

# 2007 NJ Statewide Orthophotography

Preliminary Plans

NJ Geospatial Forum

February 10, 2006

# Project Overview

- Statewide orthophotography on 5-yr cycle: 1995/97, 2002, 2007
- OGIS will coordinate
- Seeking partners for funding and project admin
- Work group of staff from partner agencies will prepare for the procurement
- NJGF task force proposed to identify technical issues, provide advice to the multi-agency work group

# Previous Flights

- 1986: Color IR film, license limited to partner agencies, scale 1:58,000
- 1995/97: Color IR film, public domain, scale 1:40,000
- 2002: Color IR film, public domain, 5000' tiles, 1' pixel, scale 1:2400

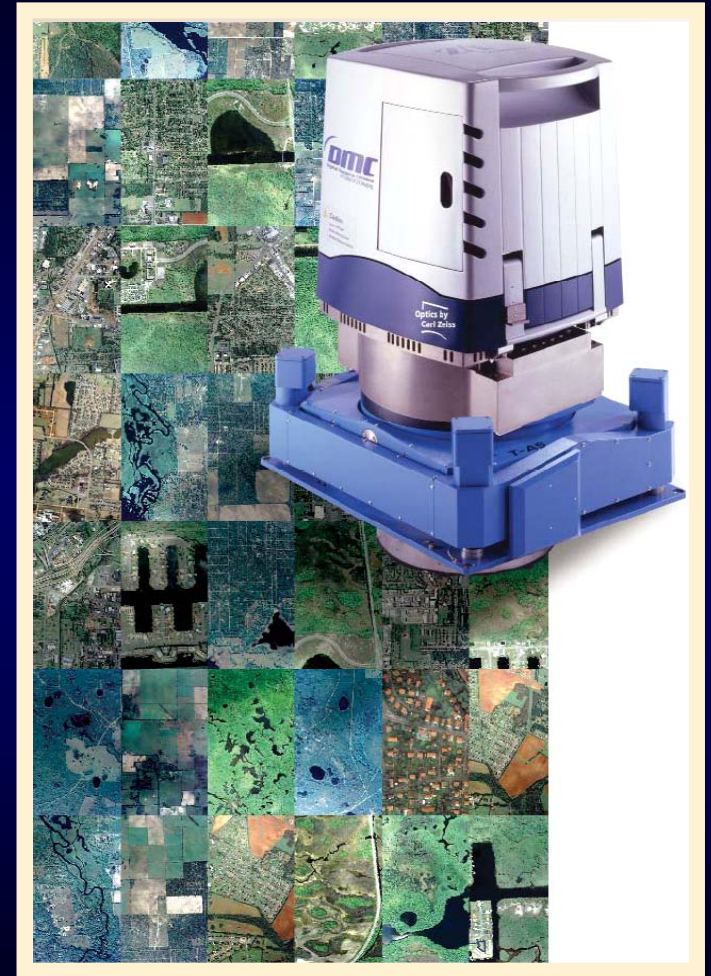
# Preliminary Specs for 2007

- Digital camera
- Leaf-off conditions (March 2007 flight)
- Natural color and IR (if sufficient funding)
- Ground resolution 1 foot
- Scale 1:2400
- Public domain data products

# Digital Cameras

- Two types... rectangular CCD array (framing) and linear CCD array (push broom).
- Several advantages, few disadvantages compared to film cameras.

Info courtesy of Photoscience



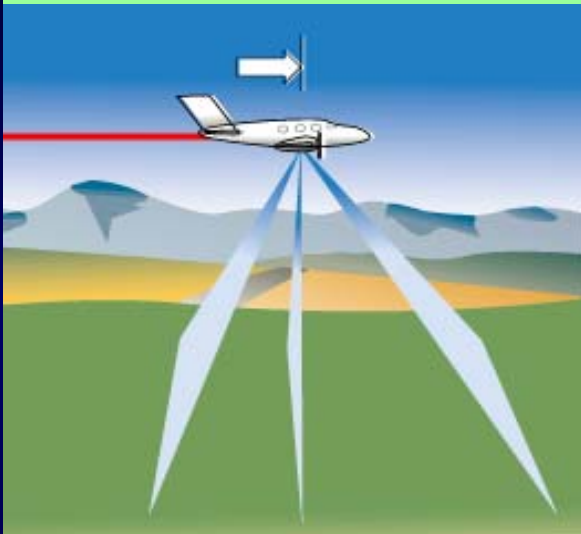
# Digital Camera versus Film

- Advantages
  - B&W, color, and infrared in a single pass.
  - No need for film, processing, other lab products.
  - Scanning not required.
  - Imagery free from lint, dust, scratches.
  - Production of imagery can start on the same day of flight.
  - Better spectral resolution than film cameras.
- Disadvantages
  - Calibration somewhat of an issue
  - Data storage from capture until production!

