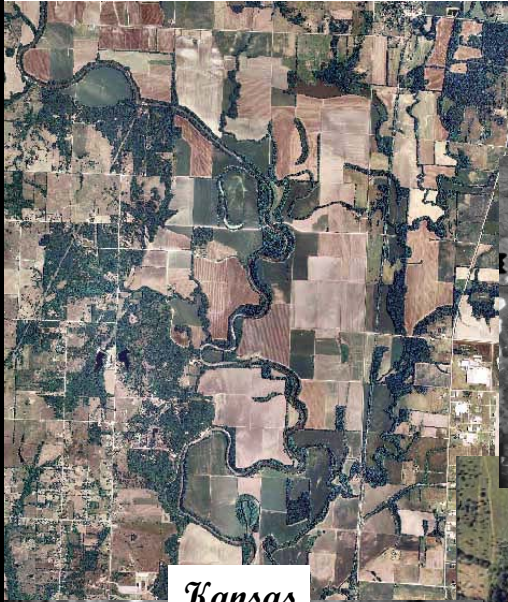


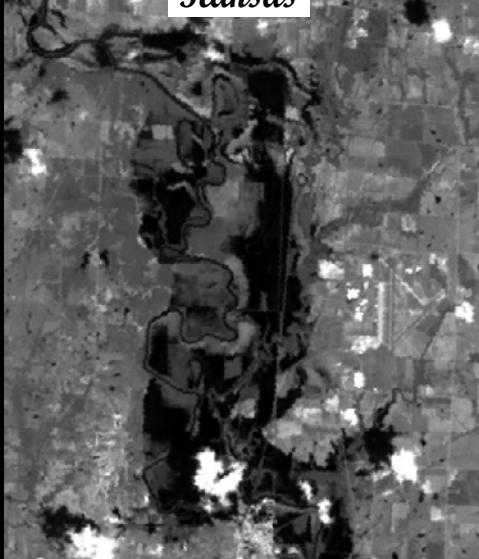
# Aerial Photography Field Office Annual Report 2007



*Kansas*



*Mt. St. Helens*

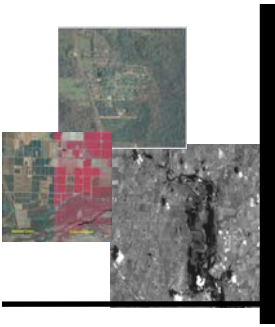


*Mississippi*



*Bay St. Louis, Mississippi*





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## OFFICE OF THE DIRECTOR

The Aerial Photography Field Office (APFO) reports directly to the USDA Farm Service Agency, Deputy Administrator for Farm Programs, Mr. John A. Johnson.

APFO's function and mission is to coordinate the imagery requirements and associated work for the USDA. This delegated authority from the Administrator states APFO will contract for, develop, and carry out the imagery and remote sensing programs within the FSA.

### **APFO's delegated authority includes;**

- ◆ Acquisition of Imagery
- ◆ Inspection of Imagery
- ◆ Production of Imagery
- ◆ Archiving of Imagery
- ◆ Sale and Distribution of Imagery to Federal and State Agencies and the General Public



### **APFO's roles and responsibilities;**

- ◆ Coordinate and manage the FSA Service Center Imagery and geospatial data requirement.
- ◆ Provide assistance to FSA in the transition to GIS and modernization effort.
- ◆ Perform cost effective contracting service to meet USDA Agencies imagery and geospatial data requirement.
- ◆ Deliver cost efficient imagery and geospatial products and services to all customers including: FSA, other USDA agencies, other Federal and State agencies, and the General Public.
- ◆ Preserve, catalog and archive USDA's public domain imagery and geospatial data.
- ◆ Continually make improvements in the acquisition, inspection, archiving and delivery processes for USDA's imagery and geospatial data.

APFO's efforts link to USDA's strategic goal #6, 'Protect and Enhance the Nation's Natural Resource Base and Environment', and also, links to FSA strategic goal #1, Supporting Productive Farms and Ranches and All Associated Strategic Objectives in both the USDA and FSA Strategic Plan.

Organizationally, APFO has been under going a restructuring to better meet our mission and objectives to ultimately better serve our customers. This FY 2007 Annual Report reflects the roles, and accomplishments of APFO's Branches and Sections.

**USDA-FSA**  
**Aerial Photography Field Office**  
**Salt Lake City, UT**

Office of the Director  
Ronald B. Nicholls -  
Kent Williams  
Christen Grell

Contracting -  
Geoffrey Gabbott

Operations  
Branch -  
Ken Koehler

Quality Assurance  
Branch -  
Brenda Simpson

Production  
Services Branch -  
John Stadelman

Geospatial  
Services Branch -  
Brian Vanderbilt

Technological  
Services Branch -  
Lori Uhlhorn

Customer Service -  
David Parry

Ortho Imagery  
Inspection -  
David Wheeler

Photographic  
Services -  
James Daniel

Geospatial  
Services -  
Hugh McGirt

Digital Data  
Management  
Distribution

Administration/  
Personnel -  
Amy Penechar

Resource Imagery  
Inspection

Scanning  
Section

Service Center  
Support

Application  
Development

## CONTRACTING

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

Contracting is responsible for providing contracting services, supplies, and products in support of aerial imagery programs of Farm Service Agency (FSA), Natural Resource Conservation Service (NRCS), United States Forest Service (USFS), and other Federal Agencies as requested.

Primary functions include coordinating requests for new aerial photography and digital imagery, establishing cooperative partnerships, acquisition planning, requirements preparation, proposal evaluation, source selection, and administering the subsequent contracts.

Contracting is also responsible for the procurement of Information Technology acquisitions for APFO and other FSA departments, and special requirement purchases. Other procurement supported activities include participation and leadership positions in national programs such as the Imagery For The Nation (IFTN) initiative, Inter-Agency Digital Imagery Working Group (IADIWG), and the National Digital Orthophoto Program (NDOP). Contracting employs eight professional staff members: three Contracting Officers, one Contract Specialist, two Contract Project Specialists, and two Quality Assurance Specialists.



### **Fiscal Year 2007 Procurement Achievements Summary:**

- ◆ Total Contracts Awarded – **36 Contracts** (36 aerial photography contracts, multiple IT related contracts, and one GDW support contract)
- ◆ Total Contract Value – **\$19,093,005.05** (\$17,948,687.64 aerial imagery contracts and \$1,108,326.41 IT and GDW support contracts)
- ◆ Administrative Charge Revenue – **\$357,919.07**
- ◆ Total Coverage Contracted – **877,007 Square Miles**
- ◆ Contract Administration – **50 Aerial imagery projects were administered** (32 were new contracts and 18 were carried over from prior fiscal years)
- ◆ Contract Pricing – The overall weighted average prices for contracts in FY2007 were:
  - \* NAIP aerial orthoimagery – **\$11.80** per square mile (\$175.53 per DOQQ)
  - \* Resource aerial photography – **\$29.87** per square mile (\$40.86 per linear mile)
  - \* Small area aerial photography – **\$97.17** per NRI or WRP site
- ◆ Contract Derived Products From APFO (Estimated) – **\$192,120**

## **Fiscal Year 2007 Contract Program Achievements:**

### Small Business Concern Programs

Contracting solicited sources for program requirements under a 100% Set-aside for Small Business Concerns where applicable. This resulted in Small Business Concerns receiving 36% of the overall total contract dollar amount, with Large Business Concerns receiving 53% of the total, and North American Free Trade Agreement (NAFTA) Business Concerns receiving 11% of the total.

Distribution of the contracts by program is as follows:

<b>Contract Program</b>	<b>Small Business</b>	<b>Large Business</b>	<b>NAFTA Business</b>	<b>Program Totals</b>
NAIP Contracts	10%	27%	11%	48%
Resource Contracts	4%	3%	0%	7%
SAAP Contracts	19%	21%	0%	40%
IT Contracts	3%	2%	0%	5%
<b>ALL CONTRACTS</b>	<b>36%</b>	<b>53%</b>	<b>11%</b>	<b>100%</b>

### National Agriculture Imagery Program (NAIP)

Provided contracting services to FSA and other contributing partners for one meter and two meter digital orthoimagery covering 1,077 counties (767,091 square miles) in 14 states. Awarded NAIP contract task orders for a total value of \$9,048,698.96. Approximately \$2.86 million was contributed by state and federal agencies through partnership agreements, and the balance of \$6.19 million funded by FSA. Imagery was acquired using both precision mapping film cameras (47%) and large format digital cameras (53%). There is no administrative charge assessed for contracting and inspection services of NAIP imagery.

### Resource Aerial Photography Contracts

Contracted a total of 20,278 linear miles of conventional aerial photography services for the Forest Service, NRCS and BIA (31,880 square miles). Contracted a total of 2,286 linear miles of Alaska aerial photography/ortho-imagery for NRCS and USFS (7,264 square miles). Awarded a total of 13 resource aerial photography contracts for a total value of \$735,191.71. A combined total administrative charge of \$109,075.99 was assessed.

### Small Area Aerial Photography (SAAP) Contracts

Provided contracting services to NRCS to acquire small area aerial photography and scanning services. NRCS required three projects in FY2007 including the National Resources Inventory (NRI) program covering 70,344 NRI Sites and scans, NRI Sites in Alaska covering 581 sites, scans and orthos, and the 2008 WRP Project Sites covering 4,964 easements in 43 states (6,652 exposures & scans). There was also a joint project with NRCS, USFS, and BLM for 459 stereo-coverage sites and scans in the state of Oregon. This was the third year of a 5-year IDIQ contract with a FY2007 total

value of \$7,582,566.07. A combined total administrative charge of \$248,843.08 was assessed.

#### Geospatial Data Warehouse (GDW) Support Contract

Awarded a contract through a Department of Justice IDIQ contract to provide support services to Computer Sciences Corporation for a total amount of \$210,577.81 (\$204,444.48 plus \$6,133.33 administrative charge). Computer Sciences Corporation provided valuable support services for the continued development and maintenance of APFO's Geospatial Data Warehouse.

#### APFO Computer Equipment & Maintenance Contracts

Provided contract authority and services for the purchase of computer hardware, software and other related equipment, and multiple IT Maintenance Agreements for the APFO for a total amount of \$732,365.38.

#### WDC Computer Equipment Contracts

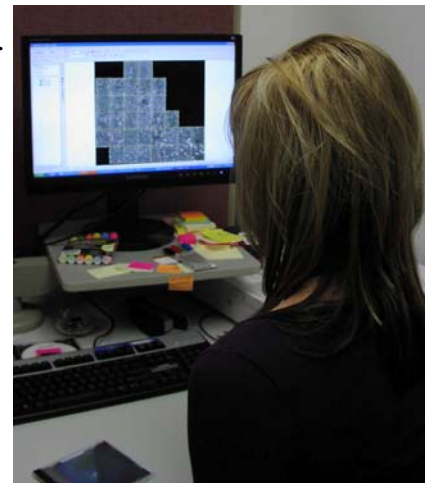
Provided contract authority and services for the purchase of computer equipment, software and IT related products & services for various FSA customers located in Washington DC for a total amount of \$165,383.22.

