FY 2009.

FY 09 Personnel statistics include:

Personnel Actions Processed - 30	Performance Awards - 46
Training Requests - 12	New Hires - 3
Promotions - 7	Terminations - 3
Spot Awards - 71	

Equal Employment Opportunity / Civil Rights / Outreach / Other

Adopt a School – Hillsdale Elementary:

GIS Days Participation
Chapters of Hope - \$270 in Library Books Donated
School Supply Drive – Various School Supplies
Donated recyclable plastic bags for field trip fund raiser

Hispanic Heritage Month:

Poster Recognition
Salsa Contest
Lunch-n-Learn Video

Disability Awareness Month:

Poster Recognition

25th Annual Utah Women's Conference:

Employees Attended October 26, 2009

Native American Heritage Month:

Banner Recognition

Veteran's Day:

Poster Recognition

Martin Luther King, Jr. Day:

Poster Recognition

Inauguration Day Celebration

Black History Month:

Poster Recognition

Women's History Month:

Banner Recognition

Take Our Daughters and Sons to Work Day:

Employee/Family participation

Asian/Pacific Heritage Month:

Banner Recognition

Sub-for-Santa:

- ◆ \$1,346.60 from fund raisers
- ◆ Provided Christmas for four families,
- ◆ Clothing donations to homeless shelter
- ◆ Utah Food Bank



Barbara Bush



APFO employees wrapping Sub-for-Santa gifts

Breast Cancer Awareness Month:

Pink Ribbons, Yoplait Yogurt Lids

Domestic Violence Awareness Month:

Purple Ribbons

Minimize Cost and Ecologic Impact:

Maximized use of recycled packaging products

SAFETY AND HEALTH

Upon reestablishing APFO's Safety Committee, consisting of 1 employee from each Branch, an Automated External Defibrillator, CPR training manikins, automated first aid prompts, books and pamphlets were purchased.

A current floor plan was created to include locations of all fire extinguishers, first aid kits, emergency pull switches and emergency eye wash stations.

CPR and First Aid Training for FY 2009 include:

- CPR – 8 classes, 32 hours, 25 employees
- First Aid – 6 classes, 24 hours, 17 employees



First Aid Training Session

GOING GREEN

As a result of an Administrative Specialist's concern to minimize APFO's environmental impact, a Green Team has been established to implement sustainable practices for:

- Waste prevention and recycling
- Acquisition and material usage
- Electronic stewardship

Going green makes good business sense. As natural resources become more scarce and costly, while customers and employees are increasingly environmentally conscious. Even at the most basic level, programs that reduce, reuse and recycle frequently lead to cost savings.



CUSTOMER SERVICE

Mission Statement: *To serve each customer as their primary source of technical information concerning USDA related aerial photography, digital imagery, and common land unit data of the United States and its territories. To account for and reconcile funds from all government agencies and the public.*

As part of the Operations Branch, the Customer Service Section (CSS) is responsible for the receipt, preparation, and releasing of work orders and coverage requests for aerial photography, digital imagery, and common land unit products and services. CSS is the liaison for the Aerial Photography Field Office (APFO) to other government agencies and the public. Maintains and monitors all fiscal activity dealing with the sale of aerial photography and digital imagery.

Coverage research is performed utilizing Geographic Information System (GIS) tools to identify historical imagery and attributes needed for custom digital photographs. The CSS updates GIS content for maintaining the National Agriculture Imagery Program (NAIP) Interactive Coverage Status Map and downloadable quarter quad and film center shape files on the APFO website. Assists customers with the NAIP Coverage Viewer and ordering of NAIP products.



