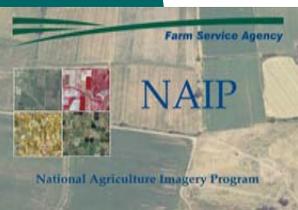


National Agriculture Imagery Program

NAIP Informational Meeting

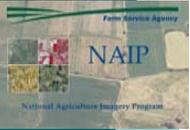


**July 19, 2006
Washington DC**

**W. Geoffrey Gabbott, Contracting Officer
USDA, FSA, Aerial Photography Field Office
Salt Lake City, Utah**

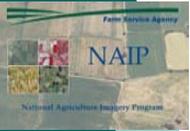


NAIP Informational Meeting



- **NAIP Contract Overview**
- **Future Procurement Plans**
- **Partnership Opportunities**
- **Cost Share Scenarios**
- **Benefits of Partnering**

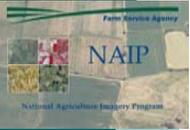
NAIP Contract Overview



NAIP Contract Description:

- **3 year ('04 '05 '06) Indefinite Delivery, Indefinite Quantity (IDIQ) type contract**
- **Awarded in 2004 to 10 contractors**
- **Task Orders competed using “best value” procurement process**
- **Performance Based Contract: defines end product rather than how to produce the product**

NAIP Contract Overview

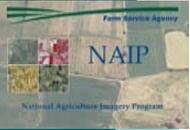


Best Value Procurement Process:

A competitive source selection process which evaluates contractor proposals according to:

- Technical merit
- Project management capabilities
- Past performance and quality assessment
- Pricing and other criteria

NAIP Contract Overview



Performance Based Contract:

- **Statement of work describes products and services to be provided by the contractor**
- **Defines required end products rather than a rigid “how to” set of specifications**
- **Allows innovative methods to produce the end product including film or digital options**
- **Has created opportunity for direct digital acquisitions**

2006 NAIP COVERAGE



3,015 Counties
181,957 DOQQs
2,601,081 Square Miles

**Texas only
state CIR**

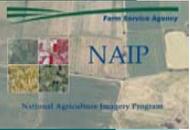
**All other states
Natural Color**

1 Meter Coverage **53,025 DOQQs**
2 Meter Coverage **128,932 DOQQs**

0 162.5 325 650 Miles



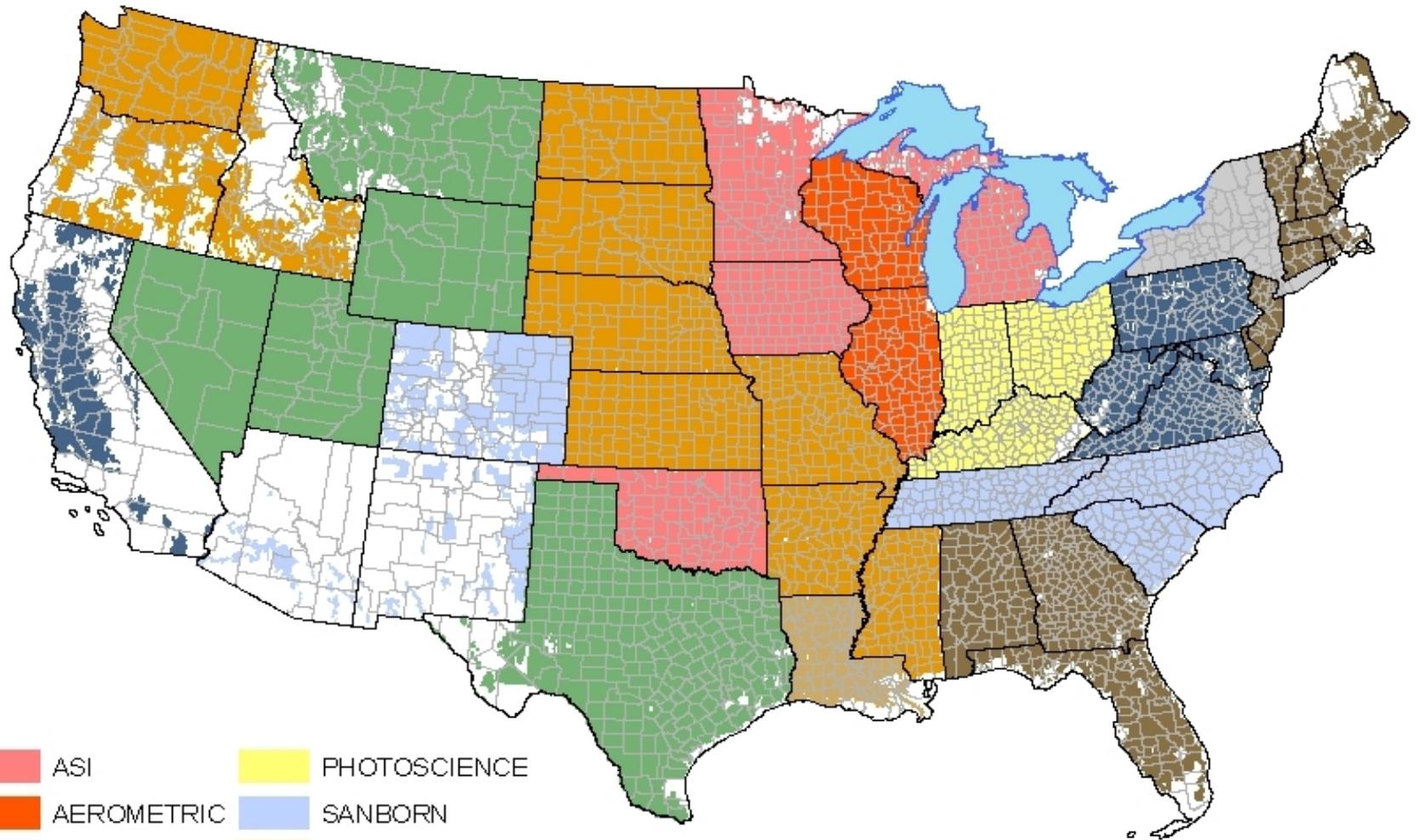
2006 NAIP Task Order



2006 Contracts – Final Awards:

<u>Rank</u>	<u>Contractor</u>	<u>DOQQs</u>	<u>Avg Price</u>	<u>Total Amount</u>
1	Surdex Corp	48,621	\$153.13	\$7,429,986.82
2	Photo Science	8,352	\$146.41	\$1,222,807.00
3	NW Geomatics	47,388	\$180.40	\$7,601,169.50
4	Sanborn Map	15,673	\$159.04	\$2,492,596.49
5	Aerial Services	19,212	\$154.74	\$2,972,927.00
6	Horizons	12,458	\$156.60	\$1,950,864.70
7	LandAir Map	15,163	\$160.38	\$2,431,825.00
8	AeroMetric	8,493	\$146.40	\$1,243,414.50
9	Vargis	3,878	\$176.00	\$682,529.00
10	Triathlon	2,819	\$164.40	\$463,443.60
Totals:		181,957	\$156.58	\$28,491,561.61

2006 NAIP Contractors

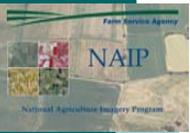
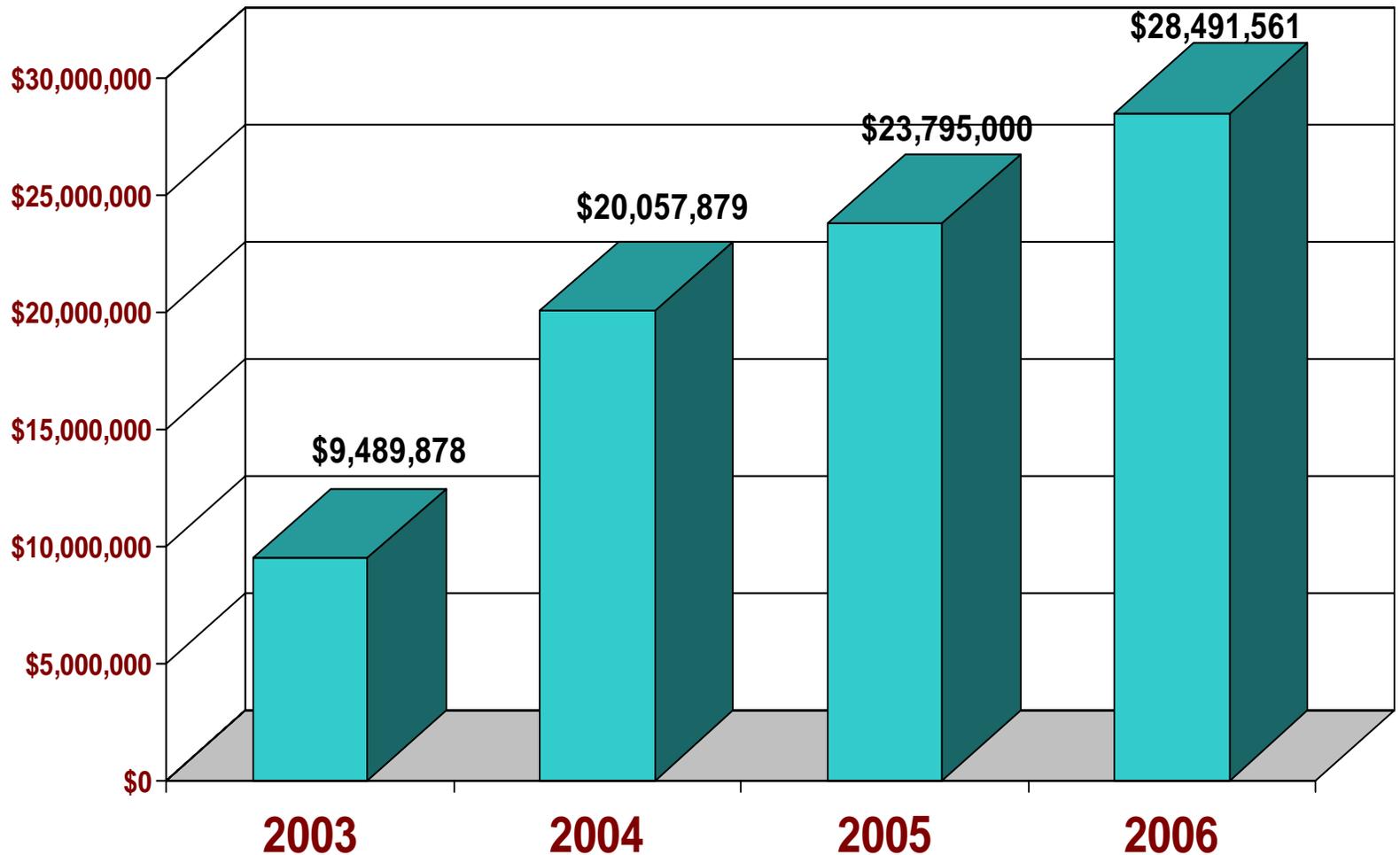


- | | |
|------------|--------------|
| ASI | PHOTOSCIENCE |
| AEROMETRIC | SANBORN |
| HORIZONS | SURDEX |
| LANDAIR | TRIATHLON |
| NORTHWEST | VARGIS |