#### Contracting and QA Inspection Services of Contract Imagery

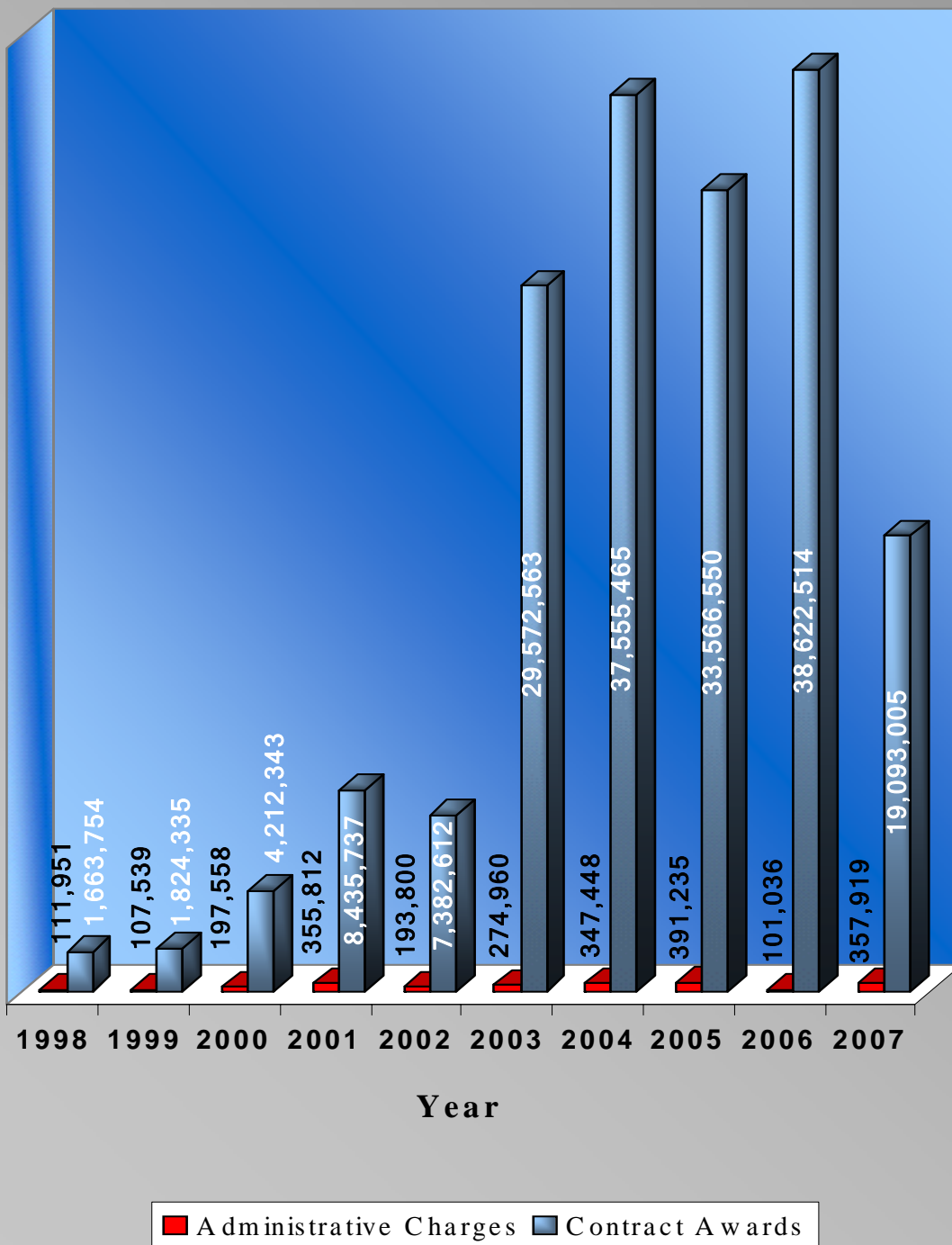
NAIP: Provided contract management and monitoring services for the 2007 NAIP contract covering 14 states and six contractors. Provided receipt and initial inspections services for the Compressed County Mosaics (CCM) and inspection management services for all other NAIP deliverables.

SAAP: Provided receipt and inspection services for the following small area aerial photography site imagery: National Resources Inventory (NRI) sites and scans for 70,344 NRI sites; 450 NRI sites and scans for Puerto Rico and Virgin Islands; 581 Alaska NRI sites and orthophotos; 8,150 WRP sites and scans.

Resource Aerial Photography: Provided contract management and monitoring services for 34 resource aerial photography projects for the Forest Service, NRCS and BIA.

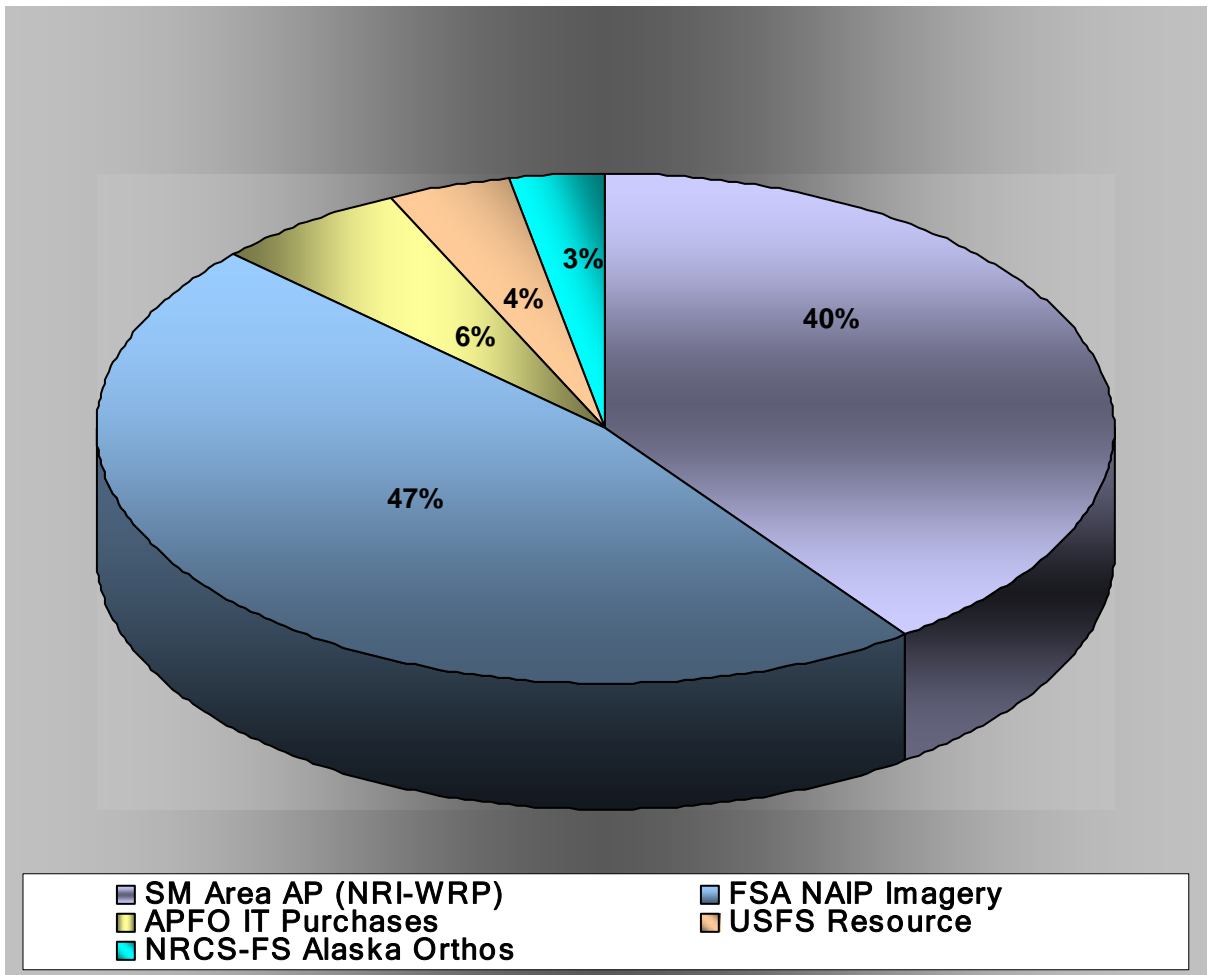


## APFO Contract Awards - Ten Year History

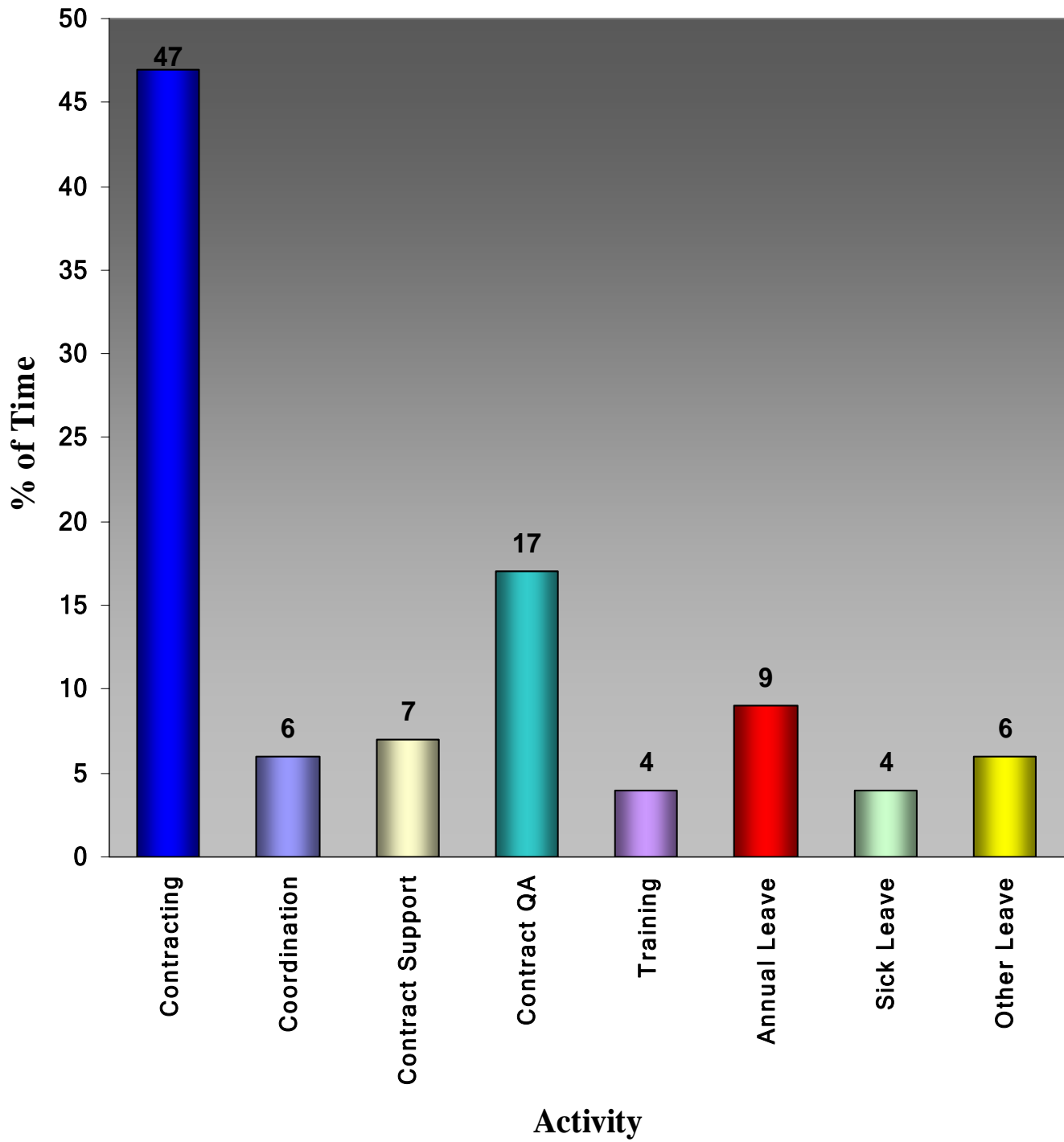




**Total 2007 Contract Awards \$19,093,005**



## *FY07 Contracting 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*

### **Administrative Accomplishments**

#### Data Center and Geospatial Improvement Projects

In 2006, APFO received congressional funding for the express purpose of expanding its ability to receive, archive and distribute data. The Operations Branch coordinated with General Services Administration (GSA) and building lessor to provide project management for the planning, construction, management, and, completion of a new Data Center. The new Data Center provides approximately seven times more floor space to accommodate a new library, additional servers and equipment.