Selecting coverage from Photo Index

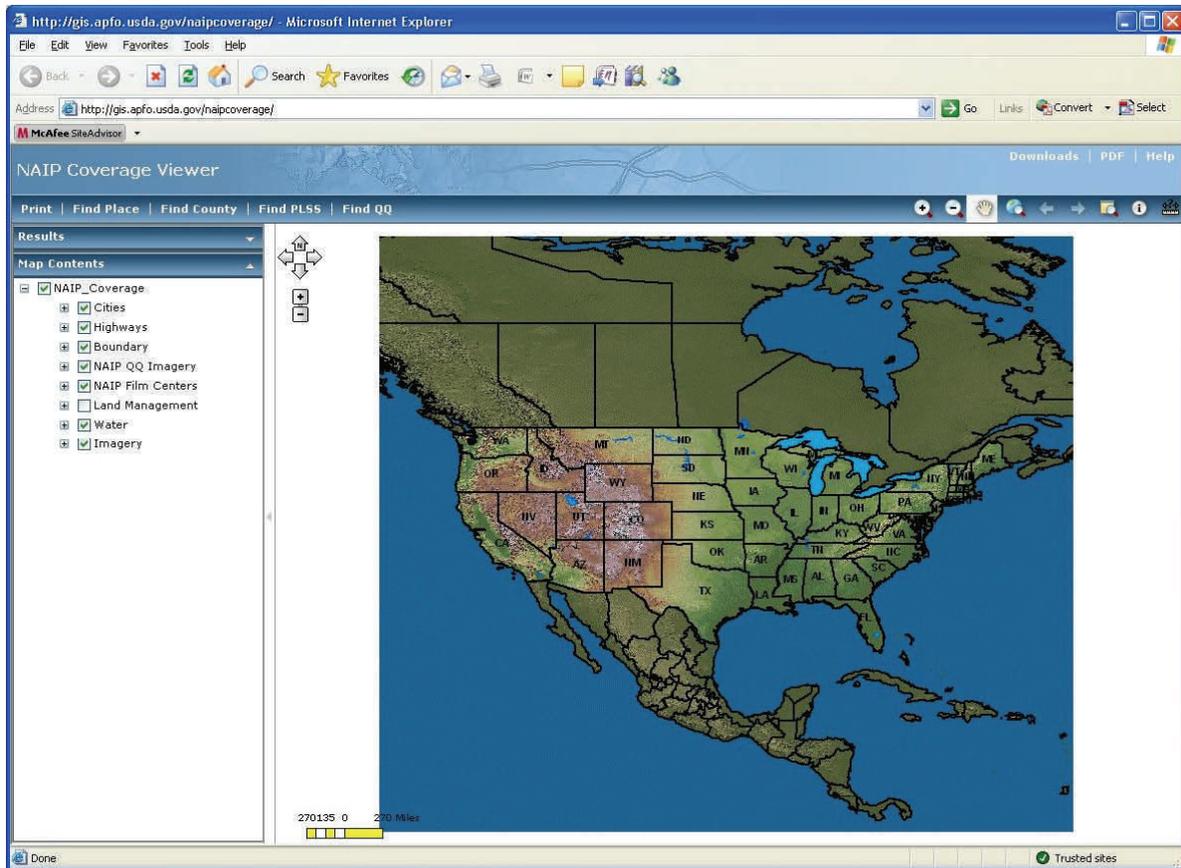
Major Work Activities Performed

Activity	Number of Activities
Work Orders Processed	1,800
APFO Internal Work Orders Processed	226
Coverage Requests	1,426
Walk-In Customers	347
Telephone Calls	6,335
Catalog Registers	1,118
Billings and Refunds	153
Written Correspondence	6,423
GIS Projects/Searches	328
Total	18,156

Accomplishments & Noteworthy Activities

NAIP Coverage Viewer & Web Service - The APFO has replaced the NAIP 2006 Viewer with the NAIP Coverage Viewer which includes search tools and detailed information:

<http://gis.apfo.usda.gov/naipcoverage>



This website was developed from a project created for researching NAIP coverage a few years ago. The Interactive NAIP Coverage Status Map was a precursor to this website which now cross references each other. It's an excellent tool that can be used by government offices and the public to identify NAIP quarter quad and film coverage for placing an order or for locating the date of an image. There is also an ArcMap web service available.

Acronyms & Definitions – Created three documents to explain the various acronyms and general and technical terms used to assist APFO staff. Posted the general definitions on the APFO website.

New Employees – Hired two Aerial Imagery Specialists at the beginning of the fiscal year.

Interactive NAIP Status Map – Updated map to include format for JPEG2000 mosaics an 4 band imagery. Included two more methods to determine year and formatting information. Includes link to the NAIP Coverage Viewer and references the web service address for an ArcIS Server connection.

NAIP & Resource Imagery Status Maps – Initiated effort to include contact information on all status maps posted on the APFO website.

Leaflet 571 – Updated APFO’s brochure. Available from APFO’s website.

APFO Catalog Listing – Major changes to the film and digital catalog listings were made which includes links to the order form, price list, FIPS codes, census, and the FSA and Forest Service office information. Includes entire state and full county gigabyte file sizes for NAIP products to determine cost from the price list.

Microfiche Scanner – Acquired a microfiche scanner to confirm coverage and selection of photo identification numbers for customers via e-mail. Scans of the photo and flight line indices improve a timely release of orders into production. It will also be used as a backup to the Index Scan Project where original indices are missing and microfiche is available.



Archivist Reviewing Mylar Index

Utah Historical Film Scan Project –The goal of the historical film scan project of five Utah counties is to eliminate hands on use and to prevent possible damage or scratching of the original film by walk-in customers. Digital imagery will replace viewing of film. Update: Completed 2,659 scans out of 7,735; created 35 quarter quads and 1 compressed county mosaic.

USDA Data Gateway Media Orders – APFO has taken responsibility for collecting monies for the gateway media orders. Collected \$3,200.00 for 17 orders.

GIS Processes – CSS utilizes EarthWhere, a Spatial Data Provisioning (SDP) tool, to conduct NAIP QQ searches and order processing. A dual SDP and Work Order Entry System (WOES) are used for order processing and delivering QQ’s on CD or DVD. Total GIS Project Searches (manual GIS searches) – 328

NAIP Coverage Maps and Shapefiles – Updated available shape file downloads from the APFO website for QQ coverage. Maps will also be updated and integrated with NAIP Film (where available) photo center coverage and shapefiles during the upcoming fiscal year.

GIS Research Tools - Two internal web map services were established to research NAIP QQ (NAIP Coverage) and Film Photo Centers (NAIP Film Search) last year. These two items are now combined and available as an external website and web service known as the NAIP Coverage Viewer. A more extensive version is used internally for detailed coverage selections.

FSA and Google Memorandum of Understanding – Initiated agreement between FSA and Google to provide NAIP imagery for attributing “USDA Farm Service Agency” on their aerial imagery websites.

Detailed Activity – One employee involved with the Photo Index Scan inspection. One employee involved with EEO Advisory Committee, Aerial Observer Newsletter, and Awards Committee activities. One employee participates in the APFO Employee Association.

Training – One employee represented APFO at the Association of American Geographers and ESRI annual conferences. Same employee provided basic training to fellow CSS employees on the new GIS research tool.

Total Dollar Volume \$905,569.68 - Includes all fiscal activity associated with the sale of aerial photography and digital imagery.