2006 is final year of 3 year IDIQ contract

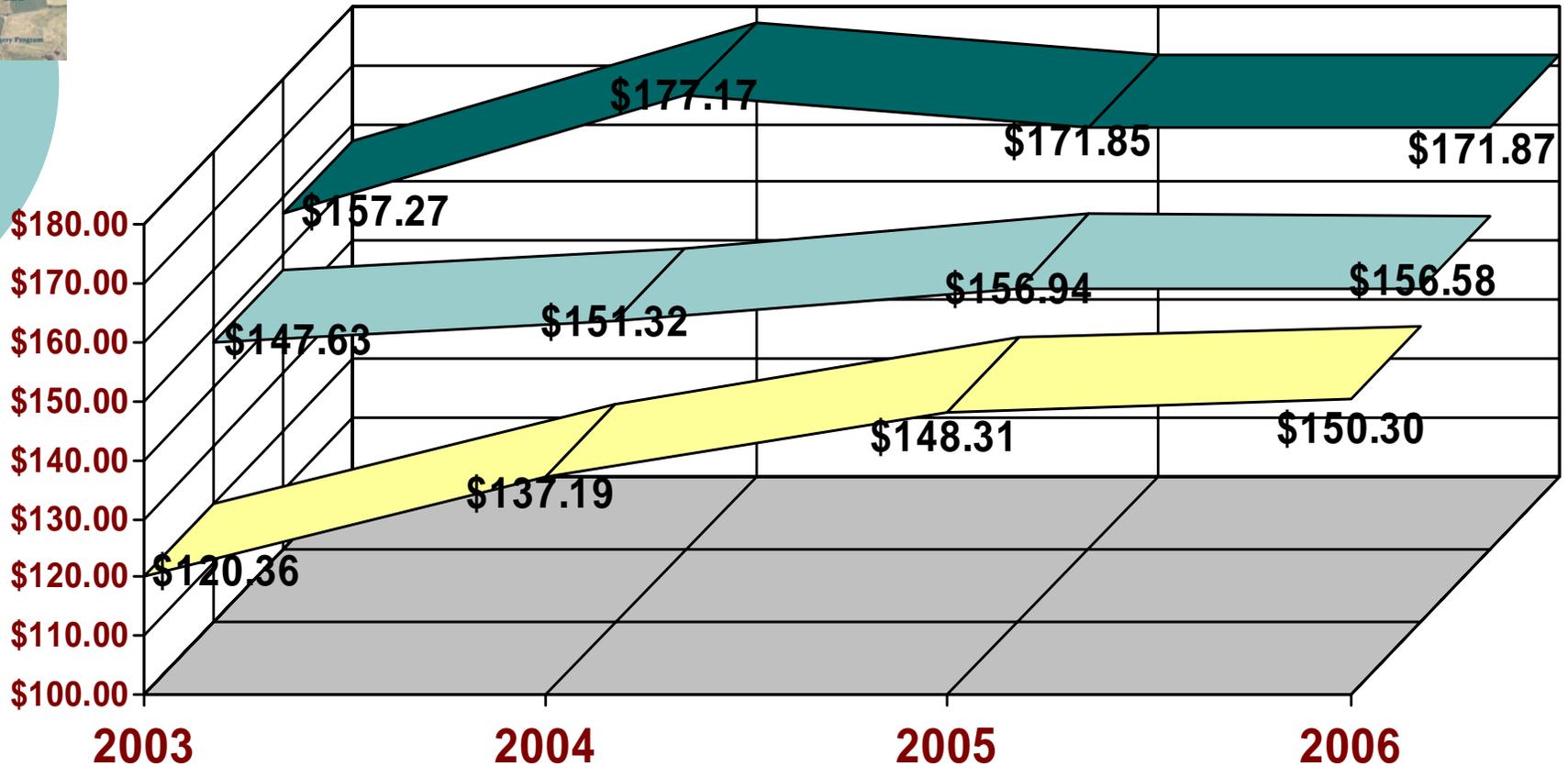
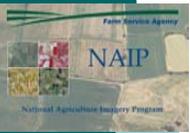
USDA NAIP HISTORY

Contract Awards 2003 - 2006



NAIP DOQQ Pricing History

2003 - 2006 USDA NAIP Contracts



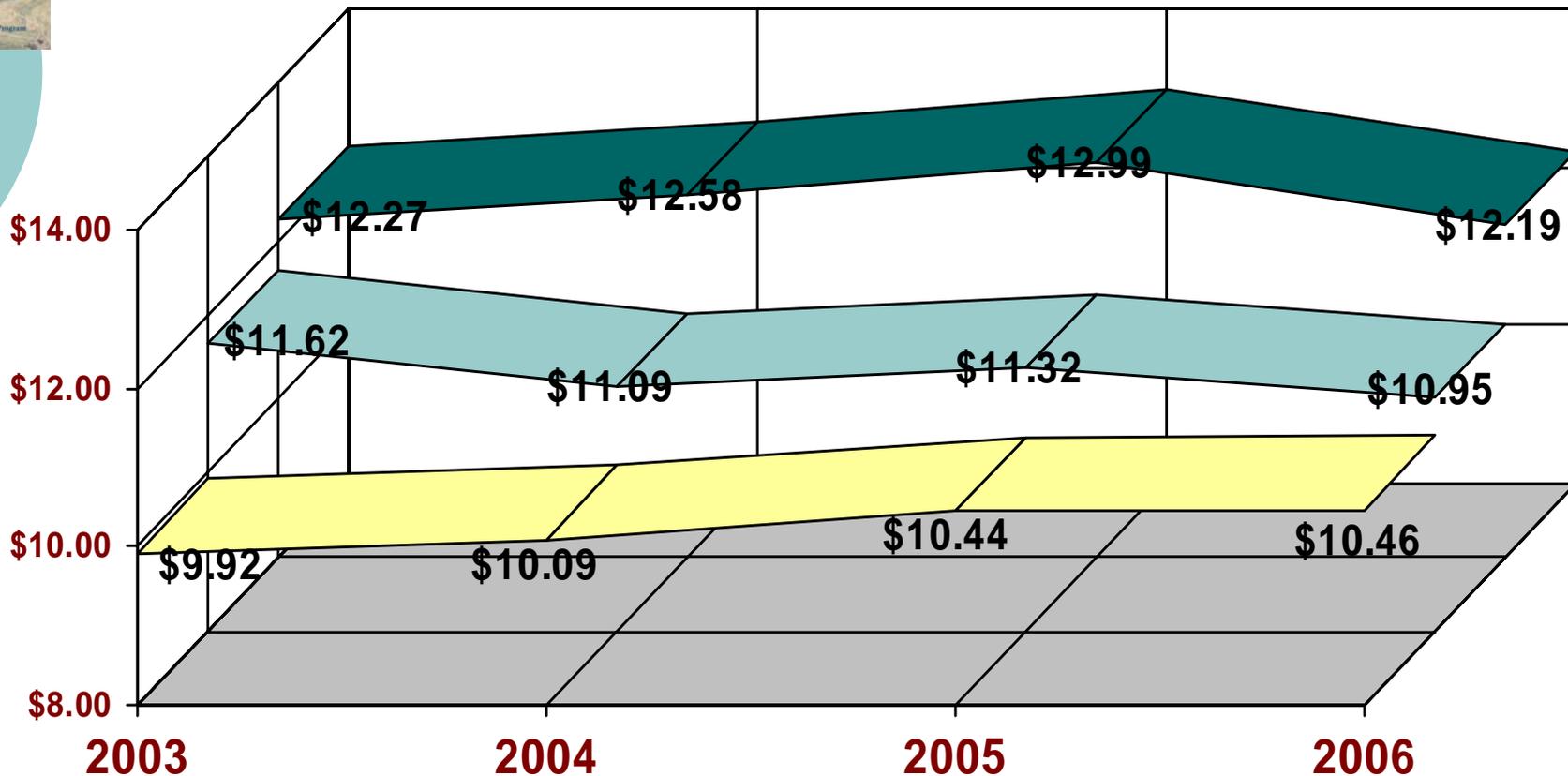
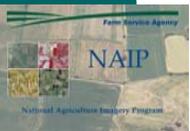
Two Meter

Combined Average

One Meter

NAIP Square Mile Pricing History

2003 - 2006 USDA NAIP Contracts

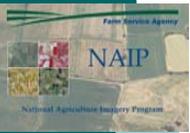


Two Meter

Combined Average

One Meter

NAIP Contract Aircraft



Up To 50 Aircraft utilized for Imagery Acquisition Nationwide

High Performance Piston Singles



Light Piston Twins



Small Turboprops



Lear jets



Film Camera Equipment

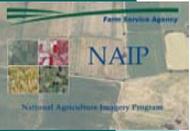
Precision Mapping Cameras

FAA Approved Camera Ports & Mounts

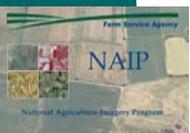
Holds 1 x 500 foot Film Rolls

Approximately 300 Pounds

\$250k – \$600k costs



Airborne Digital Sensor Systems



Large Format Precision Digital Cameras

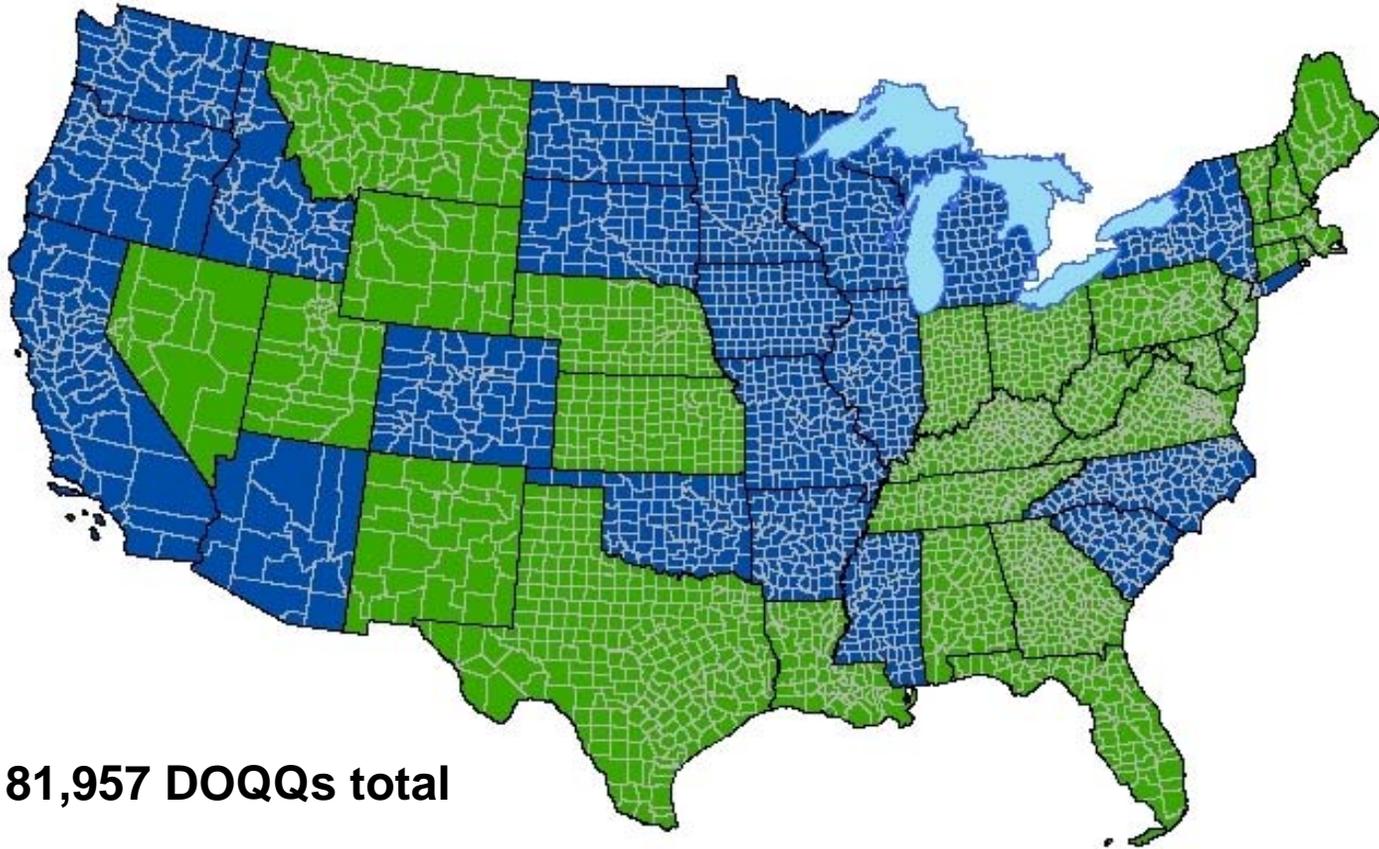
Leica ADS40 System:
Multispectral CCD lines,
2 x 12,000 pixels