Additionally, new offices for the relocation of Geospatial Services Branch managers and staff were constructed utilizing unused floor space in the Customer Service Section combined with existing floor space in the Geospatial Services Branch areas.

Final approvals and physical move in was completed during early FY 2007.

### **Procurement**

#### Transition of Production Supplies

As the imagery industry continues to transition, many providers of light sensitive, photographic paper and film discontinued product lines, or made the decision to offer material solely through independent distributors. Providing necessary resources, specifically traditional production supplies, became a challenge during Fiscal Year 07. However, thorough referencing and research by Operations personnel, combined with the creative skills of Production and Technological Services, APFO continues to provide high quality product lines to meet all customer requirements.

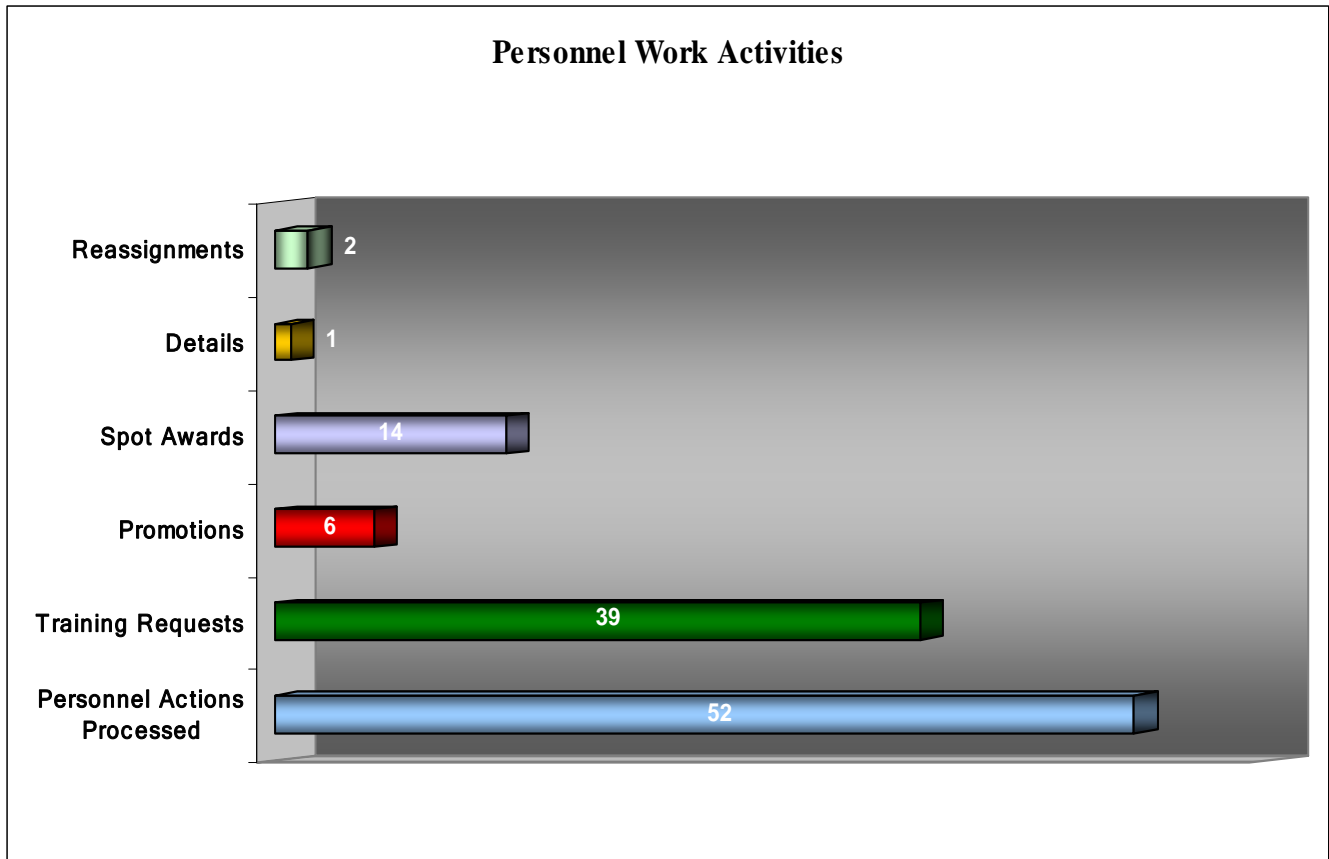


Persistent efforts to minimize cost and ecological impact of product packaging was realized by maximizing use of recycled packing materials.

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 07; 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 2007.



## Health, Safety, and Security

In compliance with Department requirements, APFO's Operations Branch, Administrative Section, working with Agency guidelines, continued to update a contingency plan for the health and safety of employees and their families, customers, and contractors in efforts to prepare for the possibility of a human influenza pandemic – a global outbreak of a new influenza virus that infects and can be transmitted between humans, and to which humans have little or no immunity.

The Operations Branch administrative staff provided input and coordination as point of contact for APFO and facility co-tenants, meeting Homeland Security Presidential Directive 12 (HSPD-12) compliance requirements and mandates.



## EQUAL EMPLOYMENT OPPORTUNITY

### Equal Employment Opportunity /Civil Rights/Outreach/Other

- ◆ Adopt a School – Hillsdale Elementary:
  - \* APFO Classroom Volunteer
  - \* Granite Education Foundation Luncheon, Oct. 20th
  - \* Chapters of Hope - 33 Library Books Donated
  - \* School Supply Drive – Backpacks, Notebooks, Pencils, Crayons,
  - \* GIS Day – 2 day event, Kindergarten thru 9<sup>th</sup> grade.
  - \* Participating Sponsor for the Utah Shakespearean Festival - 6<sup>th</sup> grade class
  
- ◆ Hispanic Heritage Month:
  - \* Poster Recognition
  
- ◆ Disability Awareness Month:
  - \* Poster Recognition
  
- ◆ 22<sup>nd</sup> Annual Utah Women’s Conference:
  - \* Employees Attended
  
- ◆ Native American Heritage Month:
  - \* Banner Recognition
  
- ◆ Veteran’s Day:
  - \* Support the Troops – 20 boxes, 220 lbs. of supplies, sent to Afghanistan
  - \* Poster Recognition
  
- ◆ Sub-for-Santa:
  - \* Christmas Box House - \$300 donation
  - \* Humane Society of Utah - \$150 and material donations
  
- ◆ Redwood Multi-Purpose Center:
  - \* \$185, clothes and food donations
  
- ◆ Martin Luther King, Jr. Day:
  - \* Poster Recognition
  
- ◆ Black History Month:
  - \* Poster Recognition
  
- ◆ Women’s History Month:
  - \* Banner Recognition
  
- ◆ No More Homeless Pets:
  - \* \$85.00 donation
  
- ◆ Take Our Daughters and Sons to Work Day :
  - \* Employee/Family participation
  
- ◆ Asian/Pacific Heritage Month:
  - \* Banner Recognition

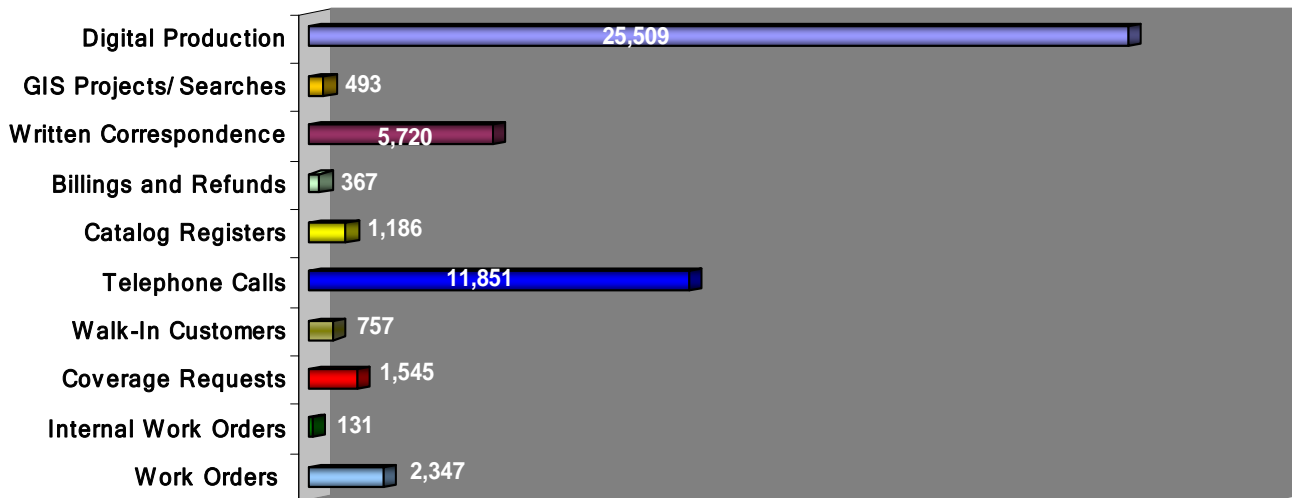
## OPERATIONS BRANCH CUSTOMER SERVICE

**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 and reconcile funds from all government agencies and the public.*

*As part of the Management Operations Branch, the Customer Service Section (CSS), formerly the Sales Section, is responsible for the receipt and processing 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. CSS maintains and monitors all fiscal activity dealing with the sale of aerial photography, digital imagery, and common land units.*



### Customer Service Work Activities



### Special Accomplishments & Noteworthy Activities

Digital Imagery and Common Land Unit Production – The CSS processes and produces small volume (short orders) of NAIP Compressed County Mosaics (CCM's), NAIP Quarter Quads (QQ's), and certified Common Land Units (CLU's) for media requests not available from the USDA Geospatial Data Gateway on CD or DVD. APFO has automated these processes to satisfy our customers' delivery requirements. CSS manually fills digital orders where automation is not available. Large volume (bulk

orders) are processed by CSS and produced on external hard drives by the Technological Services Branch (TSB) distribution team. CLU and short order QQ production has increased approximately 300% and 400% respectively, since last fiscal year.

Digital production activities for Short Orders have been provided by CSS since February 2005.

-----  
NAIP Short Orders – 1,443 CCM’s / 19,503 CLU’s / 2,370 QQ’s  
NAIP Bulk Orders – 19,520 CCM’s / 261,732 QQ’s / Total of 43.4tb of data.

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. SDP will be utilized for the upcoming online ordering service.

NAIP QQ coverage maps and shapefiles continue to be available as downloads from the APFO website. Coverage maps will also be updated and integrated with NAIP Film (where available) photo center coverage and shapefiles during the upcoming fiscal year. A method using GIS to select film coverage for digital photographs has been implemented and will be the basis for a web map service early next fiscal year.

Detailed Activity – One employee involved with the Photo Index Scan inspection. One employee participated on the Online Entry System team. One employee involved with APFO Employee Association and EEO Advisory Committee activities.