Major Categories	Amount
Collections Receipts	\$121,578.50
Credit Cards Receipts	\$259,196.50
Federal Bills	\$489,081.00
Flying Contracts/Products	\$ 60,260.00
Non-Federal Bills	\$ 80,056.00
Miscellaneous	\$ (232.00)

Fiscal Year Statistical Comparison	
Fiscal Year 2009	303 Units per Order
Fiscal Year 2008	231 Units per Order
Fiscal Year 2007	262 Units per Order



The evolution from traditional microfiche to modern CDs

FY09 Customers of Digital Photography Products and Services

Agency	% of Requests	Units	% of Revenue	Dollar Value
FSA	4	15,106	2	\$ 16,961.00
FS	5	21,695	7	\$ 47,725.00
NRCS	1	3,451	1	\$ 6,164.00
NASS	1	56	1	\$ 1,086.00
GS	12	49,115	12	\$ 76,899.00
Other Federal	65	263,105	55	\$ 363,892.00
State Agencies	1	6,599	7	\$ 48,610.00
Public	11	42,198	15	\$ 102,473.00
Totals	100	401,325	100	\$ 663,810.00

FY09 Customers of Aerial Imagery Products and Services

Agency	% of Requests	Units	% of Revenue	Dollar Value
FSA	0	0	0	\$ 0.00
FS	46	15,736	33	\$ 82,600.00
NRCS	0	0	0	\$ 0.00
NASS	0	0	0	\$ 0.00
GS	1	103	1	\$ 1,362.00
Other Federal	28	9,749	14	\$ 35,687.00
State Agencies	12	4,032	22	\$ 56,214.00
Public	13	4,775	30	\$ 77,258.50
Totals	100	34,395	100	\$ 253,121.50

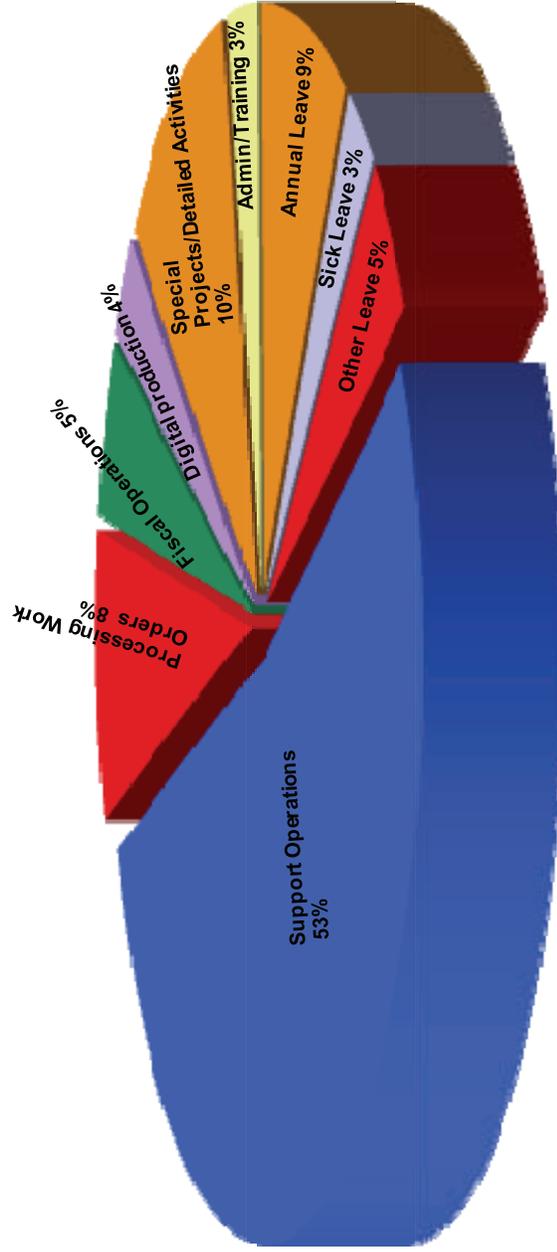
Sales Activity Report

Activity Time	Total Hours	% of
Annual Leave	1146	8.1
Sick Leave	486	3.4
Other Leave	528	3.7
Section Administration	175	1.2
Supervision	1106	7.8
Training	528	3.7
Processing Work Orders	1071	7.6
Fiscal Operations	479	3.3
GIS Operations	204	1.4
Special Projects	309	2.1
Detailed Activity	2025	14.3
Support Operations	6155	43.4
Totals	14,212	100



A variety of media options

Customer Services Section Activity Report

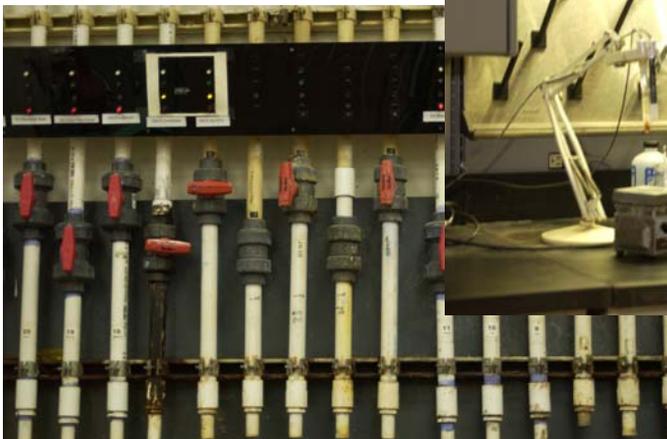


PRODUCTION SERVICES BRANCH

Mission Statement: *To provide Quality in the form of Value, Service and Customer Conformance. Working in unity with our customers in order to meet their expectations. Providing the highest quality B&W and Color aerial photographic and digital products available.*

Production Services Branch

The Photo/Imaging Branch is responsible for generating color and black and white aerial photographic products and digital imagery for various customers, including FSA, NRCS, and Forest Service, as well as other Federal and non federal agencies and the public. The Branch is also responsible for chemical mixing, electronic and mechanical maintenance of all production related equipment.



Chemical supply line feeds photographic processing solutions to chemical replenishing system



Photographer performing quality analysis of photographic solution

December 2008 an external candidate was hired to fill a permanent full time electronics technician vacancy, the Branch Chief established an ongoing training and professional development program for the new hire in support of the Branch mission.