Vexcel UltraCam System:
Fixed digital
array camera

Z/I DMC System:
Fixed digital
array camera



2006 NAIP DIGITAL OR FILM ACQUISITION AREAS

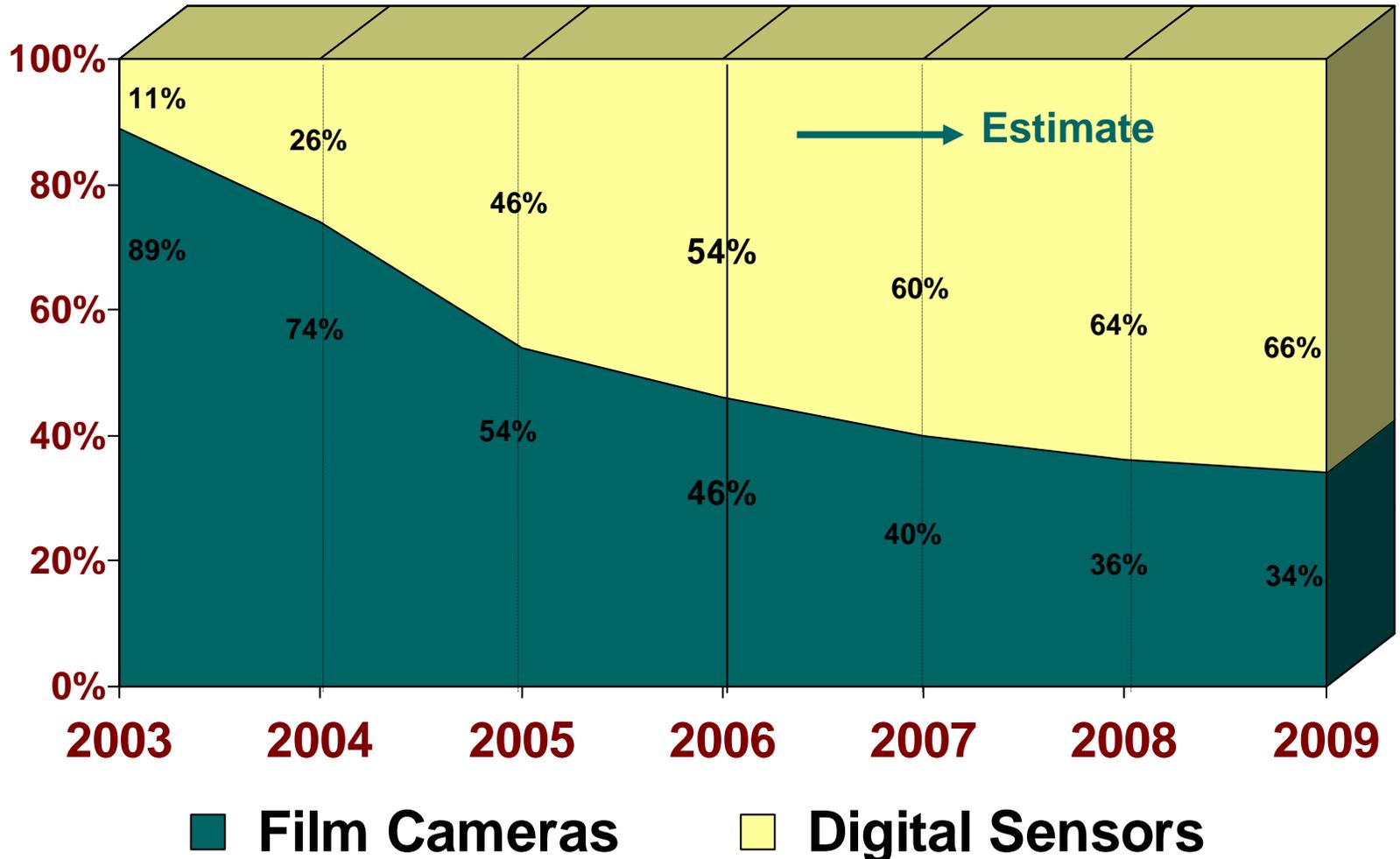


181,957 DOQQs total

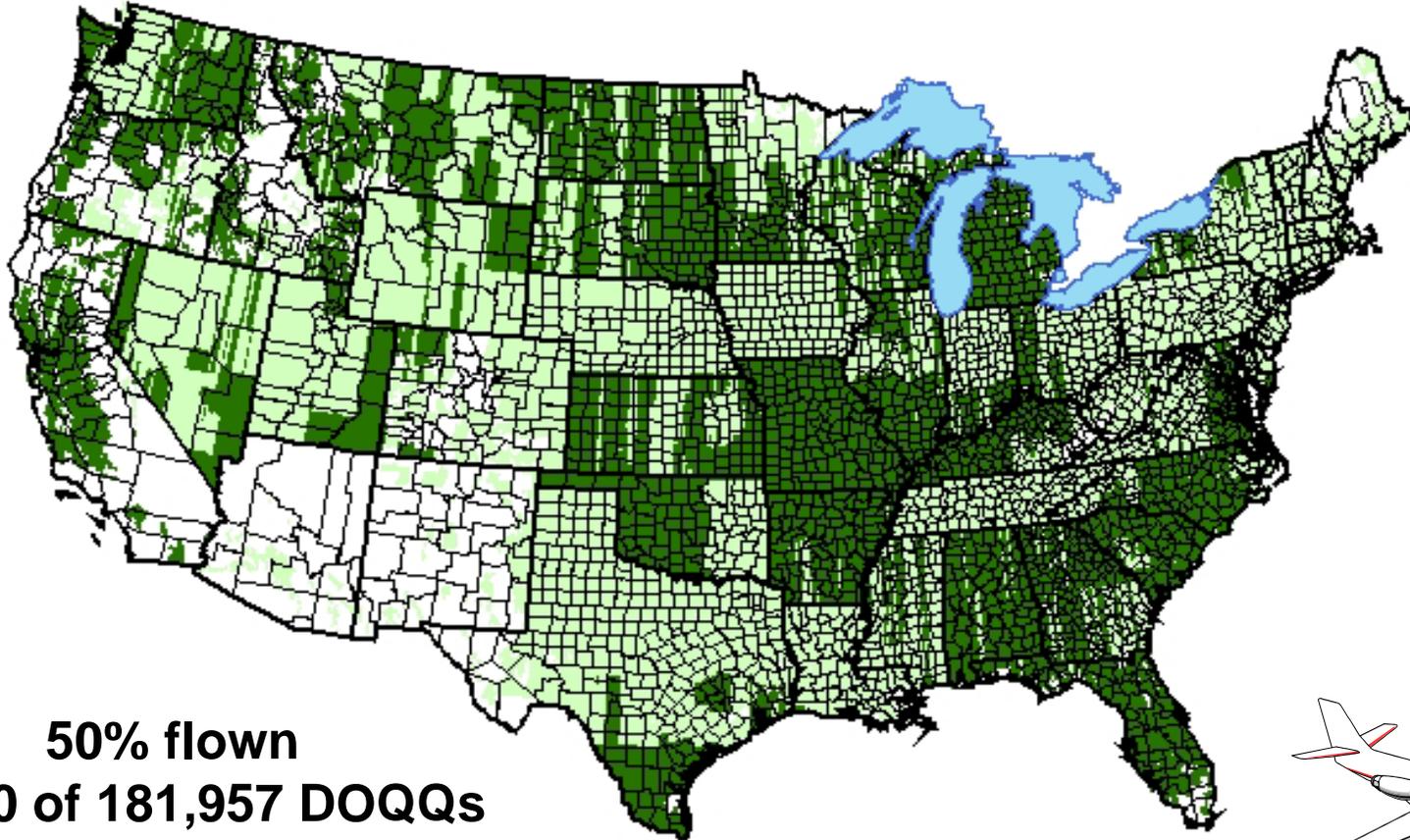
	Digital Acquisition	98,772 DOQQs	\$159.67 average price
	Film Acquisition	83,185 DOQQs	\$152.92 average price

NAIP Camera Trends

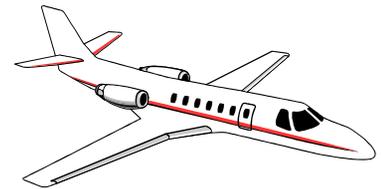
Film Cameras vs. Digital Sensors

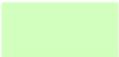


2006 NAIP IMAGERY STATUS



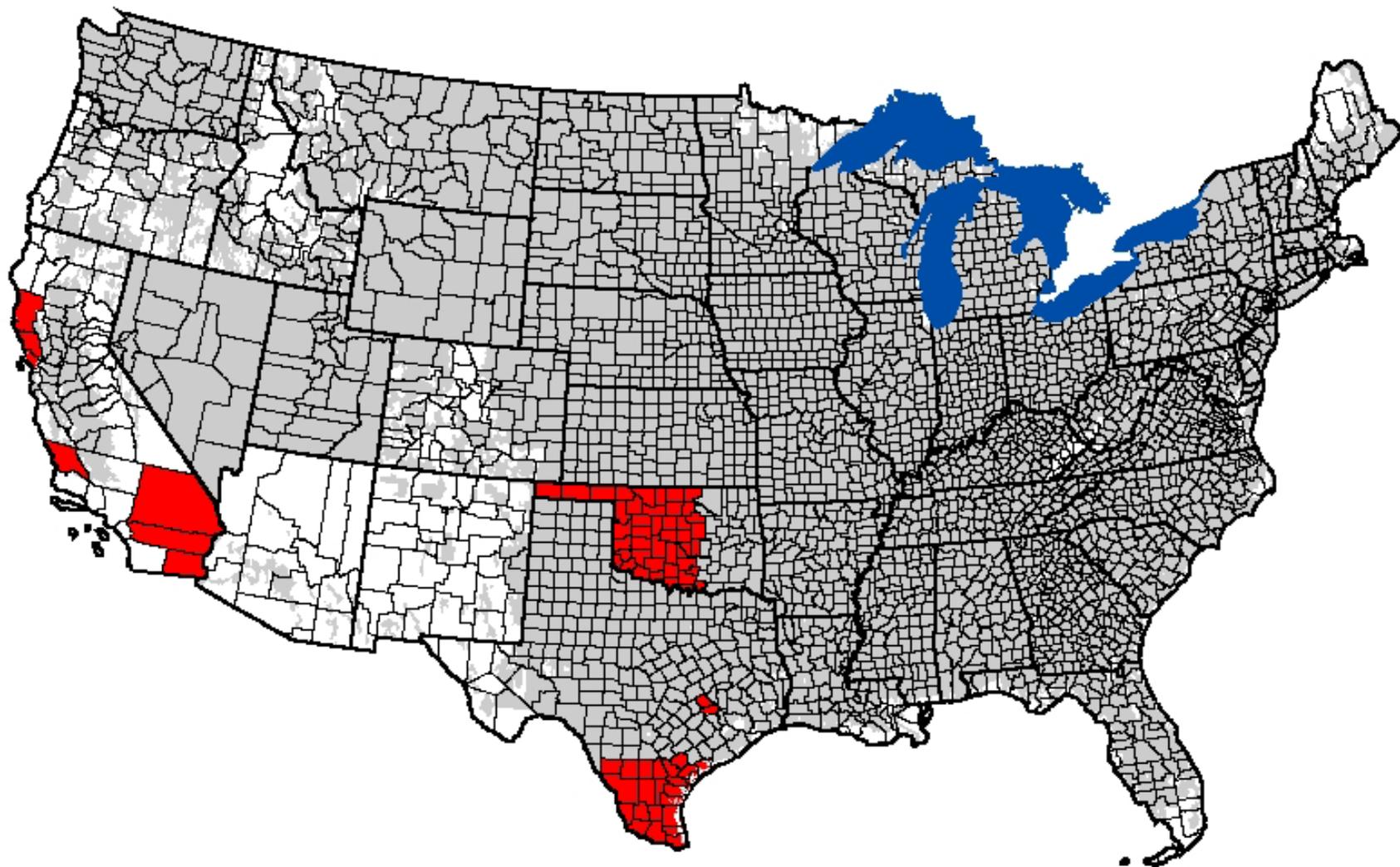
50% flown
90,820 of 181,957 DOQQs



-  AREAS FLOWN
-  AREAS CONTRACTED

www.apfo.usda.gov

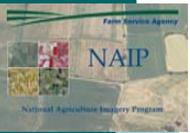
2006 NAIP COMPRESSED COUNTY MOSAICS (CCM)