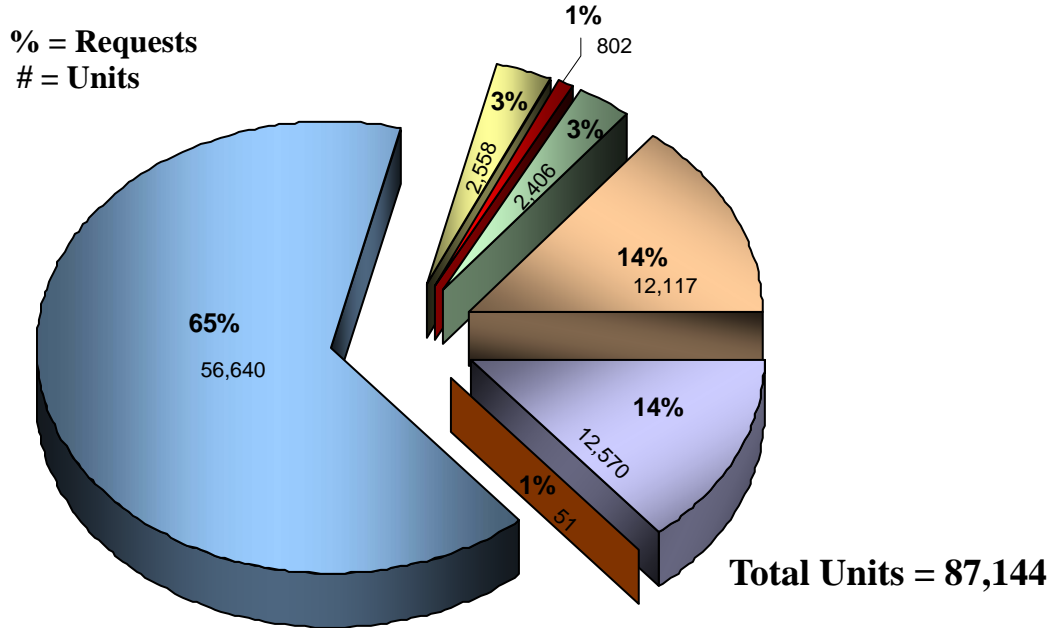
Total Dollar Volume \$1,097,884.43 - Includes all fiscal activity associated with the sale of aerial photography and digital imagery.

<b>Major Categories</b>	<b>Amount</b>
Collections Receipts	\$133,933.50
Credit Cards Receipts	\$506,586.00
Federal Bills	\$361,994.00
Flying Contracts/Products	\$ 74,161.50
Non-Federal Bills	\$111,780.50
Miscellaneous	\$ 50.43

**Fiscal Year Statistical Comparison**

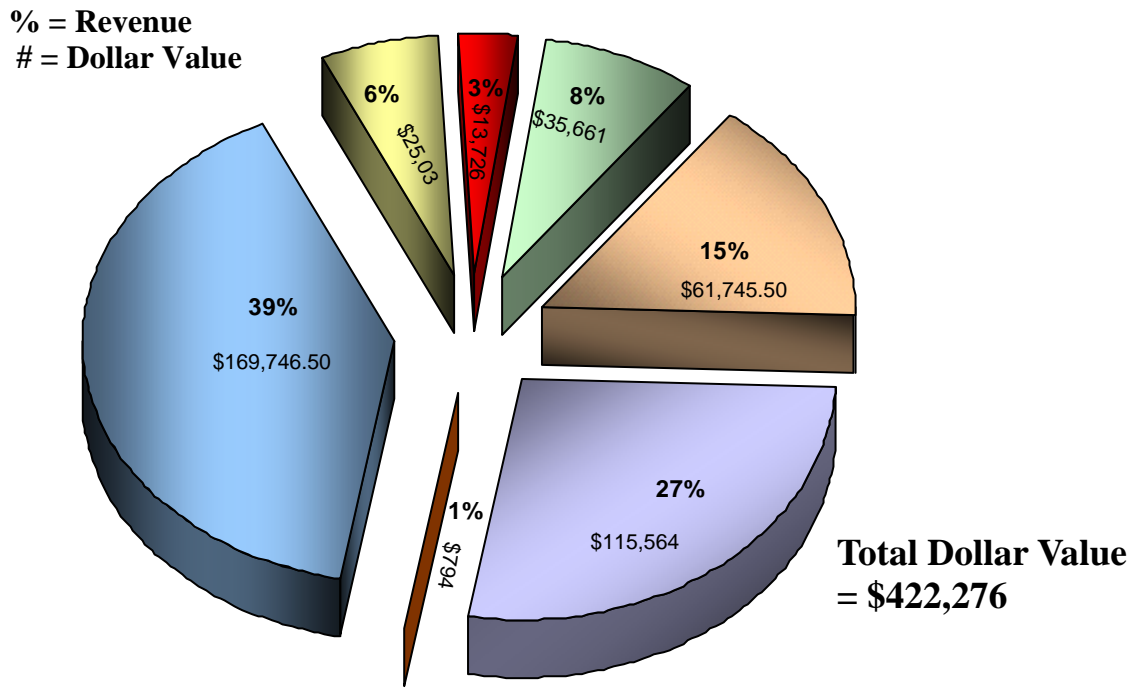
Fiscal Year 2007	262 Units per Order
Fiscal Year 2006	102 Units per Order
Fiscal Year 2005	60 Units per Order

## FY 07 Customers of Aerial Photography Products and Services



■ FSA 
 ■ FS 
 ■ NRCS 
 ■ GS 
 ■ Other Federal 
 ■ State Agencies 
 ■ Public

## FY 07 Customers of Aerial Photography Products and Services

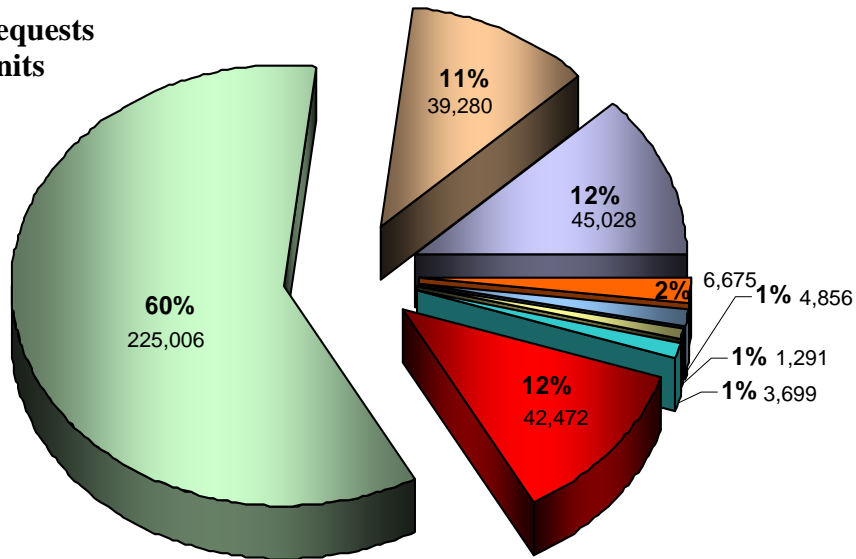


■ FSA 
 ■ FS 
 ■ NRCS 
 ■ GS 
 ■ Other Federal 
 ■ State Agencies 
 ■ Public



## FY 07 Customers of Digital Imagery Products and Services

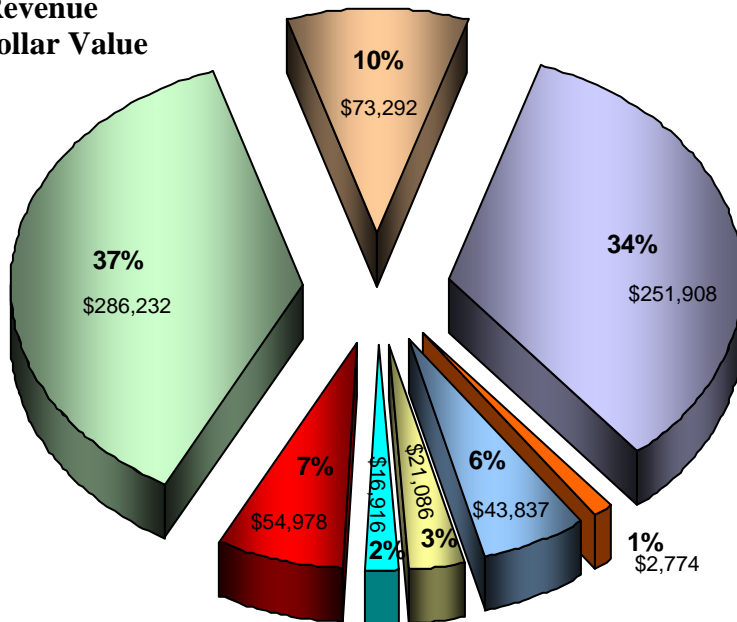
% = Requests  
# = Units



■ FSA 
 ■ FS 
 ■ NRCS 
 ■ NASS 
 ■ GS 
 ■ Other Federal 
 ■ State Agencies 
 ■ Public

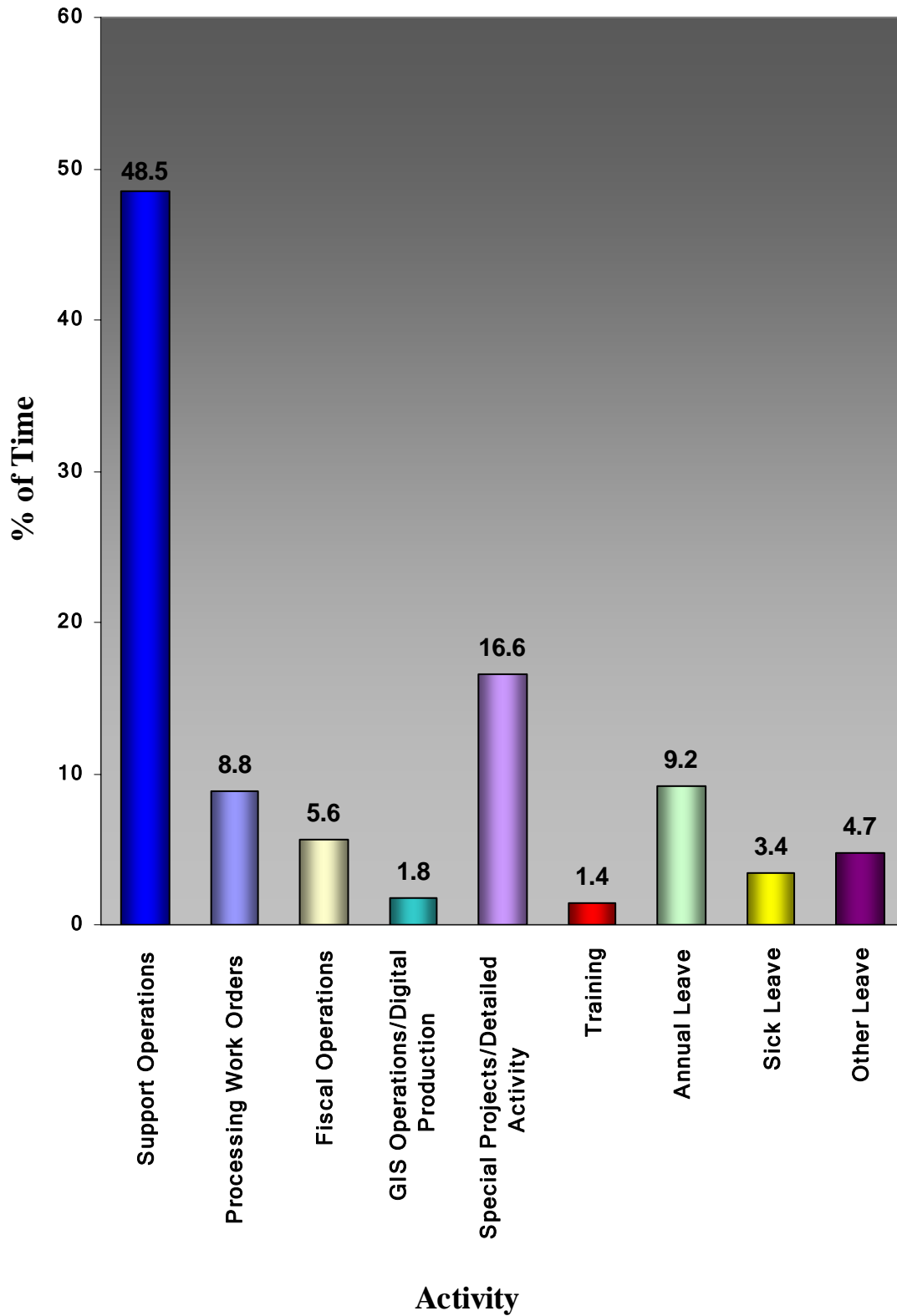
## FY 07 Customers of Digital Imagery Products and Services

% = Revenue  
# = Dollar Value



■ FSA 
 ■ FS 
 ■ NRCS 
 ■ NASS 
 ■ GS 
 ■ Other Federal 
 ■ State Agencies 
 ■ Public

## *FY 07 Customer Service Activity Report*



## QUALITY ASSURANCE BRANCH ORTHO IMAGERY INSPECTION

**Mission Statement:** *To assure customer needs are met by providing quality assurance inspection, monitoring, and disseminating of imagery and geospatial data for the National Agriculture Imagery Program (NAIP).*

### **Fiscal Year 2007 Achievements Summary**

#### National Agriculture Imagery Program (NAIP)

The section used 16,803 hours of inspection and support services for 1807 NAIP06 and 268 NAIP07 Compressed County Mosaics (CCM) and 207,072 Quarter Quads. Inspection of NAIP06 was completed in August of FY07.