Branch employees continued to inspect the deliverables for the APFO Historical Photo Index contract from FY07, the Photo Section spent 1124 hours performing 7,466 index inspections and the Scanning Section documented 778.5 hours inspecting 5,733 photo index scans delivered during FY09.

The U.S. Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center film duplicating and scanning project of National High Altitude Photography (NHAP) program film saw the requested 19 black and white rolls duplicated and shipped, and 7,579 of National Aerial Photography Program (NAPP) color infrared negative and positive film images scanned with the project approximately 25% complete.

Custom digital printing products continued to set the bar higher for the year, new adaptations such as time-series imagery layouts and geospatially enhanced vector data embedded on National Agriculture Imagery Program digital images provided our customers increased value with hardcopy products. Continued integration of digital technology will push the current product capability limits and allow APFO to explore new product and services.

Technical Support Staff

Installed three new digital scanners (Wehrli RM6) that were tested, calibrated and put into production.

Removed all equipment from the scanning section (scanners and all support equipment) in preparation of the static mat, carpet removal and floor tile replacement. All equipment was reinstalled, tested and recalibrated with a minimum of down time.

APFO security section support, installed or repaired numerous security devices; (flat panel TV, multiplexer, camera's, wiring, key pad's, telephone's and related security equipment).

Provided technical support for the Technical Services Branch, trouble shooting various IT support devices, (power supplies, tape drives, air filters, data cable installation and trouble shooting, VOIP telephone service installations).

Rebuilt tested and installed new batteries on two older UPS that were installed on the Durst digital printers to help prevent them from power outages, sags and spikes that have been common to both machines.

Measured and documented power requirements on all the digital equipment that was used for the electrical bid package that went out for the isolation and protection of the new digital equipment.

Installed tested and calibrated the new automated roll paper cutter (Fotoba Digitrim). Also installed and applied the Fotoba reference cut marks to the two Durst digital printers to expedite digital print production.

Rebuilt the old Hydro mixer in Chem Mix for improved photographic chemical mixing and transfer to the chemical storage facility.

Coordinated the preventive maintenance rebuilds of five processors located in the in the production photo branch.

Participated in the correction of safety infractions found throughout the Photo branch and APFO. Assisted in the listing of chemicals in the flammable storage locker and gathering MSDS sheets for stored chemicals.



Electronic Technician troubleshooting photographic equipment

Photography Section

Color, B&W, and digital images produced/hours: 52,592/5010

Color images/hours: 42,539/2153

B&W Products/hours: 9,556/2341

Digital Products/hours: 497/516

Color/B&W film products/hours: 1405/438

Color/B&W/digital paper products/hours: 51,187/4567

Most requested

Color paper product: 10" x 10" – 39,489

B&W paper product: 10" x 10" – 6,911

Scanning Section

Scans products/hours: 26,892/1931

Media products/hours: 509/268

Scanned originals

Color film images/hours: 15,610/1158

B&W film images/hours: 9,272/773

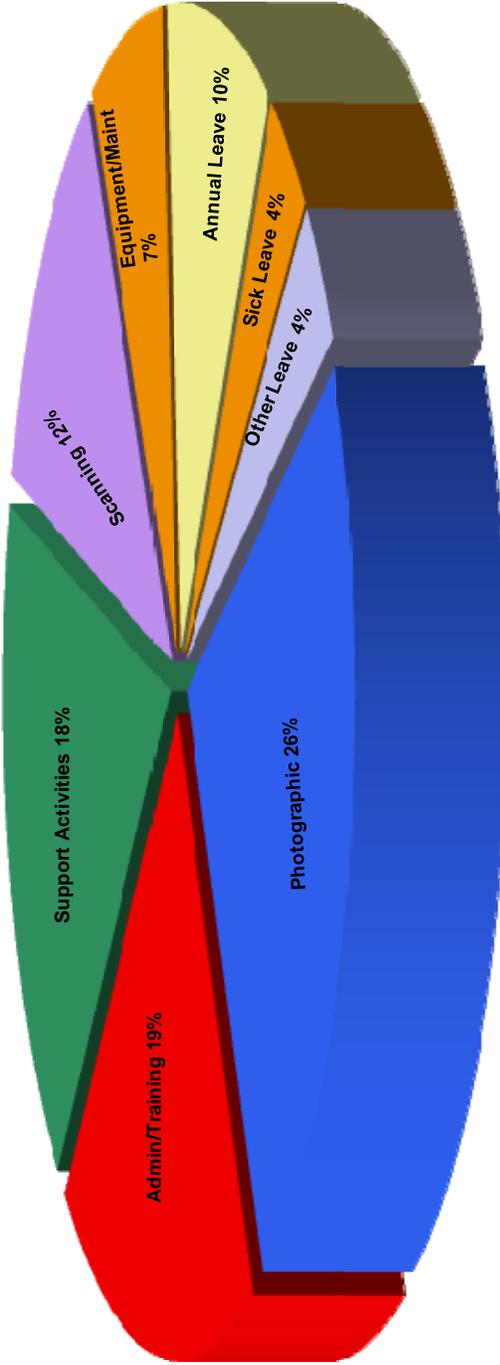


Photographer inspecting a roll of film prior to scanning and digitizing an image



Photographer feeds print paper into a digital printer

Production Services Branch Activity Report



QUALITY ASSURANCE

The Quality Assurance Branch is comprised of two inspection areas directly responsible for the quality assurance inspection, monitoring, and disseminating of imagery and geospatial data for all aerial film programs contracted. These include the National Agriculture Imagery Program (NAIP), Resource Aerial Photography, Common Land Unit (CLU) updates, National Resources Inventory (NRI) and Wetland Reserve Program (WRP), as well as APFO website update information including status maps and data for these programs. This branch also maintains the Service Center GIS priority (SCIT) and Catalog Listings.