Info courtesy of Photoscience

# “Pushbroom” vs Frame Acquisition

## Pushbroom line scanner ADS40



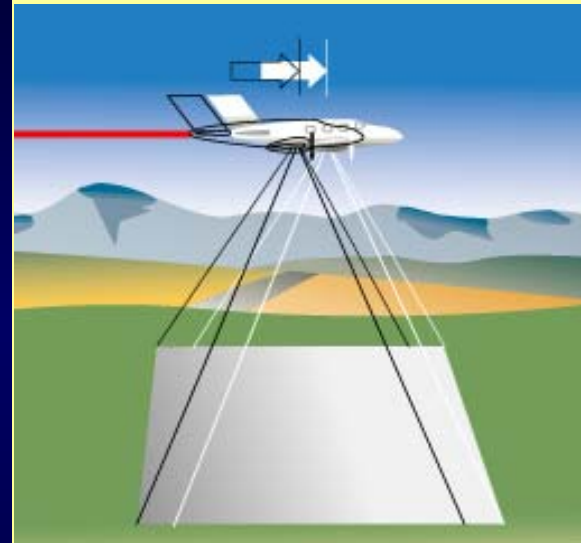
Swath 2.4 km

GSD 0.20m

**ADS  
40**

- Multiple-swath imaging along track
- 300% along-track      30% sidelap

## Frame aerial camera, film based or digital

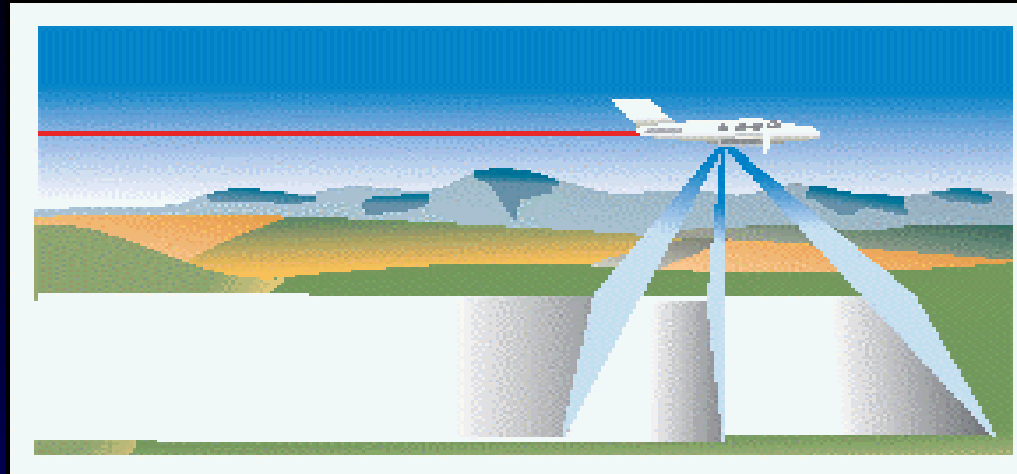


Swath 2.4 km

Photo scale  
1 : 10,500

- Frame-by-frame acquisition
- 60% along-track      30% sidelap



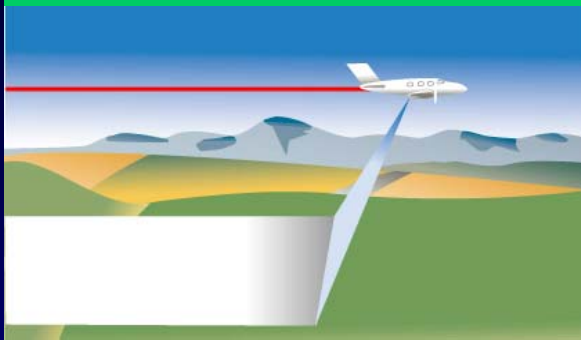


Pushbroom collects data as a moving strip - 'pixel carpet'