A new process was implemented for a metric inspection of quarter quads for NAIP 2007. Over 500 hours of training was used to prepare for this additional quality assurance process for the NAIP imagery. NAIP07 quarter quad imagery delivered was inspected using this new process.



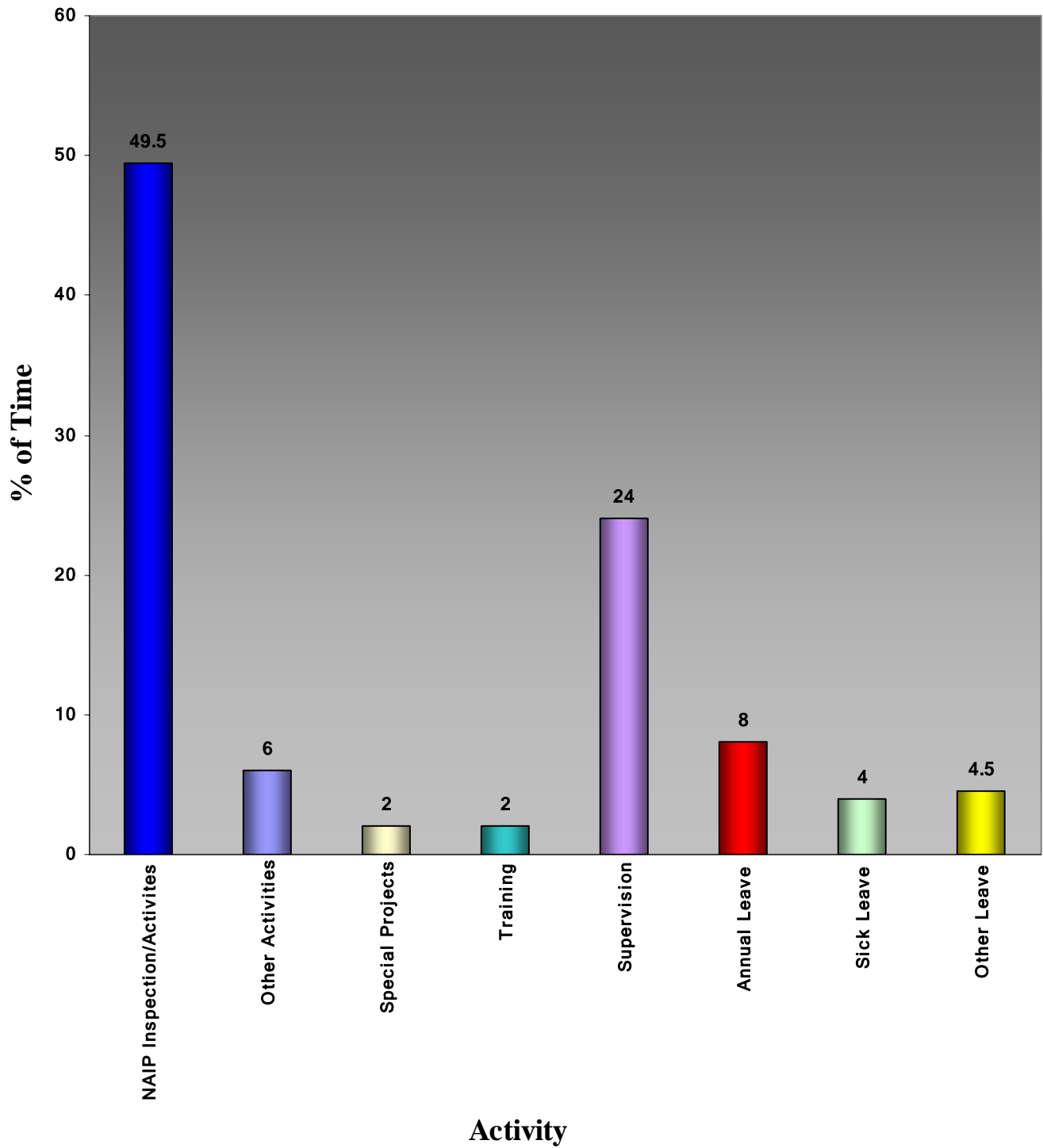
A manual absolute control process was started for inspection of the Utah 06 and Arizona 07 NAIP. Over 500 hours of special projects were used to set-up and prepare for this new procedure.

### **Other Section Accomplishments**

One employee served on the Equal Employment Opportunity Advisory Committee during FY07 as a Committee member.

Two employees assisted with inspection of the Index Scanning Project. 387 hours were used to inspect 1405 indexes from this project.

## *FY 07 Ortho Imagery Inspection Activity Report*





## QUALITY ASSURANCE BRANCH RESOURCE IMAGERY INSPECTION

**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 and Common Land Unit (CLU) digitizing as well as APFO website update information including status maps and data for these programs. This section also maintains the Service Center GIS priority (SCIT) and Catalog Listings.*

### Resource Aerial Photography

In FY07 the section provided flight planning and contract monitoring services for 16 resource aerial photography projects covering 9,549 square miles (10,496 linear miles). 1 NRCS flight exposure project covering 6,652 exposures

Inspection and acceptance of 16 resource projects at 100%, and 8 projects in various stages of completion totaling 40,166 line miles and 182 DOQQ's.

Inspected, cataloged and archived 190 rolls of Forest Service and Special Project film and 29 rolls of NAPP original film.



### National Agriculture Imagery Program (NAIP)

The section provided 3,521 hours of inspection assistance to the Ortho Imagery Inspection section for 508 NAIP06 and 89 NAIP07 Compressed County Mosaics (CCM) as well as 49,674 Quarter Quads.

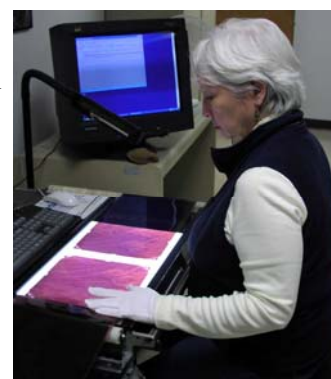
391 Hours were used to inspect, catalog and archive 685 rolls of original film for the NAIP program.

### Common Land Unit (CLU) Digitizing

Monitored the delivery of 10,470 units of updated CLU data from FSA County offices and released to IT for upload to the Data Gateway.

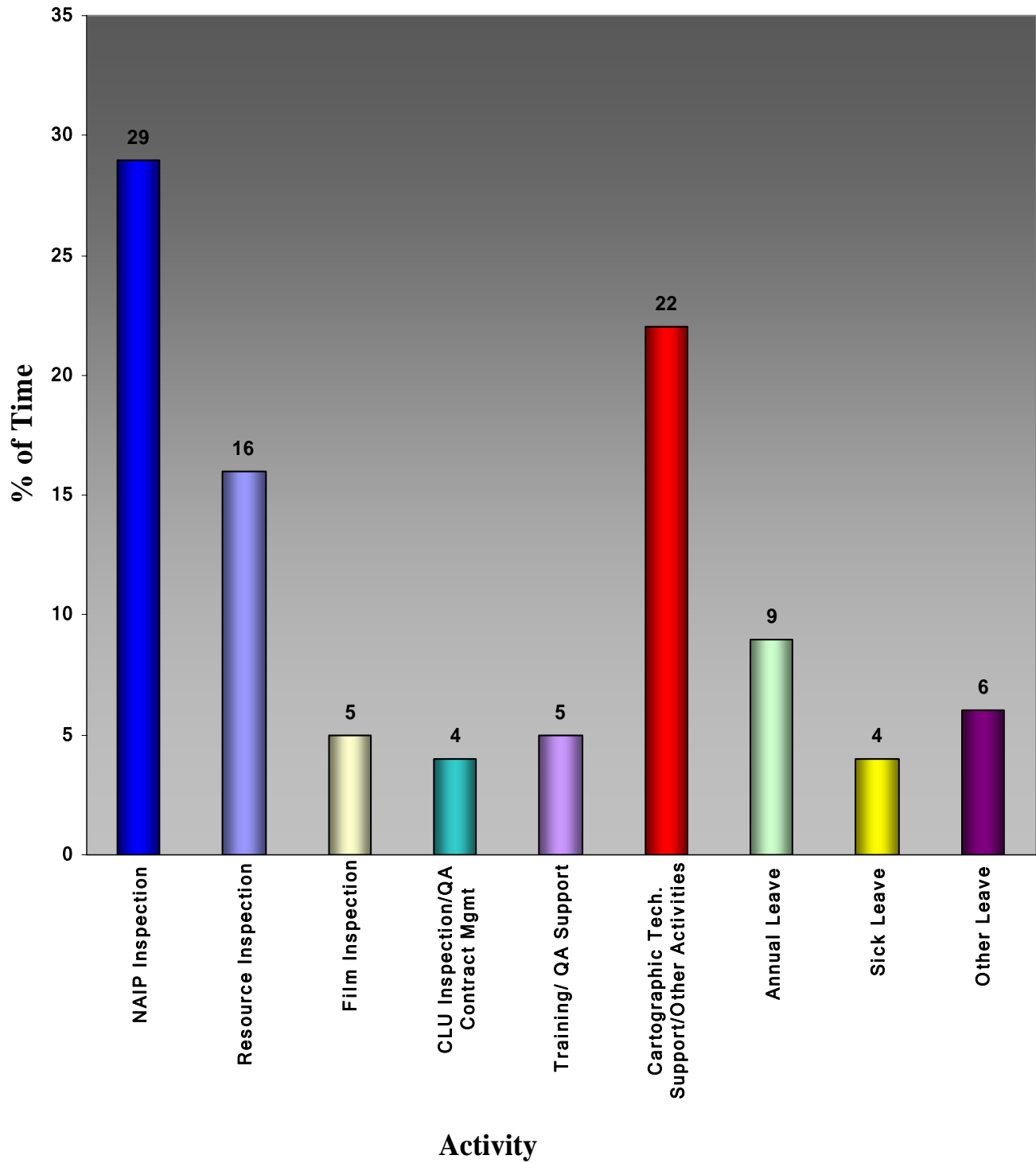
### Other Section Accomplishments

Performed comprehensive review and corrections to data contained in the APFO Catalog Listing. Started an update of Forest Service special projects listings to the catalog.



One employee assisted with inspection of the Index Scanning Project. 92 hours were used to inspect 646 indexes from this project.

## *FY 07 Resource Imagery Inspection 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 Production Services Branch is responsible for generating color and black and white aerial photographic products and digital imagery for various customers, including FSA, NRCS, Forest Service, other Federal and non federal agencies and the public. The Production Services Branch is also responsible for chemical mixing, electronic and mechanical maintenance and maintaining APFO's Film and Media Library.

Aug. and Sep. 2007, respectively, the APFO hired a permanent full time Production Services Branch Chief and a permanent Supervisory Photographer in support of the reorganization.



In continued support of the APFO Historical Photo Index contract from Oct. 2006 through Jan. 2007 the Photo Section used 663 hours and the Scanning Section used 697 hours supporting the scanning contractor on site for the project during FY07. In 2007 deliverables from the contractor arrived for inspection, 12 APFO employees spent 2,502 hours inspection 47,987 TIFF and GEOTIFF file format photo indexes. The photo index inspection process will continue into FY08.