The Branch is responsible for the Aerial Imagery film archive (Vault) and developed an Aerial Imagery Archivist position to monitor and maintain the use of aerial film and digital products taken from the vault.

APFO's Vault



Approximately 40 Space Saver Units



About 7 cans per shelf

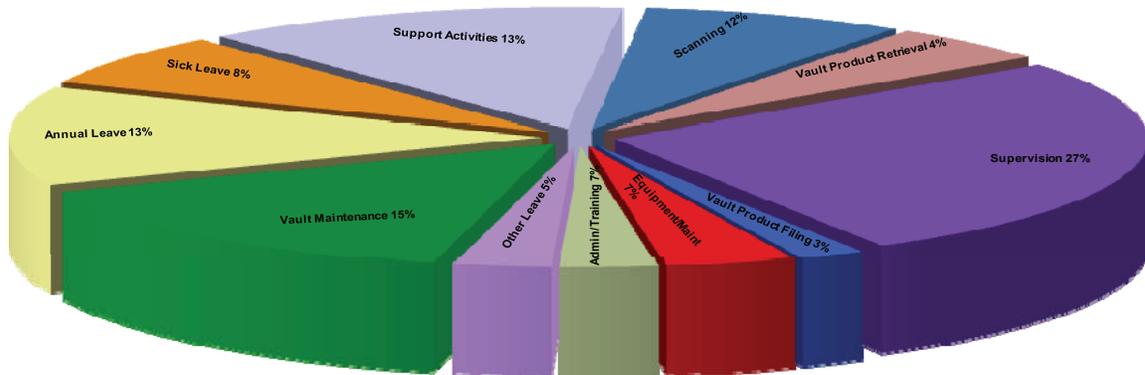
Project management provided for the Vault Index Project. The primary goal of this project is to accomplish the scanning of specified photo, line, and point index reference maps in their varied formats for purposes of preservation. Through this preservation effort, greater visibility of, and access to, historical imagery products will result. Inspection of 28,837 tiff, geo-tiff and enhanced shapefiles from scanned indexes was accomplished during the fiscal year. We have taken delivery of 100,588 products to date for this project.

The branch is transitioning in the Resource Imagery area to inspection of digital imagery projects. An inspection process has been developed for a digital imagery inspection of resource projects.

The branch is responsible for recording and disseminating all quality issues for the NAIP program and monitoring all NRCS Gateway customer problems. This involved the implementation of a sharepoint site for tracking and monitoring problems for all quality issues concerning the NAIP imagery.

QUALITY ASSURANCE BRANCH ACTIVITY REPORT

<u>Activity</u>	<u>Hours</u>	<u>% of Time</u>
Film Inspection	41	2
Vault Product Retrieval	104.25	4
Vault Product Filing	79.25	3
Vault Data Entry	86	3
Vault Maintenance	395	15
Support Activities	335.75	13
Admin/Training	174.5	7
Annual Leave	347.25	13
Sick Leave	199.5	8
Other Leave	119.5	5
Supervision	707.5	27
Total	2589.5	100



ORTHO IMAGERY INSPECTION SECTION

The strategic plan for the Quality Assurance Branch states that its emphasis is “Directly responsible for the oversight and management for inspection, monitoring, and disseminating of imagery and geospatial data for the National Agriculture Imagery Program (NAIP).”

The Ortho Imagery Inspection Section (OIS) continues to align our 500 day operational plan to that of the NAIP management plan. OIS planned, organized and successfully executed 9 major initiatives, along with the inspection of 1324 NAIP 08 and 556 NAIP 09 Compressed County Mosaics (CCM) and 83,665 NAIP 08 and 27,913 NAIP 09 Quarter Quads. In addition to the NAIP program, OIS inspected 97 scanned indexes for the Vault Index project.

Initiative #1: Maps: OIS invested 100 man-hours to develop uniform maps that displayed quality inspection results. Results: New map format is now used in part for our Consolidated Quality Inspection report.

Initiative #2: Seam Line shape file inspection: OIS invested 120 man-hours to develop inspection tools and processes needed to perform seam line shape file inspection. Results: OIS now performs seam line shape file inspection on all state projects.

Initiative #3: Luminosity Study: OIS invested 100 man-hours, to conduct an imagery luminosity study. Results: A cross-over from histogram Peak to Mean was instituted. Vendor feedback indicates a 95% percent improvement in processes stability.

Initiative #4: Natural Color / Color Infrared management study. OIS invested 3000 man hours studying the effects of histogrammic changes to color / color infrared imagery. This is an ongoing project that is planned to be conducted for the next few years.

Initiative #5: First Look inspection process: OIS invested 100 man-hours into a first look inspection process. Results: Our enhanced capabilities now expedite identification of image quality problems that require more in-depth analysis. An additional benefit of this process is that it enables faster distribution of funds to the vendor.



QA Specialist reviewing sample of NAIP imagery

Initiative #6: Develop a professional working relationship with vendors, with the goal of reducing the number of full state resubmittals due to gross quality errors. Results: OIIS has participated in several quality discussions/inspection process demonstrations during vendor visits. To date, we have not experienced any state wide resubmittals on 2009 data.

Initiative #7: Control point management: OIIS invested 60 man-hours into a comprehensive photo identifiable control point management plan.

Initiative #8: These studies will be incorporated into the NAIP management plan. Vendors will be briefed about the new changes.

Initiative #9: Team Building: OIIS invested 25 man-hours in a team building exercise comprised of volunteering for a Habitat for Humanity's project.