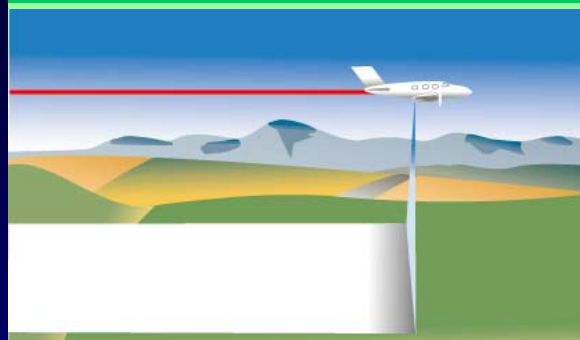
# Stereo Pushbroom Scanner

**Backward scene**



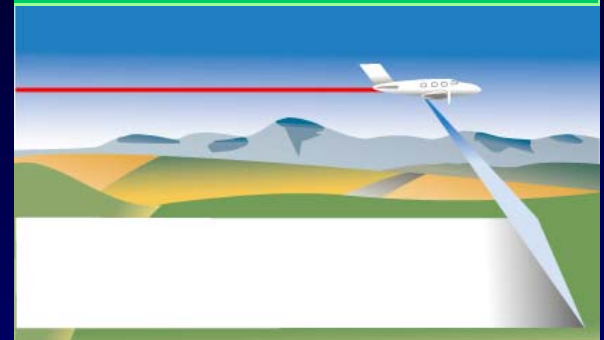
**composed  
of backward view lines**

**Nadir scene**



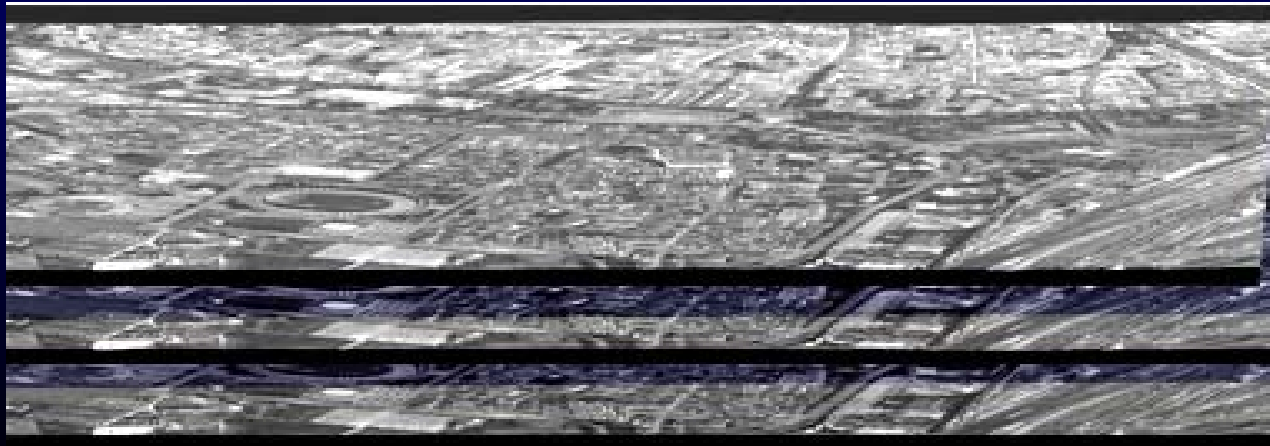
**composed  
of nadir view lines**

**Forward scene**



**composed  
of forward view lines**

Backward



Nadir



Forward



Courtesy

# States Using Digital Camera Solution

- Arkansas
- Florida
- Indiana
- Maryland
- Massachusetts
- Michigan
- Mississippi
- New Mexico
- New York
- Ohio
- Pennsylvania
- Virginia

# Local “Buy-Up”

- Interested counties or regional agencies would provide the cost difference to increase resolution/scale for their area
- Substantial cost-savings compared to flying a separate mission
- Funds would have to be committed (transferred?) by late summer 2006

# Procurement Options

In no particular order:

- State issues RFP
- USGS Cartographic Services Contract
- Corps of Engineers Center of Expertise for Photogrammetric Mapping
- Partner w/ Delaware on existing contract

# Funding

- Estimate \$1.6 million needed
- \$500,000 commitment from NGA (National Geospatial Intelligence Agency) via USGS
- Additional funding from E-911 carried over to FY06, slated to be lapsed and reinstated in FY07
- Volunteers?

# Outstanding Issues

- Frame or push broom
- Which purchasing mechanism
- Detailed specs (by late summer 2006)