Production Services employees completed 2,642 work orders encompassing 7,252 rolls of B&W, color and CIR film.

## Technical Support Staff

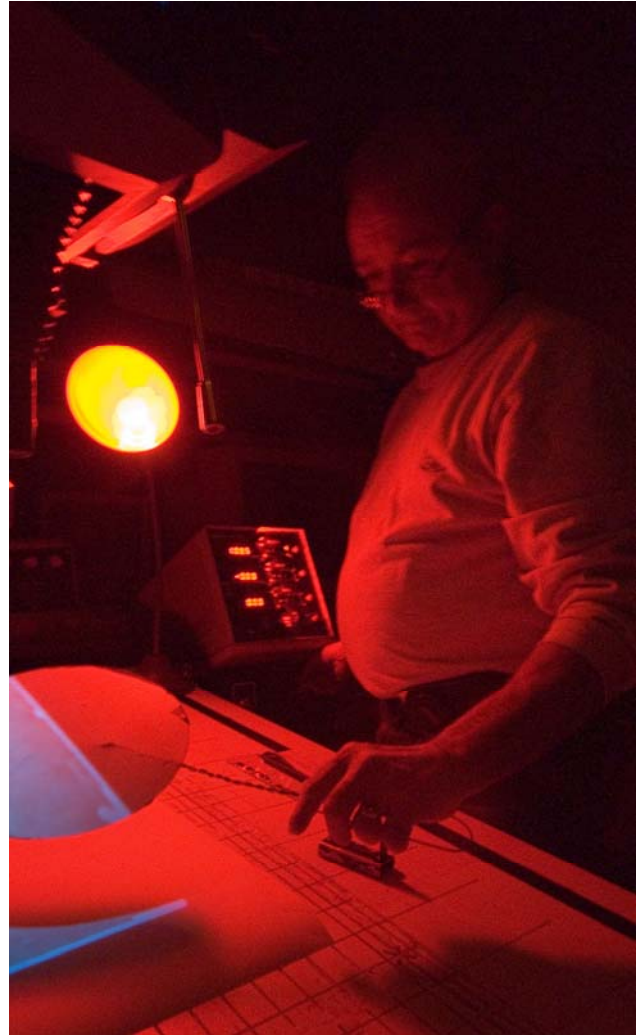


The Tech Support staff has been involved in the following activities during FY07:

- ◆ Assisted in the planning and technical support of the construction of the new IT data center server room expansion.
  - ◆ Assisted in the disassembly and moving of the QA, Inspection and Photogrametrics work sections for the IT server room expansion.
  - ◆ Removed all support equipment in the QA and Inspection sections, air lines and filters, air purification system, all Cat-6 data lines, telephone lines in preparation of the IT server room expansion.
  - ◆ Tested and rebuilt four UPS power supplies (batteries and electrical output) for the IT server room expansion.
- 
- ◆ Tested and rebuilt several power supplies for IT server racks, (cooling fans and electrical output).
  - ◆ Wired, jacked, terminated and tested all computer lines in the new Photogrametrics, QA and Inspection sections work areas.
  - ◆ Provided technical assistance to the contractors throughout the vault index scan project. Installed data interface lines between all work stations, repaired and set up light tables, and assisted in the repairs of operational equipment problems with the scanners during the project.
  - ◆ Assisted factory representatives from space savers vault storage system to diagnose and repair reoccurring mechanical and electrical problems.
  - ◆ Researched technical data for the conversion over to poly contrast print paper, and continue to work with operators with reoccurring problems, filters and light source.
  - ◆ Repaired and made operational the color head on the B&W Dever enlarger for the use in the poly contrast print paper conversion.
  - ◆ Set up a contact print room (log-E) to accommodate the expanding contact print work load in B&W section.



- ◆ Performed a complete rebuild of the E-6 color processor to address the leaks at the feed end and throughout the system, rebuilt all thirteen processing racks.
- ◆ Dismantled and readied for shipment numerous pieces of photographic equipment to provide space for evolving work load within the photographic section.
- ◆ Assisted factory representative in the testing and repair of the Durst digital printer.
- ◆ Provided technical support to the security section by installing and testing numerous security devices for the protection of APFO.
- ◆ Rebuilt, refurbished and made operational six Log-E contact printers.
- ◆ Responded to and repaired all daily equipment issues and problems in a timely and accurate manor.
- ◆ Provided quality technical support to all APFO staff, sections and contractors by completing all assignments accurately and within established time lines.



### **Photography Section**

- ◆ Color and B & W imagery products released 72,560.
- ◆ Service products released 4,438

### **Achievements In Production**

Products produced/hours consumed during FY07 include:

- ◆ Color Photography – 42,822 products / 3,889 hours
- ◆ Black and White Photography – 29,783 / 2,688 hours





### Services

- ◆ Laminating – 4,438 products / 37 hours
- ◆ Trimming/Cutting –145 hours

### Scanning Section

- ◆ Scanned Images Produced 13,644
- ◆ Media Products Produced 543

### Achievements In Production

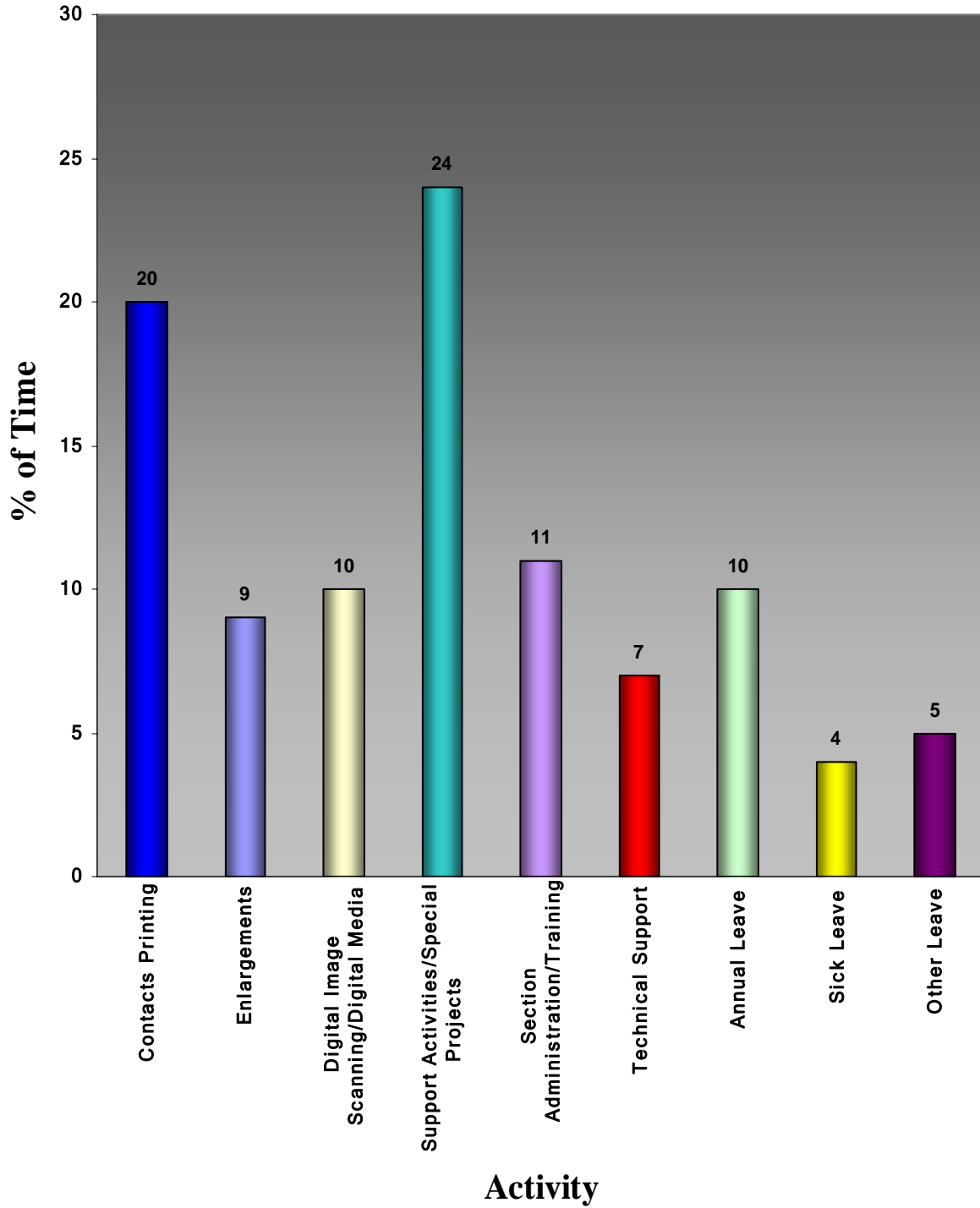
Products produced/Hours consumed during FY07 include:

- ◆ Image Scans produced – 13,644 images / 2,021 hours





## *FY 07 Production Services Activity Report*



## GEOSPATIAL SERVICES BRANCH GEOSPATIAL SERVICES SECTION

**Mission Statement:** *Produce 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 2007 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 quads 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

Geospatial Services Section completed its first year as a section in the Geospatial Branch. Equipment, process improvements, and training were goals established and achieved to include:

#### Training

- ◆ BAE Conference - 1 Employee

### Accomplishments

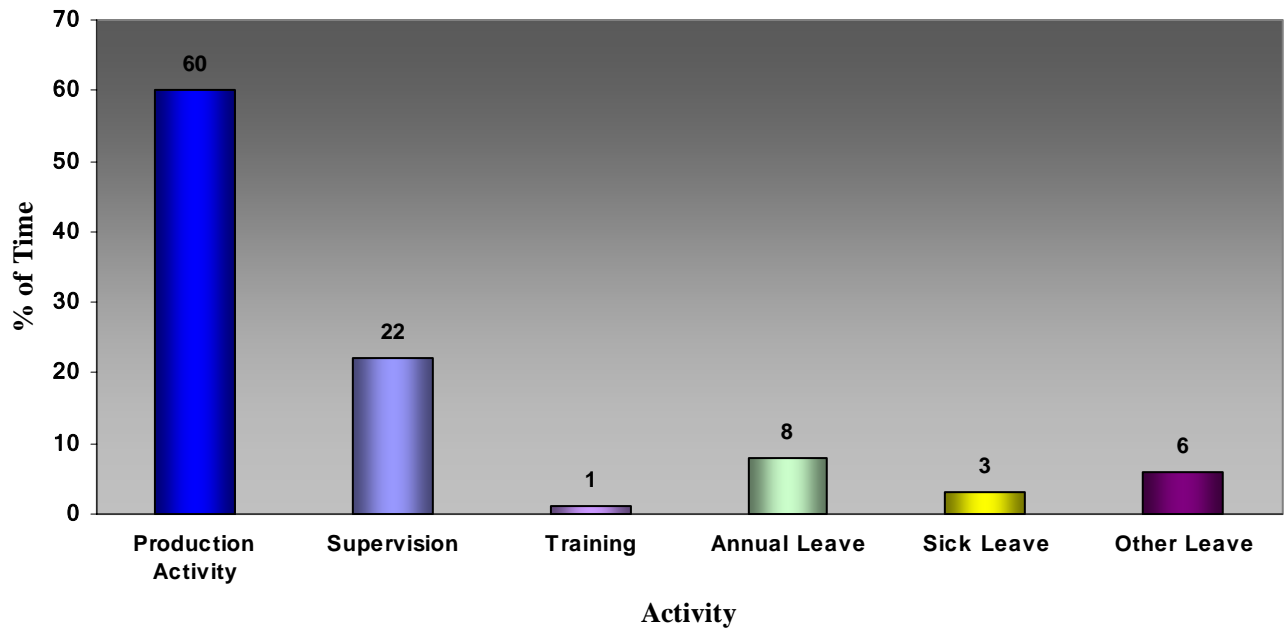
#### Production

- ◆ Digital Ortho Quarter Quads produced - 180
- ◆ County mosaics reprojected - 34
- ◆ Compressed county mosaics produced – 19
- ◆ Forest Service Indices reprojected - 5
- ◆ Recompressed county mosaics - 2
- ◆ NAIP 2006 states flight planned - 14
- ◆ Status maps Produced - 208