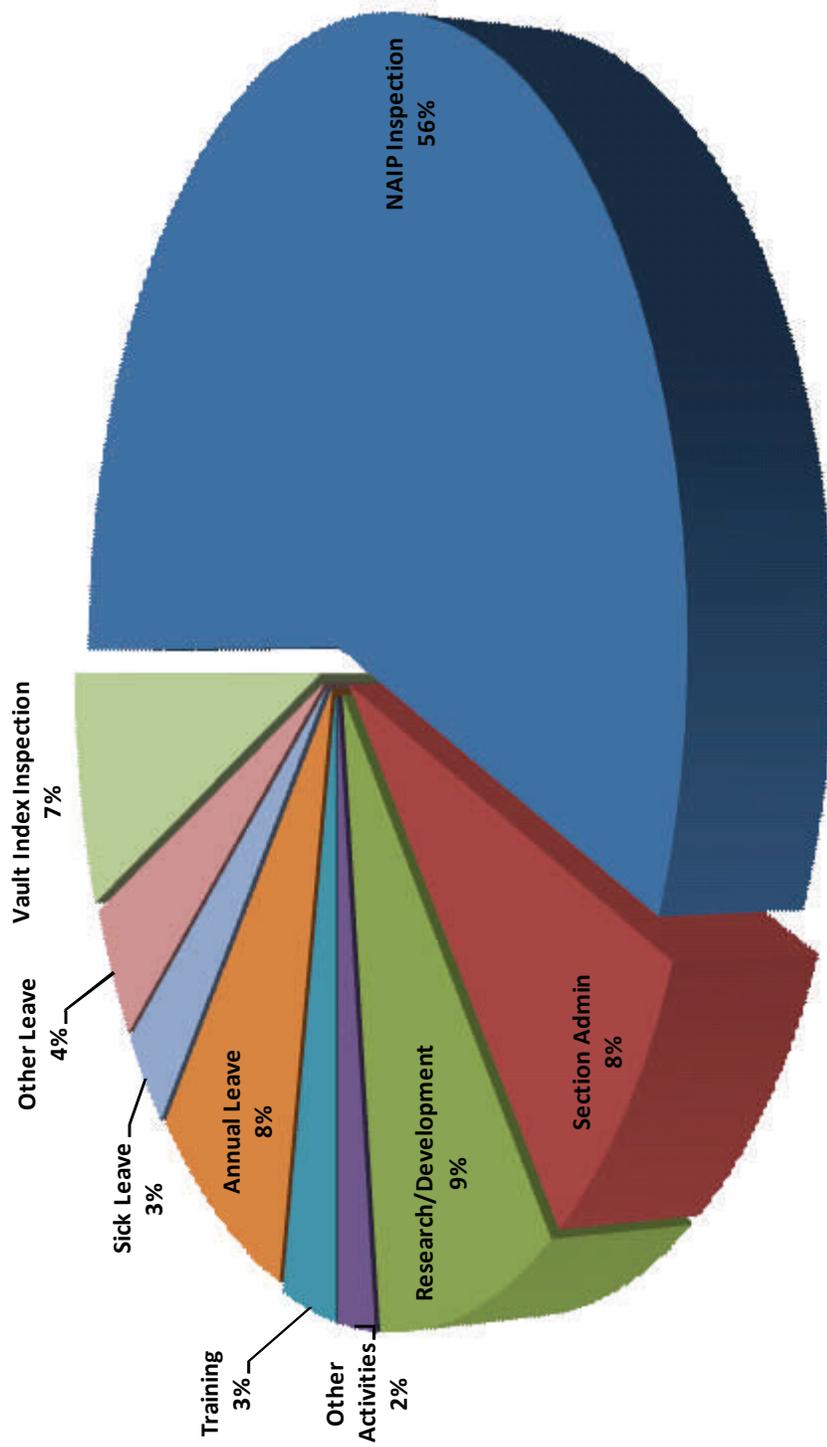


Quality Inspection Team at work for Habitat for Humanity

ORTHO IMAGERY INSPECTION SECTION ACTIVITY REPORT

<u>Activity</u>	<u>Hours</u>	<u>% of Time</u>
NAIP Inspection	14,535	56%
Vault Index Scan Inspection	1,817	7%
NAIP Research & Development	2,336	9%
Section Administration	1,077	8%
Other Section Activities	519	2%
Training	778	3%
Annual Leave	2,076	8%
Sick Leave	779	3%
Other Leave	1,038	4%
Total	25,955	100%

Ortho Imagery Inspection Services



RESOURCE IMAGERY INSPECTION SECTION

Mission Statement: *To assure customer needs are met by providing quality assurance inspection, monitoring, and disseminating of imagery and geospatial data for the Resource Aerial Photography, National Resources Inventory (NRI), Wetland Reserve Program (WRP) and Common Land Unit (CLU) digitizing. This section also maintains the Service Center GIS priority (SCIT) and Catalog Listings.*

Resource Aerial Photography

In FY09 the section provided flight planning for eight (8) film-based resource projects that covered 9,701 square miles (7,794 linear miles), 4,305 NRCS WRP sites and prepared six (6) digital imagery-based projects that covered 29,588 square miles, including the inspection of contractor submitted flight plans.

The section inspected ten (10) Resource projects covering 12,605 square miles to 100% completion and 46 DOQQ's of Alaska imagery.

Digital Imagery Inspection of five (5) Forest Service projects covering 18,395 square miles consisting of 38,149 images. Two (2) projects pending completion.

Inspected, cataloged and archived 111 rolls of Forest Service film and 126 rolls of NAIP film.



Quality Assurance Specialist viewing aerial photography through 3 dimensional stereoscope

National Resources Inventory (NRI)

2009 NRI CONUS sites/scans inspected: 64,426 sites and 55,723 scans

2008 NRI CONUS sites/scans inspected: 4,709 sites and 9,644 scans

Alaska 07 sites/scans/ortho's inspected: 53

Alaska 08 sites/scans/ortho's inspected: 49

Hawaii sites/scans inspected: 324

Puerto Rico sites/scans inspected: 450

Wetland Reserve Program (WRP)

2009 WRP CONUS sites/scans inspected: 8,146 sites and 7,744 scans

2008 WRP CONUS sites/scans inspected: 3,898 sites and 4,819 scans

Common Land Unit (CLU) Digitizing

Monitored the delivery of 13,394 units of updated CLU data from FSA County offices and released to IT for upload to the Data Gateway.