 COUNTIES AVAILABLE (INTERIM VERSION ONLY)
 COUNTIES CONTRACTED

www.apfo.usda.gov

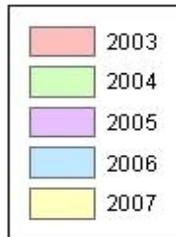
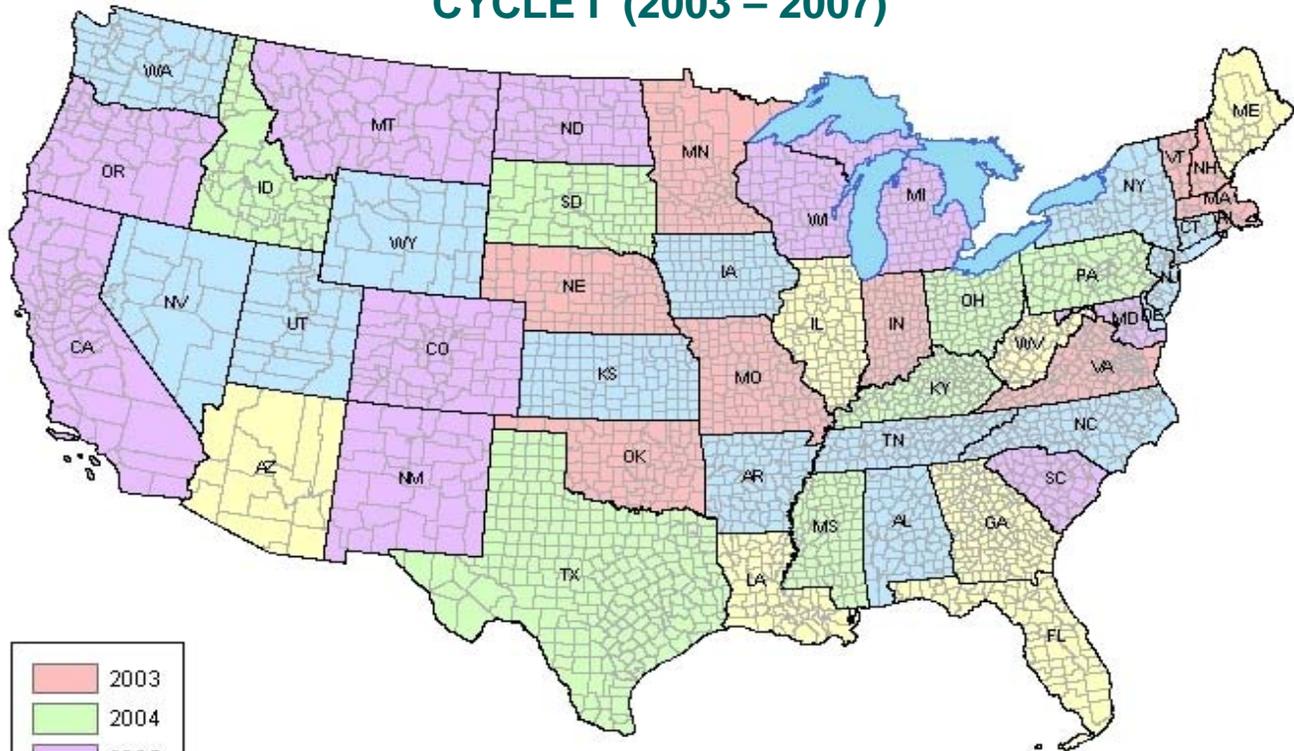
Future NAIP Contract Plans



NATIONAL AGRICULTURE IMAGERY PROGRAM PROPOSED 5 YEAR 1 METER CYCLE

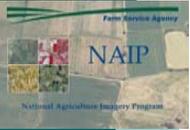
July 7, 2006

CYCLE I (2003 – 2007)



Approximately 10 states or 20% one meter coverage per year

Future NAIP Contract Plans*

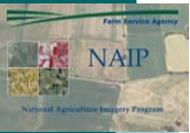


Three year ('07 '08 '09) IDIQ, Performance Based Contract

- 10 states 1m orthobase update
- 38 states 2m compliance
- Anticipate awards to fewer than 10 contractors

** May be impacted by the Imagery for the Nation program:*

Future NAIP Contract Plans



The Vision *The nation will have a sustainable and flexible digital imagery program that meets the needs of local, state, regional, tribal, and federal agencies.*

By Tony Spier, President, NSGIC

The National States Geographic Information Council (NSGIC) is working with the National Digital Orthophoto Program (NDOP) Committee and the Federal Geographic Data Committee (FGDC) to create a new nationwide aerial imagery program that will collect and disseminate standardized multi-resolution products on set schedules. Local, state, regional, tribal, and federal partners will be able to exercise buy-out options for enhancements that are needed by their organizations. The imagery acquired through this program will remain in the public domain and archived to secure its availability for posterity.

The Program

This is a massive undertaking that will require two separate, but well-coordinated, programs.

The existing National Aerial Imagery Program (NAIP) administered by the U.S. Department of Agriculture will be enhanced to provide annual one-meter imagery over all states, except Alaska (see below) and Hawaii, which will be acquired by NAIP every three years. This program will typically collect imagery during the growing season (leaf on) in natural color.

A companion program will be administered by the U.S. Geological Survey (USGS). Under this program, Alaska will receive one-meter imagery for the entire state once every five years. This program will also produce one-foot-resolution imagery once every three years for all states east of the Mississippi River and all counties west of the Mississippi River with population densities greater than 25 people per square mile. This program will typically acquire imagery during winter and spring months (leaf off) in natural color.

Value of Imagery

Orthoimagery provides the visual context of an aerial photograph while being as accurate as a map for measurements. These qualities allow users to:

- Measure distance.
- Calculate areas.
- Determine shapes of features.
- Calculate directions.
- Determine accurate coordinates (locations).
- Determine land cover and use.
- Perform change detection.

Orthoimagery is displayed in E-911 response centers to dispatch first responders to exact locations and for fire departments to call from mobile phones. Police use spatial data and trace workers in fire trucks analyze orthoimagery before responding to emergencies. Digital images are used to collect a wide variety of information, including transportation maps, wetlands, streams, shorelines, building outlines, timber stands, land-use patterns, farm fields, and crop types.

Local governments rely on orthoimagery to map land property boundaries and manage their streets and other infrastructure assets. Orthoimagery serves as a seamless base layer to which many other layers are registered. It provides visual information for the following partial list of applications:

- Homeland security, homeland defense, and emergency management
- Public safety planning, response, and mitigation
- Tax parcel mapping
- Transportation management, operations, and planning
- Economic development
- Utilities management, operations, and planning
- Land planning and zoning
- Drainage planning and management
- Code and permit enforcement
- Agriculture
- Insurance
- Surveying and mapping
- Environmental management, planning, and regulation
- Education
- Natural resource inventories and assessments

Program Benefits

This program can be operated and managed using federal contracts with multiple professional firms at a lower cost (~25%) than the current independent contracts managed by federal, state, and local governments. It offers outstanding value to local governments and smaller states because price breaks are achieved by contracting for larger areas.

The national program cost estimate of \$1.1 billion per year includes imagery acquisition and processing costs, systems management, quality control, quality assurance, data distribution, and archiving. Generally, these costs add approximately 14 percent to orthoimagery production costs.

A national imagery program lacking the suite of coordination mechanisms outlined here (current state) would cost nearly \$495 million over three years. Cost savings to four states can reduce this to ~\$333 million. The first two are the large area and other cost savings cited above. The third (~25%) comes from reducing duplication of effort and program redundancy. The final factor is a 10 percent return on investment (ROI) value that is achieved through adherence to standards. NSGIC and NDOP estimate the following cost savings for each of these factors during each three-year cycle:

Large area	\$57,717,000
Other costs	7,510,000
Duplication	53,644,000
ROI	40,770,000
Total savings	\$159,641,000

IMAGERY FOR THE NATION

BY THE NATIONAL STATES GEOGRAPHIC INFORMATION COUNCIL (NSGIC)

Six-inch resolution imagery



Natural color image from SURDEX, Palm Beach, Florida

Image type	Natural color
Leaf on or off	On
Cloud cover	0%
Horizontal accuracy	2.3 feet at 95% NSSDA (National Standard for Spatial Data Accuracy)



Frequency	Every three years
Local cost share	50%
Federal program steward	USGS

Buy-up options	100% cost for color-infrared or four-band product
	100% cost for increased frequency
	100% cost for increased footprint
	100% cost for increased horizontal accuracy
	100% cost for three-inch resolution
	100% cost for better elevation data products
	100% cost for removal of building lean (true ortho)

One-foot resolution imagery



Leaf/true color image of tornado damage, Maryland Department of Natural Resources

Image type	Natural color
Leaf on or off	On
Cloud cover	0%
Horizontal accuracy	5 feet at 95% NSSDA



Frequency	Every three years
Local cost share	None
Federal program steward	USGS

Buy-up options	100% cost for color-infrared or four-band product
	100% cost for increased frequency
	100% cost for increased footprint
	100% cost for increased horizontal accuracy
	100% cost for sampling product to lower resolution
	100% cost for six-inch resolution
	100% cost for better elevation data products
	100% cost for removal of building lean (true ortho)

One-meter resolution imagery



Natural color image of Adams County, Nebraska, USDA NAIP program

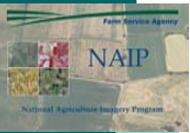
Image type	Natural color
Leaf on or off	On
Cloud cover	10%
Horizontal accuracy	5 feet at 93% NSSDA



Frequency	Every year in the 48 conterminous states; every five years in Alaska; every three years in Hawaii, insular areas, and territories
Local cost share	None
Federal program steward	U.S. Department of Agriculture, except Alaska USGS for Alaska

Buy-up options	100% cost for color-infrared or four-band product
	100% cost for increased horizontal accuracy

Imagery For The Nation



Federal Program Steward:
**U.S. Department of Agriculture
Farm Service Agency
Except USGS for Alaska**

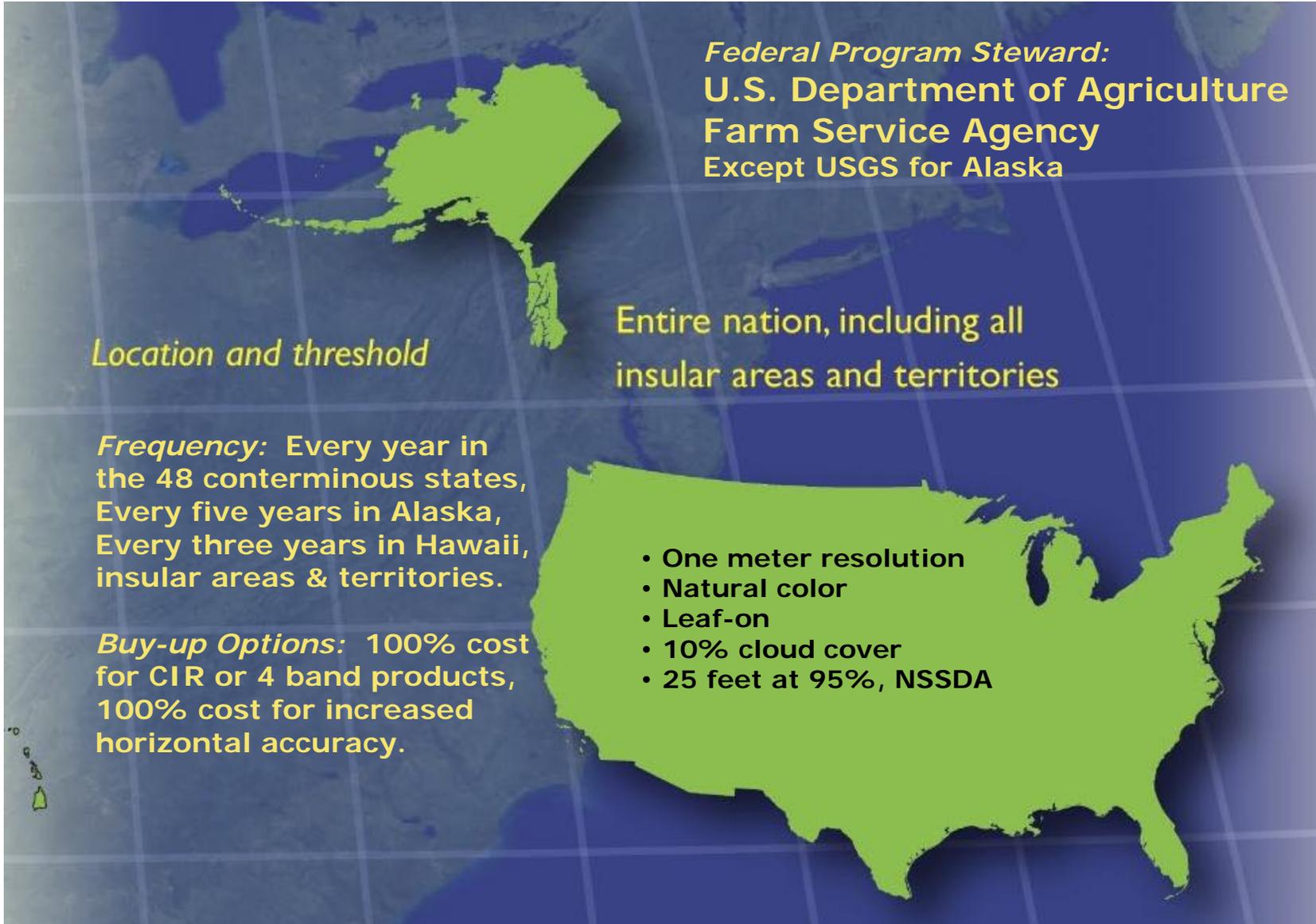
Location and threshold

Entire nation, including all insular areas and territories

Frequency: Every year in the 48 conterminous states, Every five years in Alaska, Every three years in Hawaii, insular areas & territories.