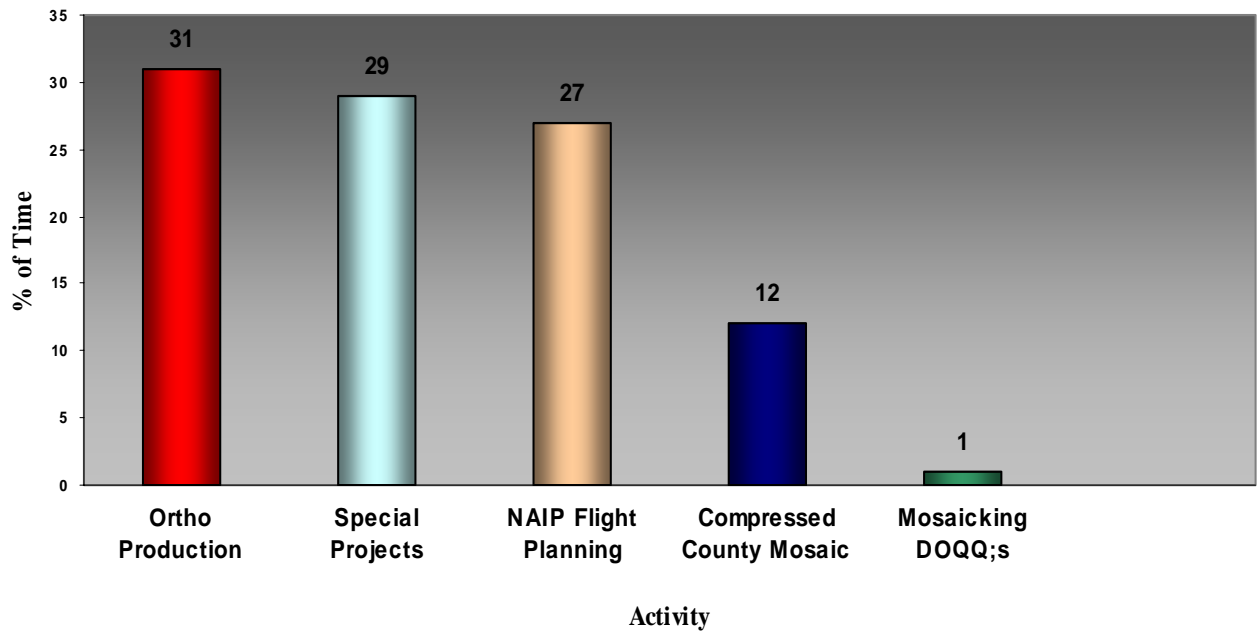
### Special Projects

- ◆ Horizontal accuracy checks for Chequamegon and Nicolet National Forests, Wisconsin.

### *FY 07 Geospatial Services Digital Activity Report*



### *FY 07 Geospatial Services Project Activity Report*



## GEOSPATIAL SERVICES BRANCH SERVICE CENTER SUPPORT SECTION

**Mission Statement:** *To provide 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. Over the past year SCSS has expanded from two to six employees, in order to better address the continually changing world of geospatial technologies and the management of geospatial data, in support of the FSA mission.

### Planning and Project Management

2006-2007 National Agriculture Imagery Program (NAIP) Absolute Control Pilot – During 2007, continued participation in a pilot project to move NAIP from a relative accuracy specification to an absolute accuracy specification. Work included project research and setup, coordination with FSA, Service Center Agencies (SCA), State agencies, United States Geological Survey (USGS) liaisons, National Geodetic Survey (NGS), Tribal Governments, and National States Geographic Information Council (NSGIC) representatives.



Acquisition of control via existing photo control databases and in partnerships with the representatives from Utah and Arizona, on cost of purchasing control from private sources, initial database and inspection process development, and actual inspection of deliverable products for horizontal accuracy. Produced inspection results and reports for 2006 Pilot. Moved 2007 NAIP to absolute accuracy specifications in Arizona, teaming for acquisition of new control and consolidation and management of existing control point datasets used for inspection, as well as for the aerial triangulation (AT) solution for the vendor. Projects are currently under way to move the inspection process to a more automated format, and the control point database to a more sustainable and manageable environment as the database grows. We are expecting to team with 4-5 states in 2008 in moving to absolute accuracy standards, and are gearing up to move the lower 48 to absolute accuracy specifications in following years.

2006-2007 NAIP Survey – Developed web-based 2006 NAIP survey and routed through Washington DC for approval and dispersal. Summarized survey results of 2006 survey in an effort to identify areas for improvement in NAIP acquisition and delivery. Presently working to finalize 2007 NAIP Survey Notice and distribute the survey for response by January 2008.

2006 Index Scanning Project – Continued to support this project as needed in 2007, by providing presentation materials and status updates. Also coordinated on future scanning projects, such as the potential future scanning of entire film vault, public display of data for research purposes, and teaming for the exchange of data and resources with USGS EROS.

Imagery For The Nation (IFTN) – Maintained good coordination and contact with representatives from the National States Geographic Information Council (NSGIC) and National Digital Orthophoto Program (NDOP) on issues related to NAIP, which potentially affect IFTN. This involved the coordination of horizontal and vertical accuracy standards for NAIP and IFTN.

2007-2008 NAIP Contract – Participated in the review and update to the 2007 NAIP Contract. Participated on the 2007 NAIP Contract Technical Evaluation Panel and Source Selection Committee. Worked on proposed or possible changes to the 2008 NAIP contract.

Developed media presentation to display processes and tools for GIS work within FSA, addressing current capabilities and the vast potential for geospatial data in FSA. Teamed with State GIS Specialists/Coordinators from Utah, California, Mississippi, and Kansas, and produced video addressing past, current, and potential uses of geospatial data within FSA. Presented video to WDC leadership, including FSA Administrator Lassetter during a visit to APFO.

Produced 3D flythrough video of 4 locations around the State of Georgia, accomplished with readily available in-house technologies, software, and data.

1AP – Began initial stages of revising policy document 1AP. Draft policy update expected to be complete and out for review late 2008.

Produced draft definition of FSA Standard Ortho Base Imagery, outlined process to approve non-standard imagery for conversion to an FSA standard base, and outlined process to approve non-standard imagery for ancillary uses (other than base). Policy will be wrapped into 1AP.

Evaluated 2006 AR State acquired ortho imagery for use as official FSA ortho base. Provided policy and direction in coordination with WDC on appropriate use of this imagery dataset.

Evaluated available NY State acquired ortho imagery for use as official FSA ortho base. Provided policy and direction in coordination with WDC on appropriate use of this imagery dataset in association with available NAIP data.

AP-5 – Assisted in the development of AP-5, policy to direct correct placement of NAIP imagery within the compliance and ortho imagery folders. Fielded and responded to customer questions post policy release.

Reviewed and updated the Geodata Management Team (GDMT) Manual for Managing Geospatial Datasets in Service Centers.

Reviewed and updated NDOP/IFTN Technical Issues Team Charter.

Participated in Wasatch Front LIDAR and Imagery Acquisition Project.

Participated on panel to hire four new employees for SCSS.

Information Sheets – updated publicly available CLU and NAIP info sheets.



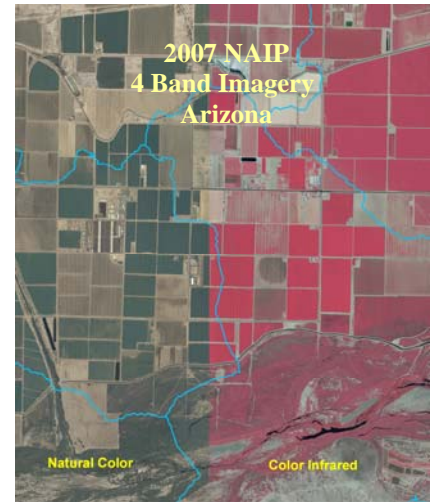
## Research and Analysis

Compression Testing – Tested compression to JPEG2000 format using various suites of software.

Developing and releasing an RFI addressing potential settings for the JPEG2000 format for CCMs in NAIP. Goal of project is to arrive at software independent compression settings for the 2008 NAIP Contract, and pilot a state, using JPEG2000 as the compression format for CCM deliverables.

4-Band Imagery – Analyzed various compression formats, such as ECW, JPEG2000, and MrSID, with respect to 4-band products. Researched possible affects of implementing 4-band data acquisition and delivery for NAIP; file sizes, compatibility issues with MrSID MG3 compression, compatibility issues with ArcGIS software, and a 4-band geotiff product.

Seamline Polygon – 2007 NAIP Pilot to specify and inspect a vector dataset for delivery with the CCM product that more accurately represents the date and time of imagery acquisition as represented by the CCM. Participated in review/inspection of seamline shapefiles as submitted by vendor for 2007 AZ NAIP. Will provide results of inspection, report and recommendations.



Performed a study to assess the potential affects on the Common Land Unit (CLU) data in West Virginia, if an ortho base product is moved to a higher order accuracy specification. Extensive report written containing results and recommendations.



Sample GeoSAR image with crop type - Yazoo County, MS

Supported GeoSAR project in Yazoo County, MS. Assisted with outline of product deliverable specifications and teaming with vendor, as well as FSA State and County offices in preparatory field work to analyze data, once delivered, against various imagery datasets and ground truth data. Project is in place to better understand the IFSAR product and its potential applicability for use in crop assessment/identification, or as a stopgap for aerial photography acquisition in locations where imagery is difficult to acquire. Preparing to attend ASPRS 2008 Conference in Portland, Oregon, where APFO



will jointly present this project with Fugros EarthData.

Prepared graphic and statistical analysis of NAIP DOQQ delivery, acquisition versus contracted flying dates for project item areas.

Developed a plan, based on ITT Study results, to support Service Centers and State Offices in making ITT recommended changes to viewing environments on a national scale. Contracting in conjunction with SCSS established a draft IRM notice on viewing environment, monitor calibration, etc. Visited county office to review monitor calibration instructions.

Participated in research of replacement flight planning software.

### **Team Representation, Presentations, and Training Provided**

- ◆ APFO/NCGC Charter Meeting – Attended APFO/NCGC Charter Meeting
- ◆ USDA Planning Meeting – Attended USDA Planning Meeting and NAIP Post Mortem.
- ◆ Utah Geographic Information Council (UGIC) – Presentation on Absolute Accuracy Utah 2006 NAIP Pilot Project study and results.
- ◆ National Digital Orthophoto Program (NDOP) – Attended general and subcommittee meetings.
- ◆ Environmental Systems Research Institute (ESRI) – Presented NAIP options and challenges, at the International Users' Conference.
- ◆ National Digital Elevation Program (NDEP) – Presented Agency activities in elevation.
- ◆ 2007 NAIP Orientation – Organized and lead meeting via Microsoft My Meeting
- ◆ 2008 NAIP Planning Session – Organized and lead meeting via Microsoft My Meeting
- ◆ LIDAR Conference – Attended first National LIDAR Initiative meeting hosted by USGS
- ◆ USDA NASS Users Meeting – Attended local NASS User's meeting
- ◆ Community Involvement – Presented at Utah GIS Day, assisted in educational presentations and meetings for approximately 1600 youth and adults alike.
- ◆ Community Involvement – Taught GIS and geography concepts and software usage to 3<sup>rd</sup> grade students at Hillsdale Elementary.
- ◆ 2007 SWUG – Presented on NAIP and GIS related projects.
- ◆ FGDC Cadastral Subcommittee – Participated on cadastral issues for FSA with special attention to the CLU and the wildland fire program.
- ◆ 2006 Inter-Agency Digital Imagery Working Group (IADIWG) – Participated on monthly teleconferences and assignments.
- ◆ Geospatial Data Management Team (GDMT) – Coordinated between the GDMT and other teams and agencies. Team Lead in 2006 and 2008.
- ◆ Monthly GIS teleconferences – Provided technical information and answers to questions from national and state participants.
- ◆ Provided Georgia State FSA GIS and imagery related training information and presentation.
- ◆ Prepared general instructions for viewing/identifying CCM shapefile Image Dates (IDAT field).
- ◆ Prepared paper on using imagery for agricultural purposes, for Professional Surveyor Magazine.
- ◆ Assembled slides for Connecticut State FSA in preparation for Remote Sensing Symposium.
- ◆ Provided numerous facility tours for FSA State GIS Specialists and student groups.
- ◆ Developed instructional document addressing CLU digitizing on 1-meter resolution imagery
- ◆ Developed instructional document on using out of box ArcGIS 8.3/9.x tools to stretch histograms.