Other Section Accomplishments



Quality Assurance Specialists inspecting aerial imagery

Inspection of the Vault Index Scans, 772 hours were used to inspect 3,121 indexes from this project.

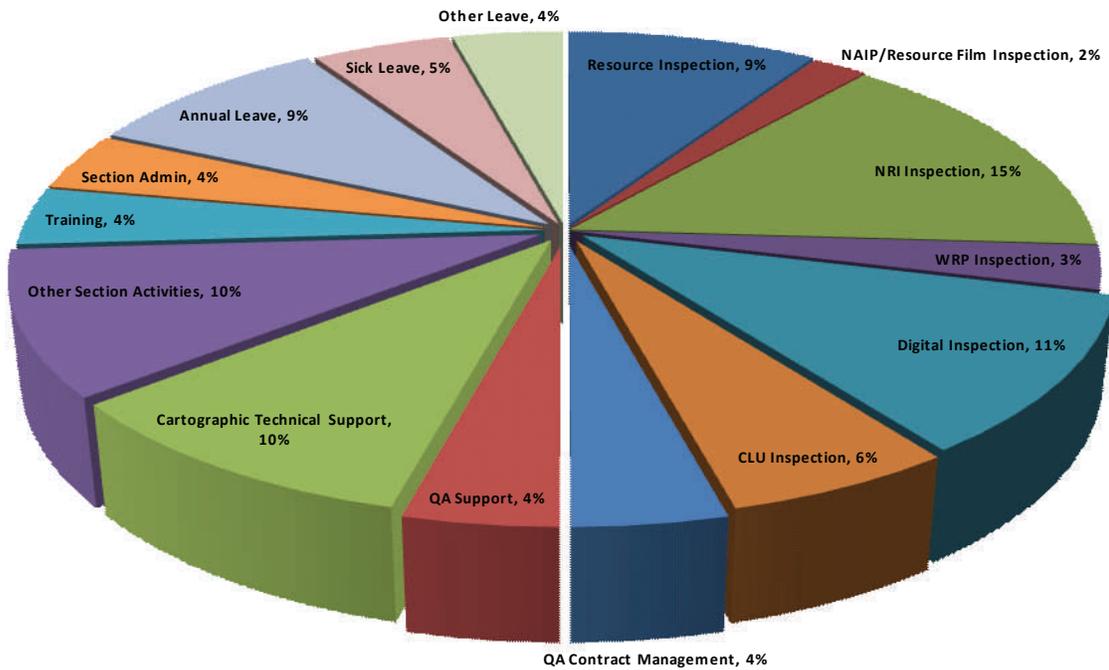
New Digital Inspection program was developed by our IT Staff and tested on our digital inspection projects.

Two employees served on the Equal Employment Opportunity Advisory Committee during FY09 as Chairperson and Federal Women's Program Manager.

RESOURCE IMAGERY INSPECTION SECTION ACTIVITY REPORT

<u>Activity</u>	<u>Hours</u>	<u>% of Time</u>
Resource Inspection	1259	9
NAIP/Resource Film Inspection	162	2
NRI Inspection	2026	15
WRP Inspection	508	3
Digital Inspection	1474	11
CLU Inspection	757	6
QA Contract Management	559	4
QA Support	578	4
Cartographic Technical Support	1375	10
Other Section Activities	1371	10
Training	592	4
Section Administration	533	4
Annual Leave	1170	9
Sick Leave	770	5
Other Leave	615	4
Total	13,749	100%

Resource Imagery Inspection Section



TECHNOLOGICAL SERVICES BRANCH

Mission Statement: *Provide Information Technology security and support requirements for agency specific applications.*

Under the Technological Services Branch are two other sections:

The **Digital Data Management and Distribution section** performs data ingestion, archiving, distribution and fills large custom digital product orders.

The **Application Development section** supplies specific production application development while providing support and/or development of custom applications.

TSB supports business and GIS applications in direct support of APFO business requirements, managing approximately 200TB (terabytes) of data on behalf of FSA and an additional 100TB of data in support of other USDA agencies (NRCS, FS).



IT Specialist accessing data library performance

IT Security

- ◆ Certification and Accreditation for Consolidated Management System (CMS) was completed in FY07 and is reviewed quarterly. The Production Distribution System (PDS) was completed in FY09.
- ◆ There were no IT related security incidents in FY09.
- ◆ Disaster Recovery is being reviewed and maintained for APFO.
- ◆ All APFO databases are continuously reviewed for appropriate security levels and user permissions and changes made as necessary.

Application Development/Implementation

- ◆ In the last year, TSB has developed and/or implemented the following:

Geospatial Applications Development:

- ◆ Upgraded QA NAIP Inspection Tool to Version 9.3 to mitigate performance issues with the inspection of the 2009 NAIP deliverables.
- ◆ Added additional versioning to NAIP Inspection reports to better track NAIP deliverables.
- ◆ Wrote new specifications and use cases for NAIP QA inspection Resubmittal Process.
- ◆ Provided NAIP histogram metric information on the entire 2008 NAIP geotiff dataset.
- ◆ Modified NAIP Inspection tool to verify additional RFP requirements for NAIP 2009 deliverables.
- ◆ Provided additional reports and functionality to automated Absolute Control Process for inspection of NAIP deliverables.