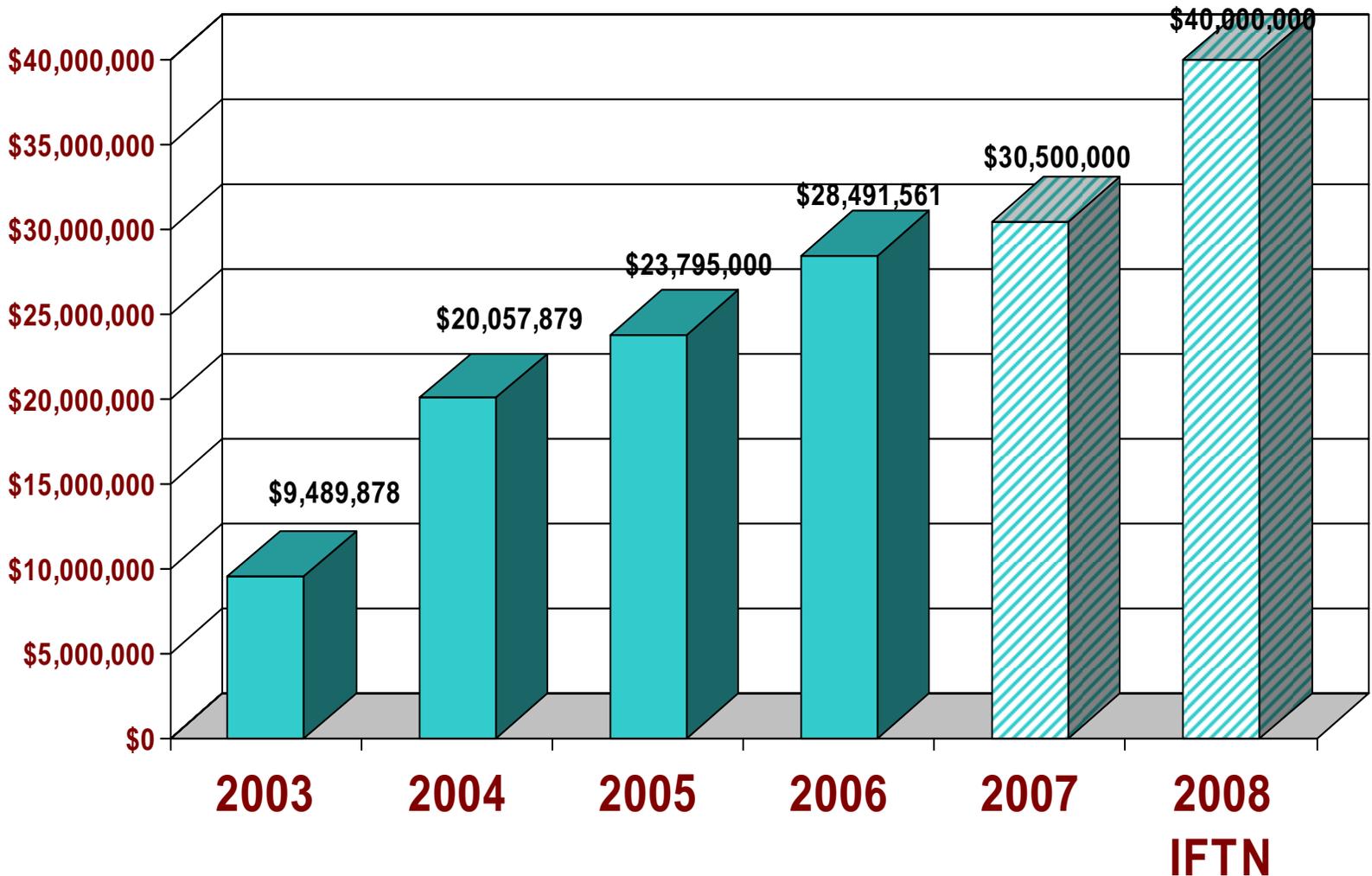
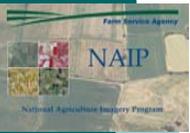
Buy-up Options: 100% cost for CIR or 4 band products, 100% cost for increased horizontal accuracy.

- One meter resolution
- Natural color
- Leaf-on
- 10% cloud cover
- 25 feet at 95%, NSSDA

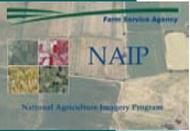


USDA NAIP-IFTN FORECAST

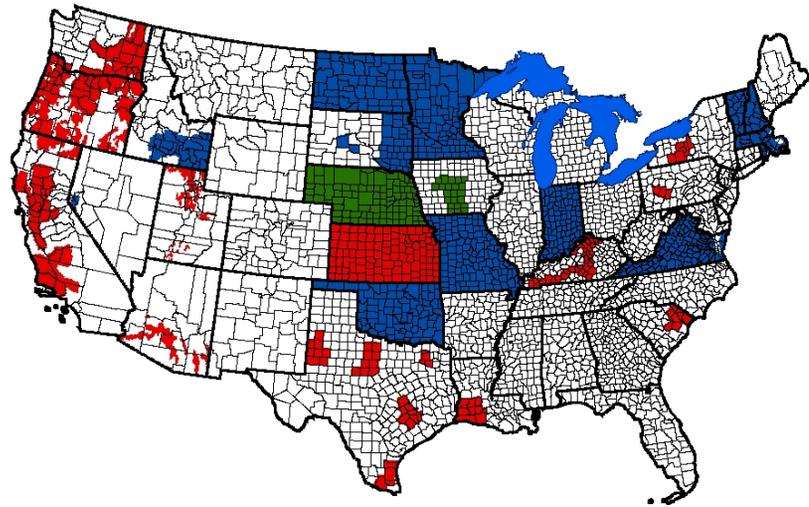
Contract Estimates for 2007 and 2008



NAIP Partnership Opportunities



2003 NAIP



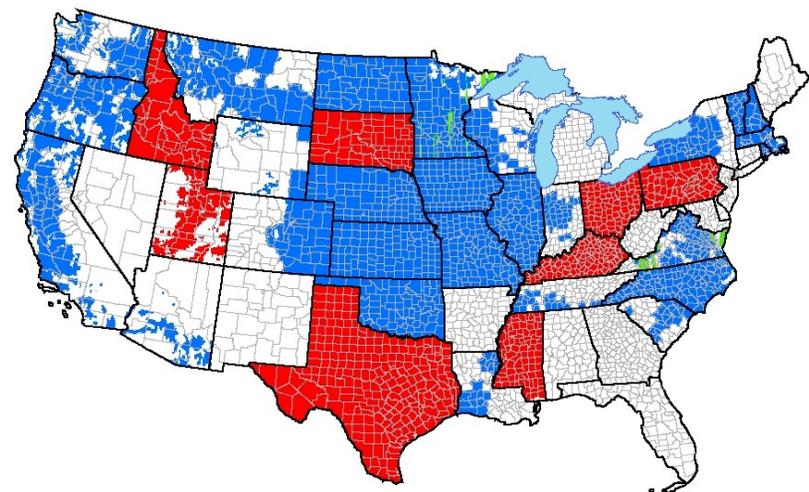
1 METER 2 METER DIGITAL

■ 1 METER ■ 2 METER ■ DIGITAL

1,038 Counties



2004 NAIP



■ 1 METER STATES

■ 2 METER STATES

■ 1 METER REPLACEMENT IMAGERY

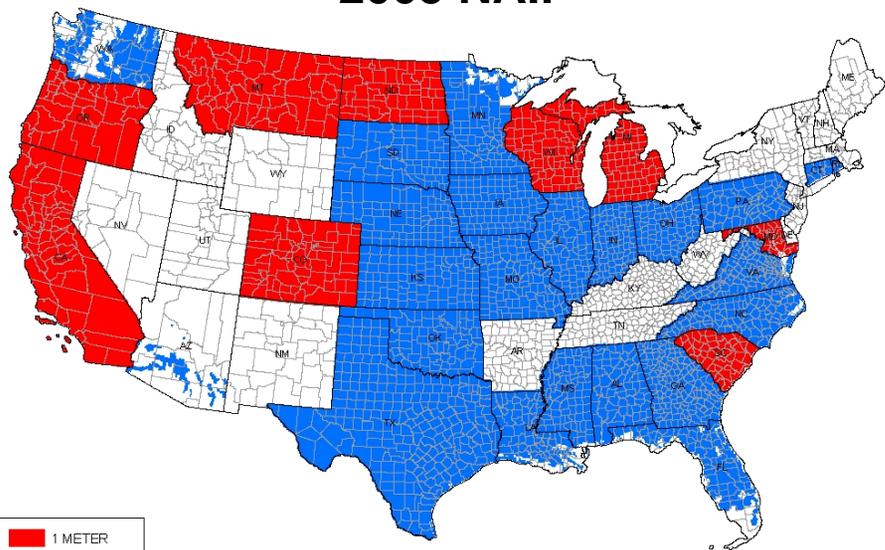
2,089 Counties

USDA-FSA-APFO-Salt Lake City, Utah

U.S. Department of Agriculture
 NATIONAL AGRICULTURE IMAGERY PROGRAM
 SOLICITATION NO. USDA-NAIP-3-04
 NATIONAL COVERAGE MAP

MAY 24, 2005

2005 NAIP



■ 1 METER

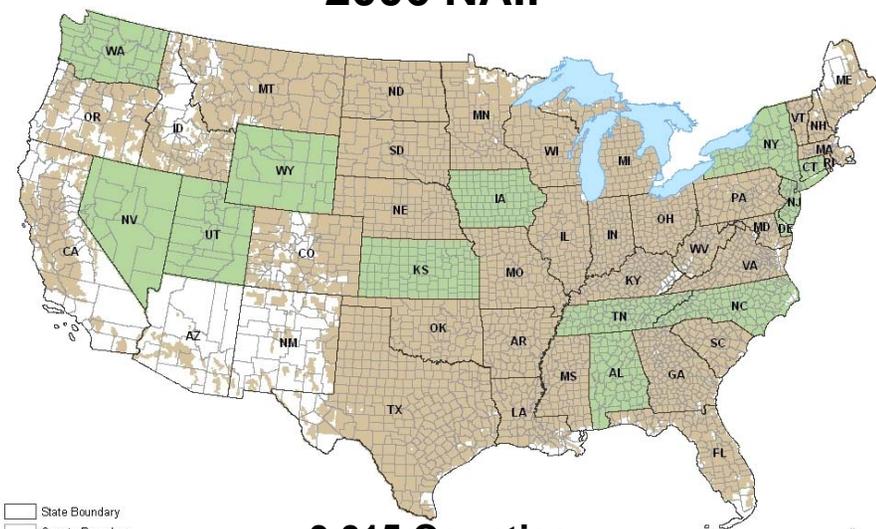
■ 2 METER

□ NOT FLOWN

2,445 Counties

USDA FSA APFO

2006 NAIP



□ State Boundary

□ County Boundary

■ 1 Meter Coverage

■ 2 Meter Coverage

3,015 Counties

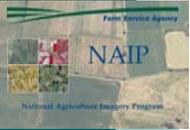
0 162.5 325 650

1:100,000



USDA-FSA-APFO

NAIP Partnership Agreements



2003 – 2006 NAIP Partners:

FEDERAL AGENCIES:

Natural Resource Conservation Service

U.S. Forest Service

U.S. Geological Survey

Bureau of Land Management

U.S. Air Force Space Command

U.S. Department of Interior Agencies

STATE AGENCIES:

California, Colorado, Idaho, Illinois, Kentucky, Maryland,

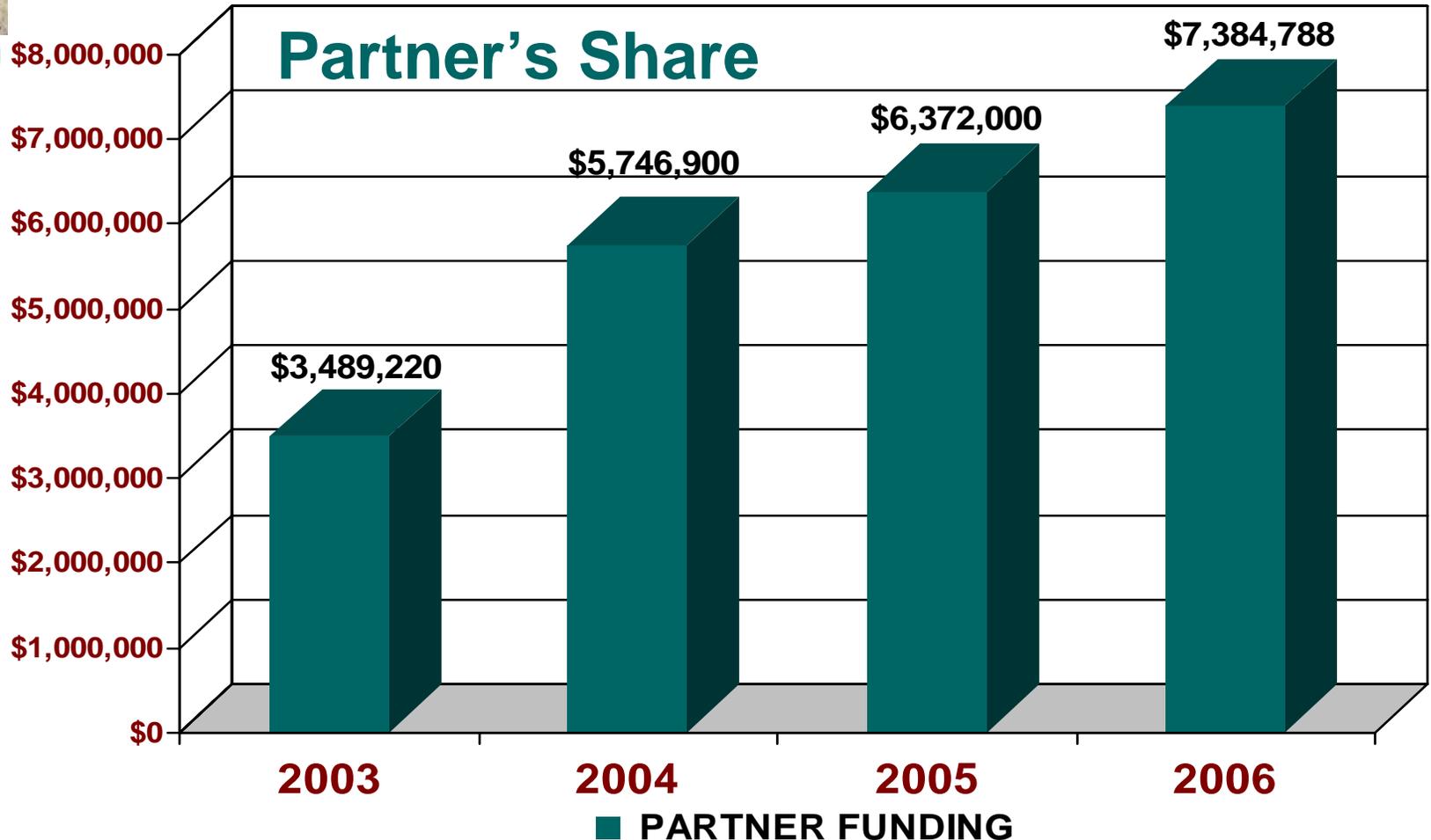
Michigan, Minnesota, Missouri, Montana, Nevada, North