- ◆ Assistance with the National Farm Machinery Show, including posters, information sheets, data samples, and booth assistance.
- ◆ NAIP Technical Evaluation Panel
- ◆ FGDC Historical Subcommittee
- ◆ 2007 ASPRS Membership
- ◆ EA Committee Representative

### **Data Provided**

- ◆ Reprojected 10-15 incorrectly projected CLU shapefiles
- ◆ Reprojected 85 2003 NAIP Tiles in NH/VT based on DHS customer request
- ◆ Processed RMA request for all currently certified CLU, including access to additional attribute fields. Semi-automated process to delete selected attribute fields in approximately 2000 shapefiles
- ◆ Researched 4 locations in MS based on map request from USDA Undersecretary

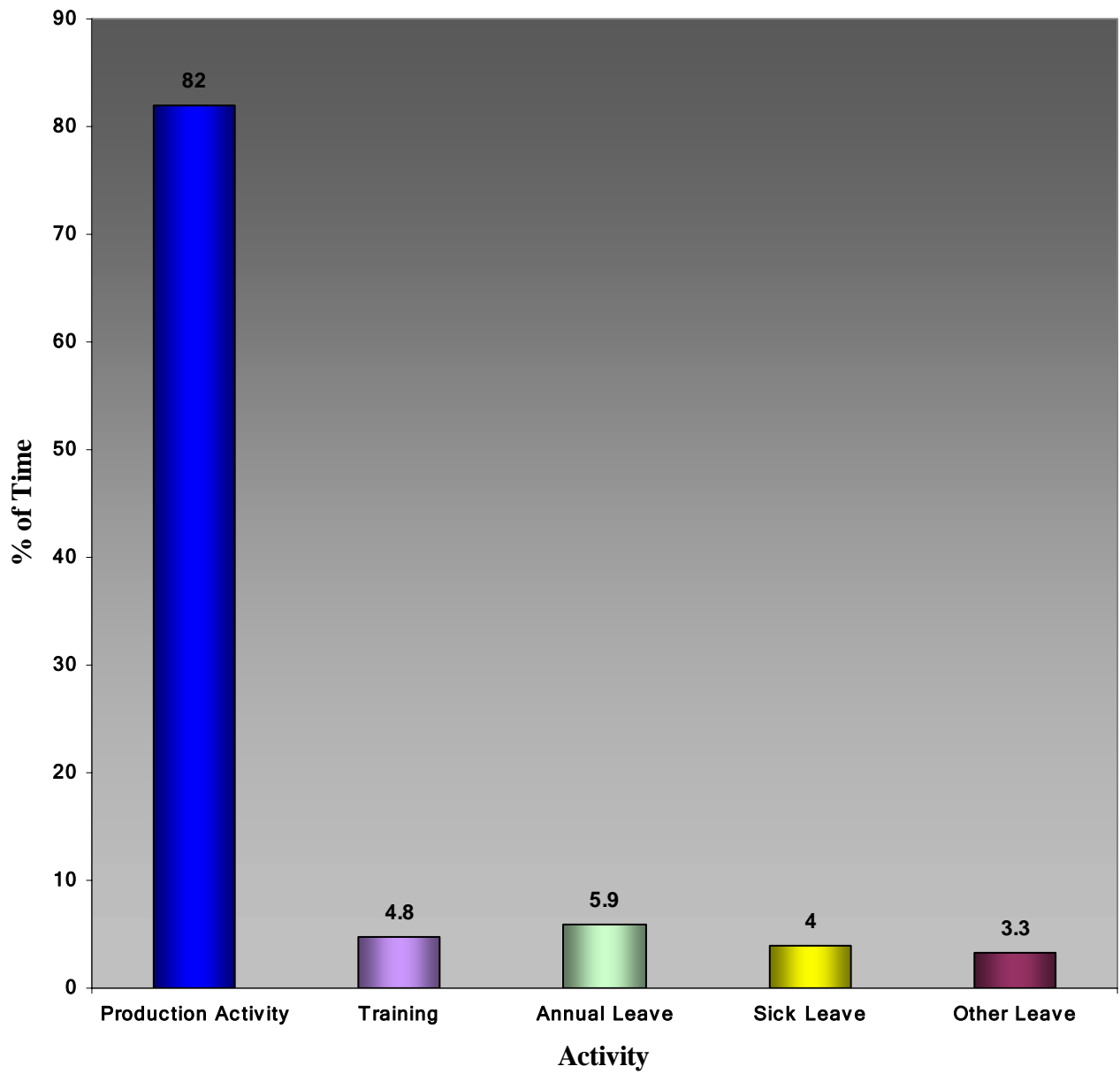
### **Customer Support**

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

### **Time**

FY07 was a time of change in SCSS, where four new employees were added and workload substantially increased.

*FY 07 Geospatial Service Center Support Activity Report*



## 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.



### IT Security

- ◆ Certification and Accreditation has been completed with minimal security risks found.
- ◆ There were no IT related security incidents in FY07.
- ◆ 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, ITSB has developed and/or implemented the following:

- ◆ Replacement/ Upgrade of NAIP inspection applications
- ◆ Development of NAIP Inspection Team Lead “Books”
- ◆ Implementation of NAIP end user support ticket (help desk) system
- ◆ Automation of NAIP inspection update map

- ◆ Design/Development of NAIP acquisition maps
- ◆ Established and implemented web based project management system
- ◆ Directed the fielding of 85 new PCs and laptops
- ◆ Current business applications (Oracle Forms) redesigned/updated
- ◆ Established configuration control policy and management process
- ◆ Established APFO application user account policy and request process, ensuring accountability and documentation
- ◆ Initiated Order Entry System project
- ◆ Updated database data dictionary by adding table and column comments, providing added values to current and future employees involved with database administration, data management, and development, by making it easier to determine what, why, and how columns and tables are named, used, and interrelated.
- ◆ Updated Database Modeling Diagrams using Visio ensuring tables and relationships are current and correct.
- ◆ Converted 3 FORTRAN programs (two to ProC and one to an oracle form)
- ◆ Desupported 75 Oracle Reports, 83 Forms, 13 ProC, 57 scripts, 160 .sql
- ◆ Modified Objects: 19 ProC, 99 Oracle Forms, 52 Oracle Reports, 23 scripts, 12 .sql
- ◆ CMS/NAIP/PSU multi state and seasons enhancement, added performance monitoring for NAIP
- ◆ Exposure Number Expansion
- ◆ Loaded miscellaneous EROS data.
- ◆ Desupported 101 tables
- ◆ Created scripts to create files for Role definition and user grants
- ◆ Tightened security on tables containing privacy data
- ◆ Automated many of the other tasks of the NAIP Team Leads from their “Black Book”.
  - \* The Defects/anomaly/measurement State Status Maps.
  - \* Designed new process flow for the CCMJPG reconciliation process used by NAIP Team concluding with Bridget’s reconciliation. Had new Oracle table added to gather the JPG information and automate the EXCEL spreadsheet reconciliation for Bridget.
- ◆ Made significant upgrades to the NAIP inspection process due to the upgrade to Oracle 9i.
  - \* Was able to construct a Client/Server application
  - \* Eliminated the Oracle Forms Interfaces because of the availability of ODBC connectivity. Oracle Forms are now used as a backup rather than first line.
  - \* Added realtime Reports Querying to the Arcmap interface.
  - \* Added Pivot Table and Excel spreadsheet enhancements to the arcmap interface.
- ◆ Provided a solution for the NAIP Inspectors to continue working during unexpected down time because of the unavailability of the GDW NAIPinspection layer.
- ◆ Provided and implemented a solution for the problem of selecting random tiles based on tiles flown instead of tiles received.

**New Data Management Procedures Implemented:**

- ◆ Data Storage on new data center archival equipment ES2900/LS8500.
- ◆ Migrating Data from ES3500/L700 to ES2900/SL8500.
- ◆ Cataloging Vault scanning data into Oracle catalog system.
- ◆ Data Storage of Vault scanning project data into APFO archive system.

## Provided project management for the following:

- ◆ NAIP Status web site and web services
- ◆ Redesign of Online Catalog
- ◆ Replacement of flight planning software
- ◆ APFO Intranet site development
- ◆ Geospatial Services legacy application conversion
- ◆ Web based project management system
- ◆ Online Order Entry System
- ◆ EarthWhere
- ◆ Data Center Design and Construction

## Data Management:

- ◆ Resource Data Gateway
  - \* Cataloged and managed 2,938 CCM Data sets or 35,256 individual files.
  - \* Cataloged and managed 2,436 CLU Data sets or 19,488 individual files.
- ◆ GDW
  - \* Provided data management support to the GDW operations by cataloging and archiving 168,299 2006 1 and 2 meter NAIP quarter quadrangles.
- ◆ EarthWhere Catalog
  - \* Cataloged 59,971 1 meter 2006 Quarter Quads (QQs) into the APFO Data Provisioning System.
- ◆ Oracle Catalog
  - \* Cataloged and managed 3500 2006 Compressed County Mosaics (CCM's) into the Oracle catalog system.
  - \* Cataloged and managed 168,299 2006 QQ's into the Oracle catalog system.
- ◆ Media Delivery
  - \* Delivered over 200TB of MDOQ and 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 2003	14	6 TB
NAIP 2004	18	7 TB
NAIP 2005	20	7 TB
NAIP 2006	22	9 TB
	-----	-----
	74	29 TB

**Design of New APFO Data Center**

◆ In FY2006, APFO received funds specifically identified ‘for the enhancement and management of the agriculture imagery catalog repositories and data warehouses’. The Functional Requirements were as follows:

- (1) Enhance APFO’s ability to archive historical film and to extend the storage capabilities of future annual NAIP acquisitions. APFO acquires approximately 30 TB (terabytes) of NAIP imagery annually. With current capabilities, APFO is able to maintain the most recent years of data on line, with all previous years stored “near line” (tape retrieval). This inhibits APFO’s ability to meet presidential and E-Gov initiatives of making our data easily retrieved and readily available.
- (2) Provide a standardized historical archive online for both federal and public use. This data is currently available only as a hardcopy photo, with several hours of staff labor required to produce a single photo. Providing a web based method of search and retrieval allows the customer to select only his or her Area of Interest.
- (3) Provide automated means for long-term archival and retrieval.



◆ APFO determined this project would occur in 2 parts:

- (1) Establishment of New Data Center – As stated previously, the existing server room cannot accommodate any more equipment. Over heating has also been a concern.
- (2) Purchase of equipment to accommodate archival and distribution of data.

◆ The new data center has been operational since March 2007. With the assistance of OCIO, TSD personnel APFO continues to transition all systems to the new space.

## Employee Training

- ◆ Microsoft TechNet Seminars
- ◆ Oracle
- ◆ ESRI 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 assist with web based applications in both business and Geospatial environments.

With the recent organizational change, TSB now has total of seven federal employees who continue to support, maintain, and develop production specific applications, database and Web Services on behalf of APFO and GDW requirements.