Disk Array

Business Applications Development:

- ◆ Implemented programs for cataloging and labeling master hard drives.
- ◆ Implemented new methodology of pulling the data together for the catalog, view of views.
- ◆ Increased quantity allowed on orders from 3 digits to 5 digits, also increased the category indicators from 2 digits to 3 digits.
- ◆ Implemented a stock item obsolete date for the inventory.
- ◆ Created several views to be used by functional users to do reporting via MS Excel.
- ◆ Implemented code for running either 10g or 6i reports via the menu. This has been tested and we will mass convert all forms and reports.
- ◆ Implemented tier structured discounting with manager approval process.
- ◆ Added location tracking for rolls of film.
- ◆ Initiated RFI for replacement of Legacy business applications; 4 responses received.

Project Management:

- ◆ Provided project management and oversight for approximately 15 major projects including:
 - * Purchase 3 additional high end monitors for use w/ new Wehrli scanners
 - * Lifecycle replacement of end of life printers
 - Purchased 3 – Sharp 4501N MultiFunction Printers (MFP) allowing APFO to reduce the number of peripherals in the building; the anticipated reduction of equipment is as follow:
 - 2 – End of Life Copiers
 - 2 – Fax Machines
 - 32 – Black and White Printers
 - 12 – Color Printers
 - * Provided project management and technical implementation of Web based Customer Order Entry System (COES) to allow both public and Federal customers the ability to order geospatial data on line.
 - * Chaired Contingency Planning team in support of APFO's business requirements, inclusive of all branches.
 - * NAIP infrastructure Upgrade – funds were made available thru the NAIP program to upgrade APFO's infrastructure. This resulted in purchasing new servers and storage to support High Availability and Redundancy. It also include a necessary Network (bandwidth) upgrade, as well as the purchase of equipment that would allow APFO to streamline the architecture by “virtualizing” a number of existing servers and focus on the goal of a “Green” Data Center by reducing power consumption.
 - * Migration of all IT systems from the previously shared UPS, to include power upgrades as necessary.
 - * Completed Fiber upgrade to support data center requirements
 - * Purchased MS 300II Digital Reader/Printer/Scanner on behalf of Sales to replace legacy system used for reading digital photography.



Data Management:

- ◆ Data Management of Vault Index Scan submitted from Mapcon
- ◆ Data Management of Vault Film Exposure Scan submitted from USGS, and created by APFO.
- ◆ Implemented the submission and archive process for NAIP 2009 imagery on SATA hard drives.
- ◆ Data Management of NAIP 2009 CCM and QQ's submitted by NAIP vendors.
- ◆ ESRI Image server data set creation for the GDW image services.
- ◆ Data Management modification to the NAIP 2009 contract.

- ◆ **Resource Data Gateway**
 - * Cataloged and managed 12,822 CCM Data sets or 153,864 individual files for NAIP 2003 - 2009.
 - * Cataloged and managed 3,005 CLU Data sets or 20,040 individual files.
 - * Cataloged and managed 3,040 CRP Data Sets or 3,040 Individual files.
 - * Cataloged and managed 2,959 WET-LAND Data Sets or 11,836 individual files.

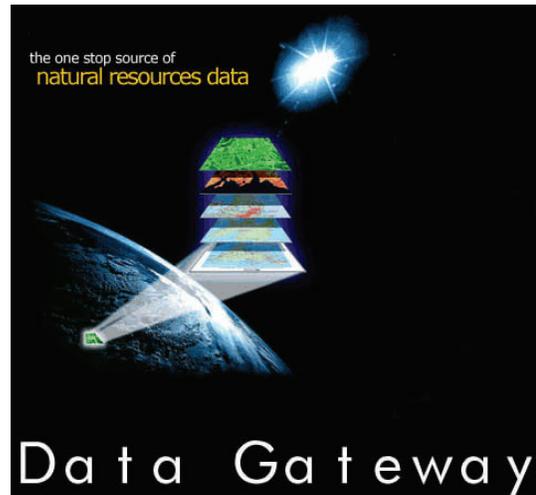
- ◆ **GDW:**
 - * Provided data management support to the GDW operations by cataloging and archiving 102,991 2008 and 2009 1 meter NAIP quarter quadrangles.

- ◆ **Earthwhere Catalog:**
 - * Cataloged 93,571 1 meter 2008 and 2009 Quarter Quads (QQs) into the APFO Data Provisioning System.

- ◆ **Oracle Catalog:**
 - * Cataloged and managed 1,896 2009 Compressed County Mosaics (CCM's) into the Oracle catalog system.
 - * Cataloged and managed 102,991 NAIP 2008 and 2009 QQ's into the Oracle catalog system.

- ◆ **Media Delivery**
 - * Delivered over 163TB of NAIP imagery, and CLU shape files on various media types.
 - * Created Master Hard Drives (HDD's) for all Seasons of NAIP 1 meter Imagery

NAIP 2007	21	7 TB
NAIP 2008	26	7 TB
NAIP 2009	<u>10</u>	<u>3 TB</u>
	57	17 TB
 - * Geospatial Data Warehouse (CSC Staff)
 - * Successfully supported 2 cycles of CLU Replication from the FSA county offices



- * Developed a suite of Analysis tools and workflows for the inspection and QA of NRI and Resource products
- * Developed a public facing web based NAIP Coverage search tool for use by potential NAIP customers
- * Implemented an internal NAIP Coverage project to enable Customer Service staff to expedite the filling of NAIP related orders
- * Completed 1st phase of GDW Server Architecture Upgrade
- * Completed redeployment of FY07 NAIP imagery to state based architecture

Employee Training

Microsoft TechNet Seminars
Oracle Training and Conference

Staff

Two contractors are on site from Computer Services Corporation (CSC) to assist APFO in steady state operations of the Geospatial Data Warehouse. Another contractor is onsite to provide support for web based applications in both business and Geospatial environments.

TSB has a total of nine federal employees who continue to support, maintain, and develop production specific applications, database and Web Services of APFO, security, accreditation as well as GDW requirements.