Carolina, Ohio, Oklahoma, Oregon, Pennsylvania,

Tennessee, Texas, Utah, Washington

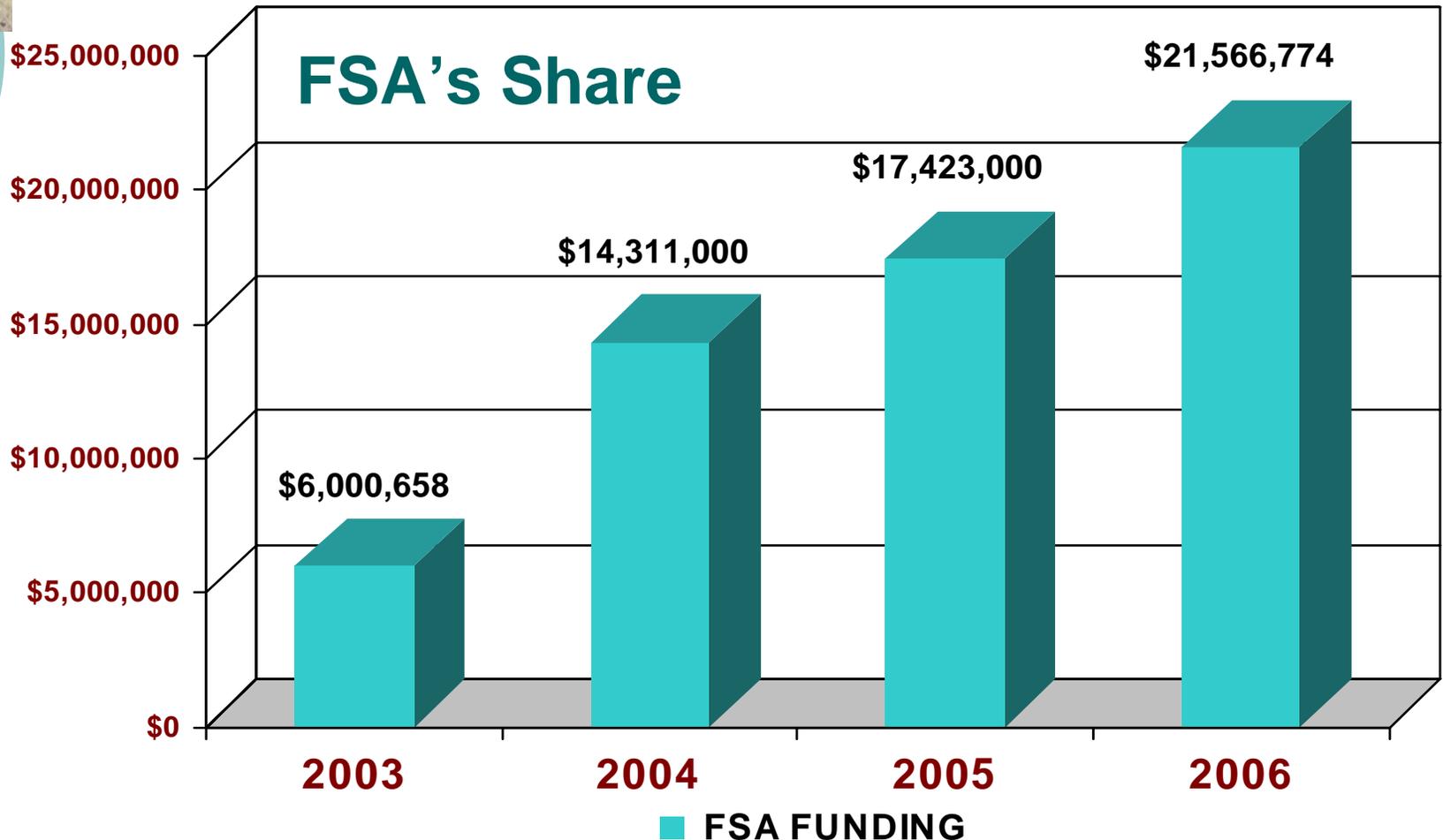
Partner's NAIP Funding History

2003 - 2006 USDA NAIP Contracts

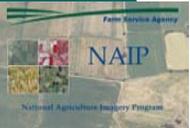


FSA's NAIP Funding History

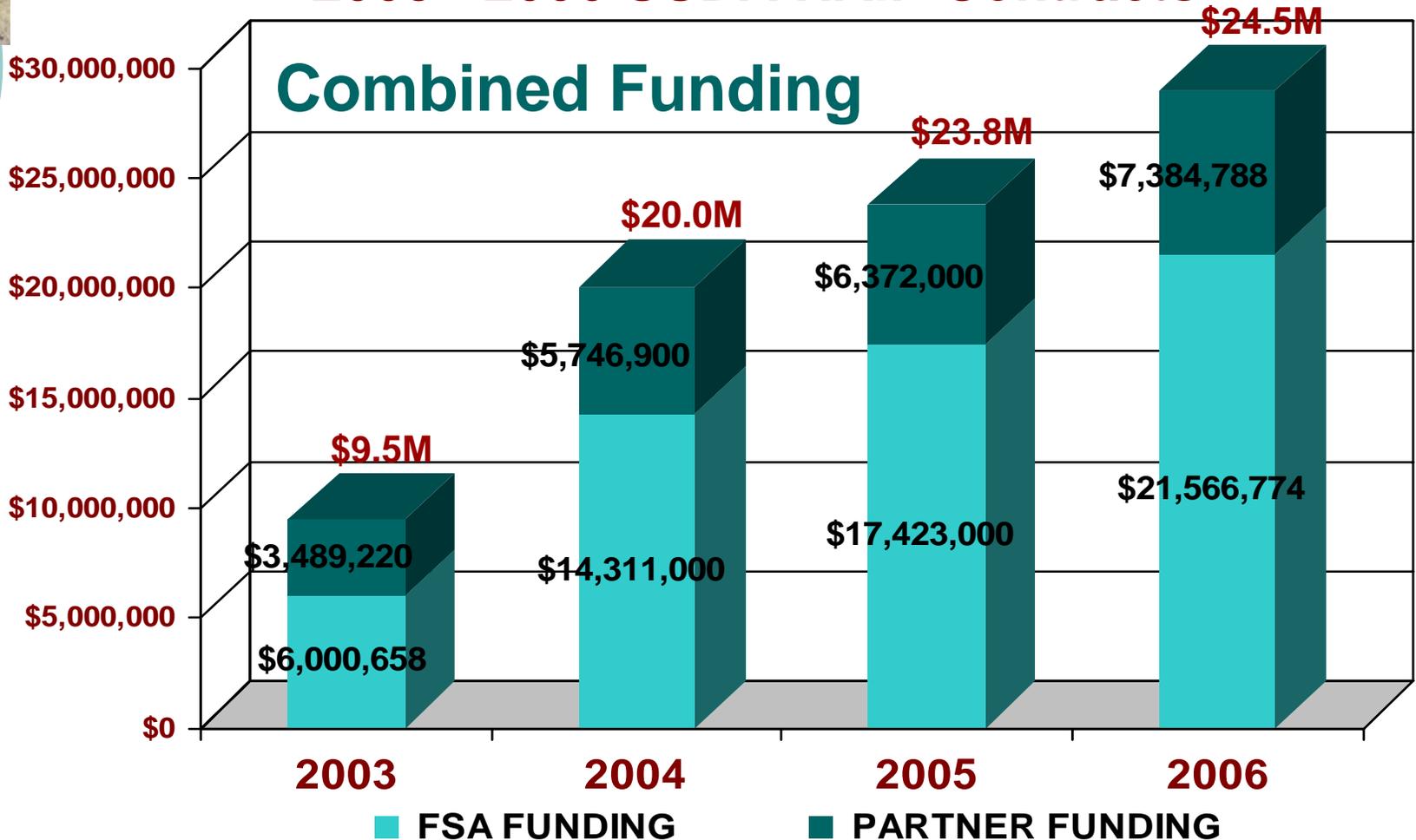
2003 - 2006 USDA NAIP Contracts



NAIP Funding History

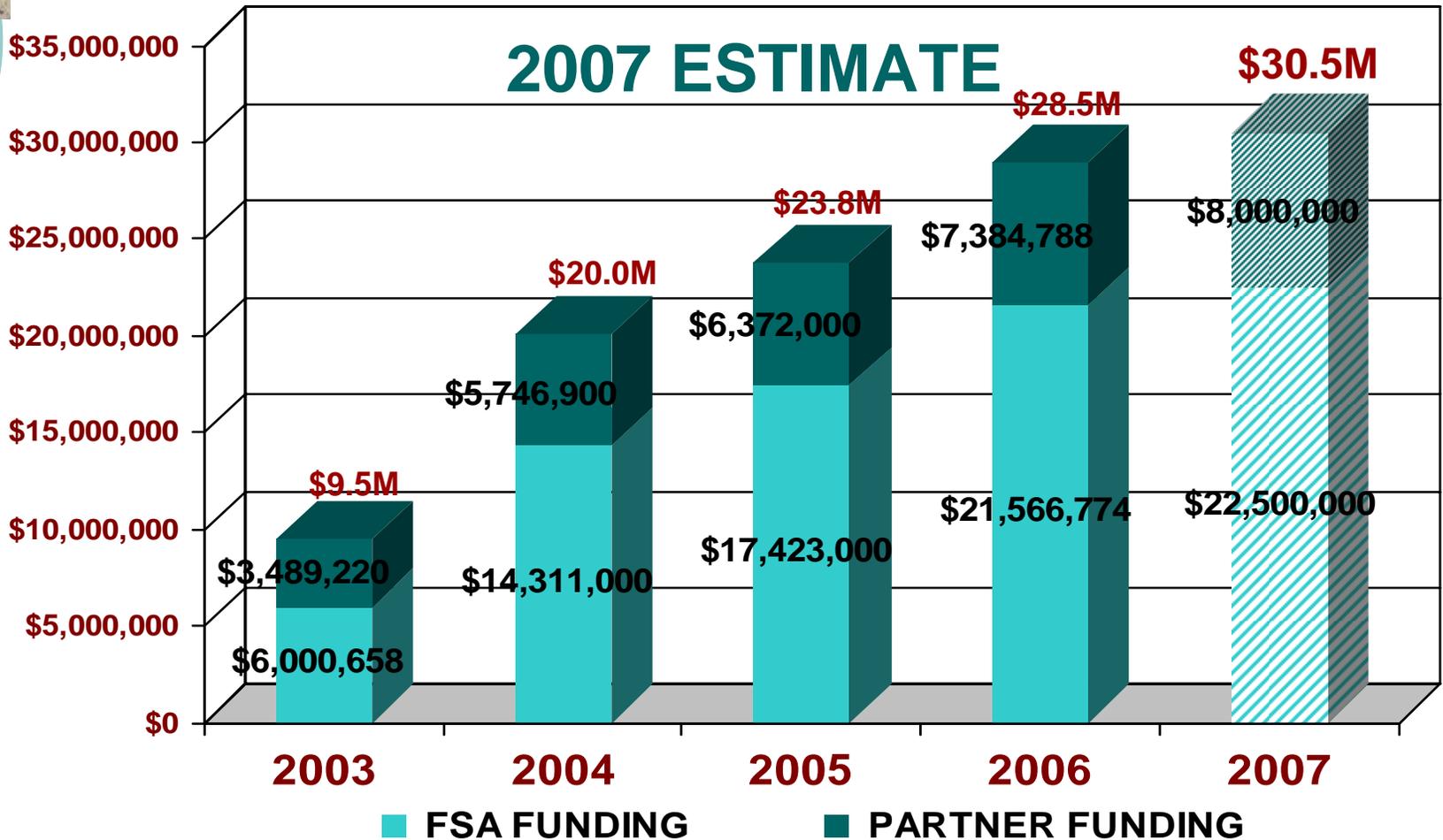


2003 - 2006 USDA NAIP Contracts



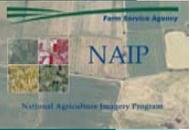
NAIP Funding History

2003 - 2006 USDA NAIP Contracts

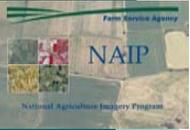


Partnership Opportunities

- Add DOQQ coverage to FSA requirements
 - Areas must be contiguous and/or substantial size
- Upgrade imagery resolution from 2m to 1m
 - All imagery within a project area must be consistent
- Change band (CP or CIR) with FSA approval
- Other products must be contracted directly with the NAIP contractor



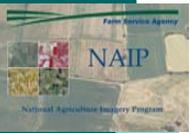
Partnership Opportunities



Why partner?

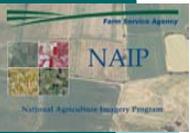
- Compressed County Mosaics (CCM) on delivery from vendors (30 days from flight)
- Quarter Quad Delivery (full resolution imagery)
- Cost effective acquisition of imagery
- Ensure coverage for state
 - States with cost sharing not dropped in 2005
 - FSA requirements are for agricultural land
- Ensure program continuity

Partnership Deliverables



- Single copy of deliverables on CD/DVD for CCMs and tape or hard drive for tiles
- “Interim” CCMs delivered after APFO receipt (“final” upon tile acceptance)
- Full Resolution Tiles delivered upon APFO acceptance (before September 30 of the following year)
- FGDC Compliant metadata

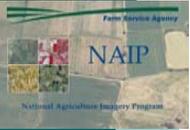
Federal Partnership Requisites



- **Single POC for department or agency**
 - Act as lead POC for the partnership
 - Authorize to commit funding for the partnership
 - Coordinate agreement and funding
- **Standard reimbursable agreement**
 - Must include accounting data
 - Signed by 31 December
- **Responsible for distributing data to the agency users**



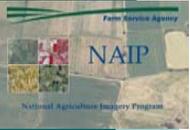
State Partnership Requisites



- **Single POC for state/county or group of local agencies**
 - Act as lead agency for the partnership
 - Authorize to commit funding for the partnership
 - Coord any “intrastate” agreements and funding
- **Standard “state” reimbursable agreement**
 - Must include accounting data
 - Signed by 31 December
- **Responsible for distributing data within the partners**



Cost Share Scenarios



2007 Cost Estimate

**1 meter imagery - \$180 per DOQQ
\$13 per Sq. Mi.**

(2006 average: \$171.87 and \$12.19)

**2 meter imagery - \$150 per DOQQ
\$11 per Sq. Mi.**

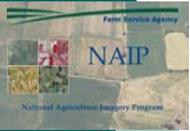
(2006 average: \$150.30 and \$10.46)

Cost Share Scenarios

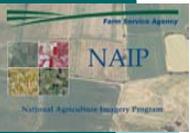
Partnership agreements are based on official government cost estimate, regardless of actual negotiated contract amount

FSA administrative fee is not required

NAIP is a super deal



NAIP Partnership Scenarios



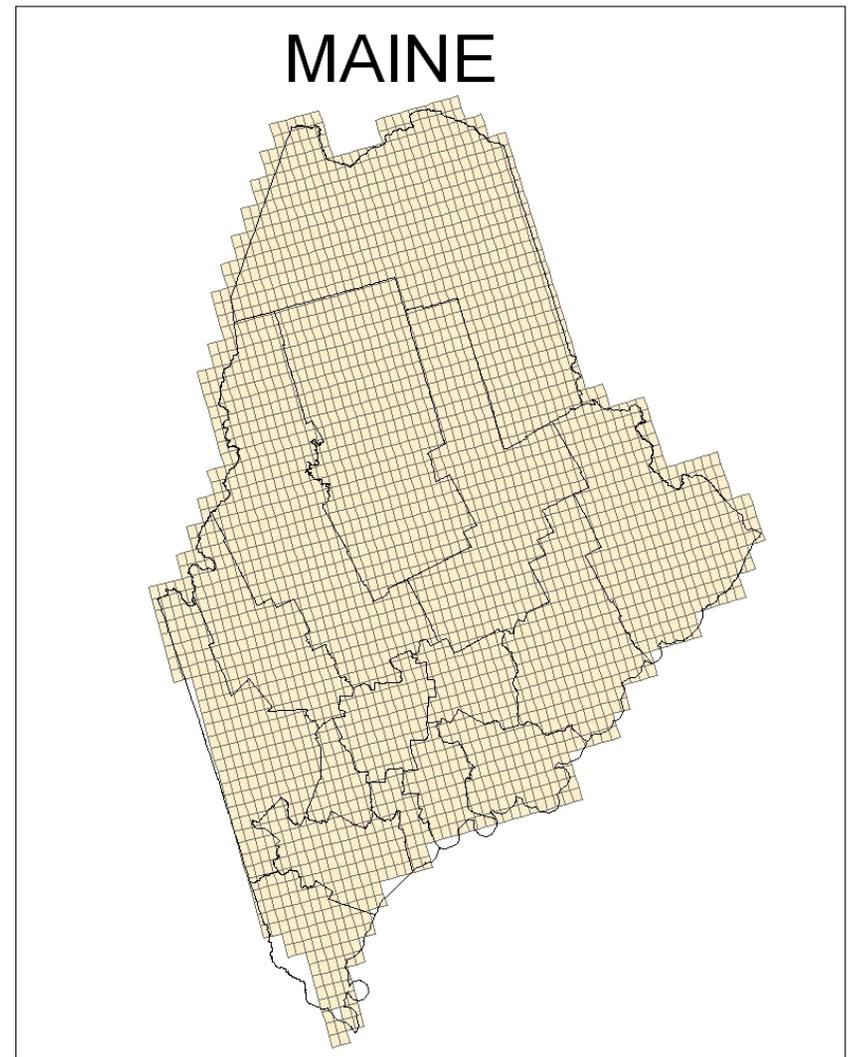
2007 NAIP Estimate
for Maine
(1m, natural color)

2,847 DOQQs @ \$180
= \$512,460

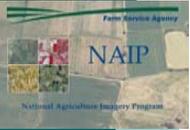
2 way share = \$265,230

3 way share = \$170,820

4 way share = \$128,115



NAIP Partnership Scenarios



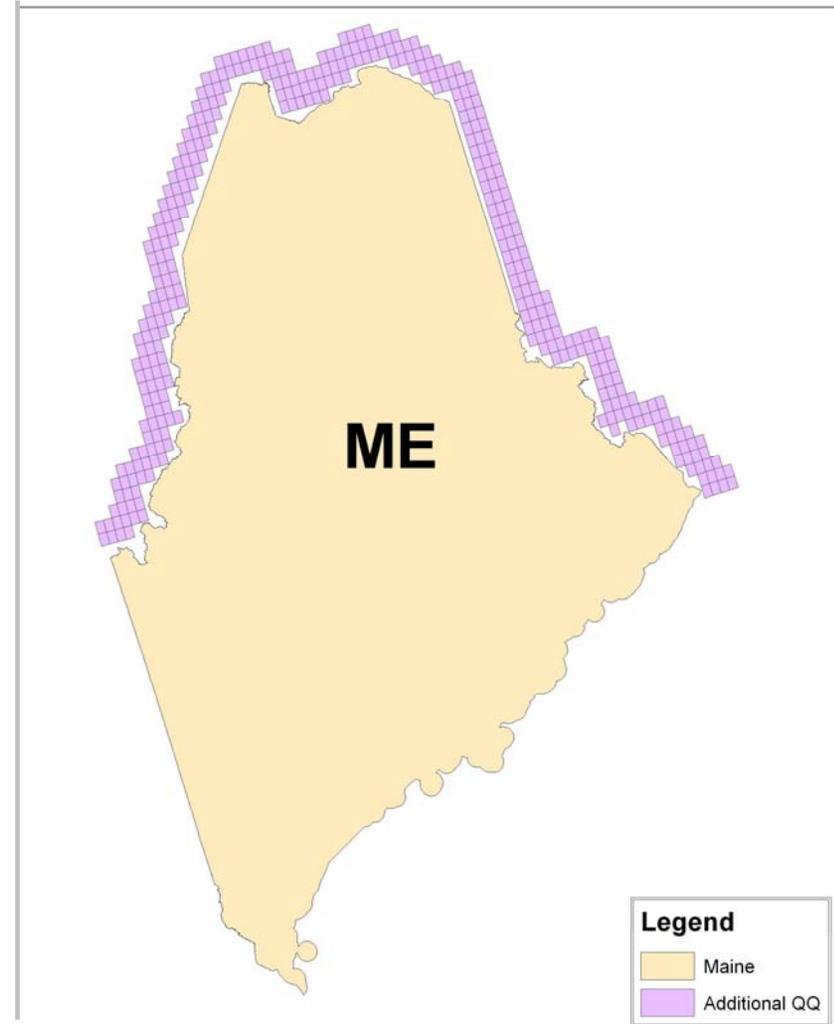
2007 NAIP Estimate

Additional Maine
Border Coverage
(1m, natural color)

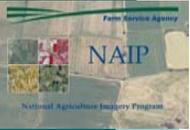
365 DOQQs @ \$180
= \$65,700

+ one quarter share
of entire state
= \$128,115

Total = \$193,815



NAIP Partnership Scenarios



OR ...

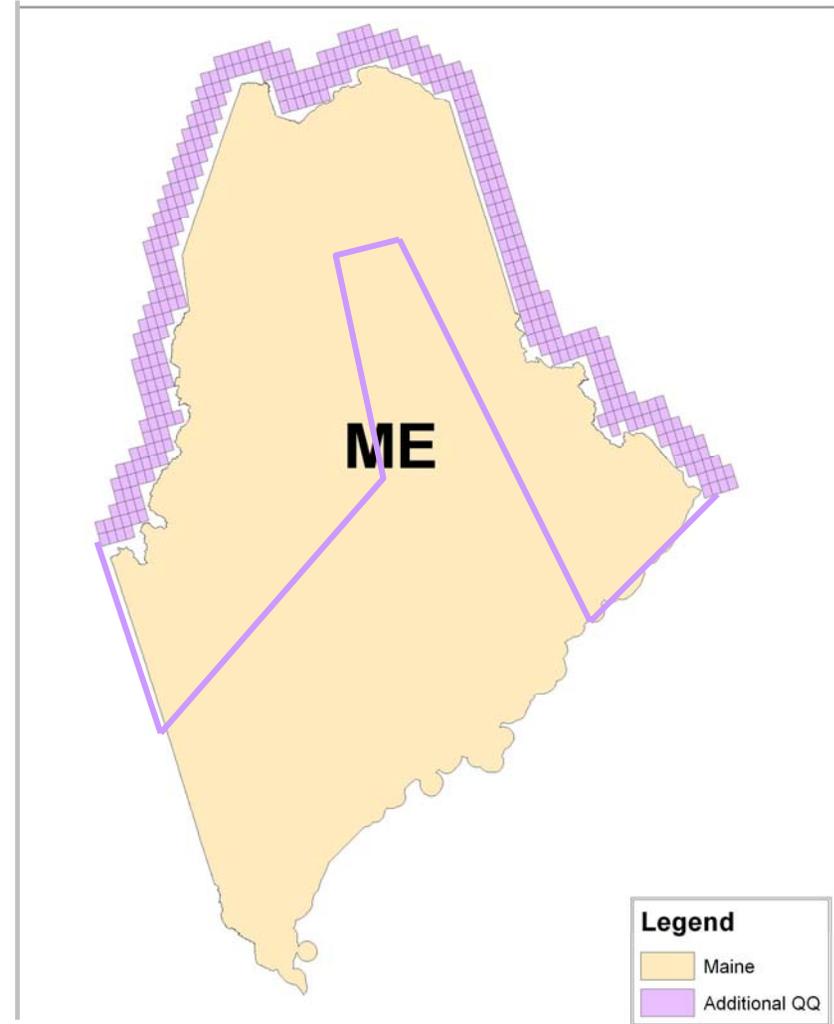
365 DOQQs @ \$180

= \$65,700

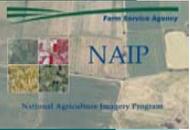
+ one quarter share
of border counties
(estimate 50% of state)

= \$64,058

Total = \$129,758



NAIP Partnership Scenarios



2007 NAIP Estimate
for Arizona
(1m, natural color)

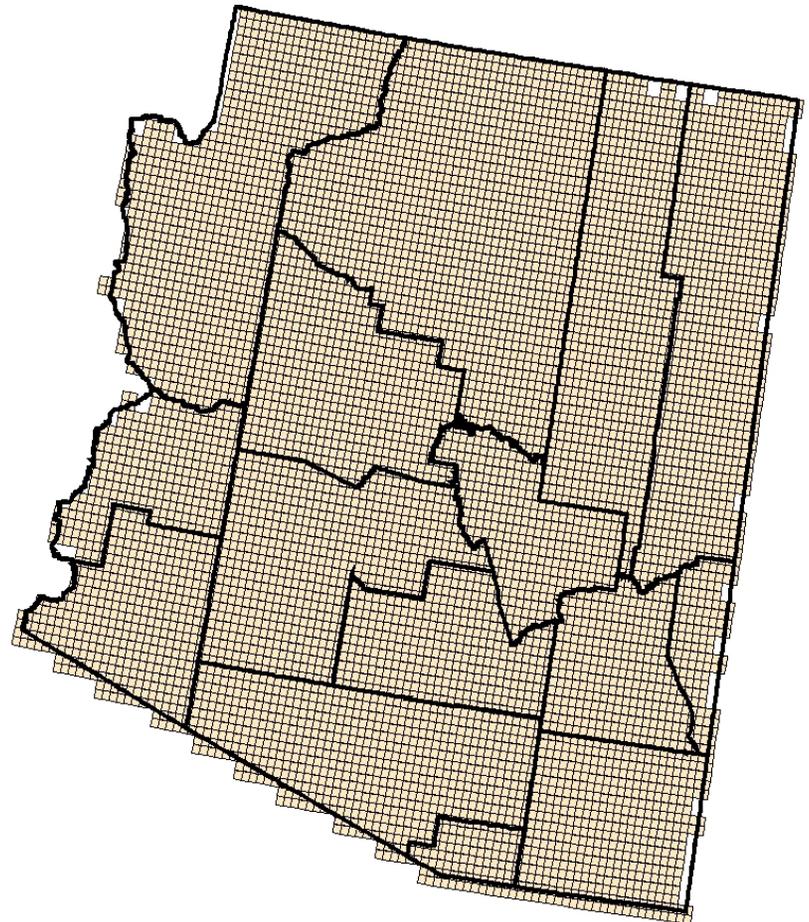
7,686 DOQQs @ \$180
= \$1,383,480

2 way share = \$691,740

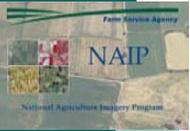
3 way share = \$461,160

4 way share = \$345,870

ARIZONA



NAIP Partnership Scenarios



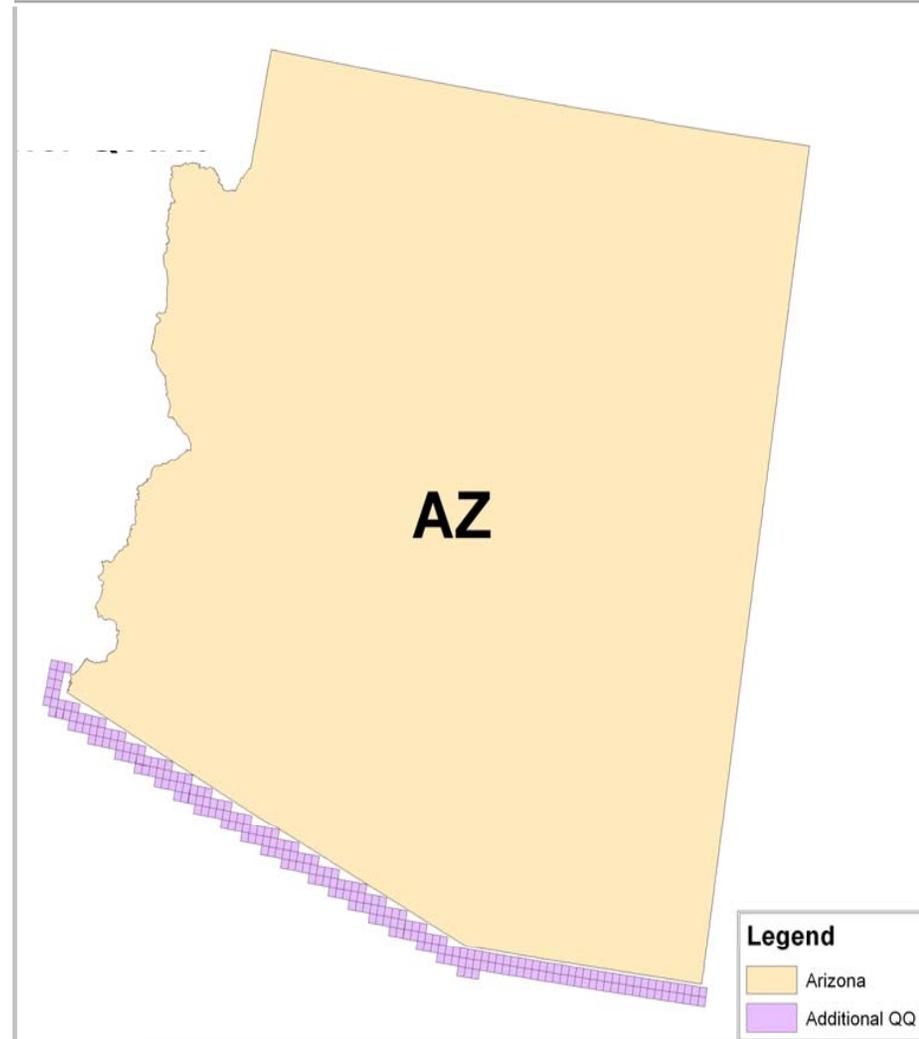
2007 NAIP Estimate

Additional Arizona
Border Coverage
(1m, natural color)

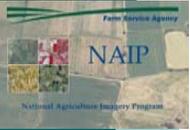
230 DOQQs @ \$180
= \$41,400

+ one quarter share
of entire state
= \$345,870

Total = \$387,270



NAIP Partnership Scenarios



OR ...

230 DOQQs @ \$180
= \$41,400

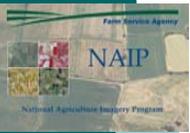
+ one quarter share
of border counties
(estimate $\frac{1}{4}$ of state)

= \$86,468

Total = \$127,868

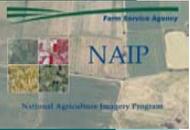


Benefits of Partnering



- **Timely delivery of current imagery**
- **Cost efficient products**
- **Compressed and full resolution imagery**
- **FGDC compliant metadata**
- **Additional coverage upgrades**
- **Higher resolution and CIR band upgrades**
- **Technical support services**
- **Contracting and quality assurance services with no administrative costs**
- **Derivative contract opportunities**
- **Disaster response imagery**

NAIP Points of Contact



- **Quality Issues/Problems**
Brenda Simpson – Quality Assurance Branch Chief
801-975-3500 XT 219
- **Technical**
David Davis – GIS Specialist – Service Center Support
801-975-3500 XT 278
Brian Vanderbilt – GIS Specialist – Service Center Support
801-975-3500 XT 240
- **Programmatic**
Kent Williams – Program Coordinator
801-975-3500 XT 261
- **Partnership Information**
Cindy Sessions – Partnership Coordinator
801-975-3500 XT 208
- **Contract Information (flying seasons, coverage, flight status)**
John Mootz – Contracting Officer
801-975-3500 XT 284