

Michigan Aerial Imagery Partnership

Importance of Imagery

Aerial Imagery presents a fast and efficient method for gathering an unencumbered view of large areas of the landscape. This visualization of the landscape is essential for state and local land use planners, responsible for managing wildlife habitat, land-based industries, man-made infrastructure, and greenway corridors.

Aerial imagery will also play a critical role in the Picture Michigan Tomorrow, effort. In this effort, a forecast of land consumption will be developed for Michigan by combining data on historic and current land cover/land use, derived from aerial imagery, with identified drivers of land use change.

Importance of Partnership

The Michigan Aerial Imagery Partnership (MAIP) — a partnership of seven state agencies and the MSU Land Policy Program (LPP) and Remote Sensing & GIS Research and Outreach Services (RS&GIS) - was established to acquire critical statewide aerial imagery for the first updating of statewide land cover/land use data since 1978.

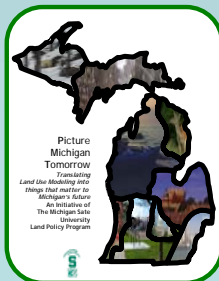
As a result of MSU LPP and RS&GIS leadership and extensive cooperation among state agencies, local and state planners/decision makers will soon have access to current statewide aerial imagery for the first time in nearly a decade. Responding to urgent needs from across the state, the MSU Land Policy Program successfully brokered a \$1.2 million deal on behalf of the Partnership with the U.S. Farm Service Agency's National Agriculture Imagery Program (NAIP). The deal for acquisition of statewide imagery is funded by \$800,000 in federal contributions from U.S. Farm Service Agency, U.S. Natural Resources Conservation Service, and U.S. Forest Service and \$400,000 from seven state agencies and MSU.

Local Partners

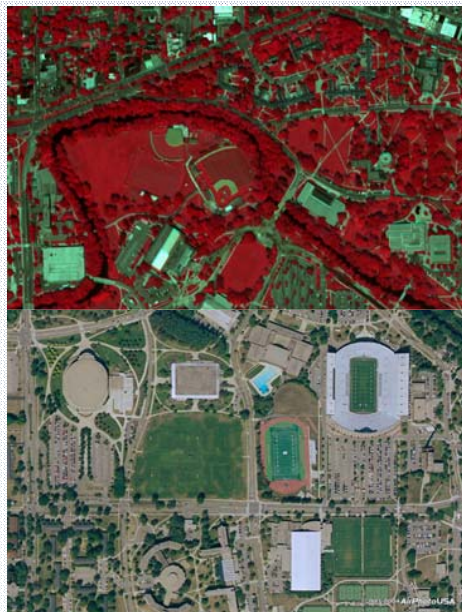
Center for Geographic Information
Department of Environmental Quality
Department of Agriculture
Department of Transportation
Department of Labor and Economic Growth
Department of Natural Resources
Michigan State Police
Michigan State University Land Policy Program
Michigan State University Remote Sensing & GIS
Research and Outreach Services

Federal Partners

U.S. Farm Service Agency
U.S. Natural Resources Conservation Service
U.S. Forest Service



Deliverables

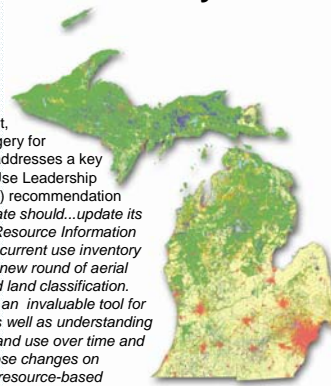


Sample MSU campus imagery representative of upcoming NAIP deliverables.

Top: Color Infrared
Bottom: Natural Color (Produced by AirPhoto USA)

Land Use and Land Cover Analysis

Obtaining current, high-quality imagery for the entire state addresses a key Michigan Land Use Leadership Council (MLULC) recommendation in 2003: "The state should...update its 1978 Michigan Resource Information System (MIRIS) current use inventory by completing a new round of aerial photography and land classification. This data will be an invaluable tool for local planning as well as understanding the changes in land use over time and the effects of those changes on Michigan's land resource-based industries and the environment."



1978 Michigan Level 1
Land Use / Land Cover Data

Imagery Specifications

Coverage: Entire State of Michigan
Data Collection Window: June - September, 2005 (Leaf-on)
Pixel Resolution: 1 meter
Spectral Type: Color Infrared (CIR) and Natural Color
Imagery Format: Orthorectified digital mosaics (compressed counties and uncompressed quarter-quads)

The entire State of Michigan was flown as part of the National Agricultural Imagery Program (NAIP) in Summer 2005. The flight occurred during the growing season to maximize information on agricultural crops. Data collection was undertaken by LandAir Mapping, Inc. of Atlanta Georgia.

Timeline

November 12, 2004: Letter of Intent is drafted by the LPP and RS&GIS, signed by Dr. Adelaja, Director of LPP, and mailed to FSA. The letter indicates that Michigan is prepared to move forward with the project.

January 24, 2005: Dr. Adelaja, Director of LPP signs the FSA contract for the 2005 summer flight, along with the re-imbursement agreement.

April 25, 2005: Memorandum of Understanding, stating all financial and technical commitments, is signed by representatives from MSU, MDEQ, MDNR, MDOT, MSP, MDLEG and MCGI.

May 2005: FSA awards the Michigan aerial imagery contract to LandAir Mapping, Inc. of Atlanta Georgia. Imagery to be acquired digitally using Leica ADS40 Airborne Digital Sensors.

June – September 2005: Acquisition of aerial imagery by LandAir Mapping, Inc.

August 18, 2005: RS&GIS receives the first uncertified, compressed county mosaic for Delta County, in Michigan's Upper Peninsula. With the arrival of the mosaics, the quality assurance/quality control process officially begins!

September 2005: Aerial imagery processing.

October – December 2005: Delivery of processed imagery to APFO for review. Delivery of uncertified, compressed county mosaics to MAIP and Federal partners.

Spring 2006: Delivery of final CIR uncompressed, orthorectified, and certified quarter-quad imagery to MAIP and Federal partners.

Next Steps...

Summer 2006 Reprojection of imagery into the Michigan Georef Coordinate System and delivery via the Michigan Geographic Data Library.

Fall 2006 Delivery of final Natural Color uncompressed, orthorectified, and certified quarter-quad imagery to MAIP and Federal partners. Reprojection of imagery into the Michigan Georef Coordinate System and delivery via the Michigan Geographic Data Library.

MICHIGAN STATE
UNIVERSITY

Land Policy Program
E-mail: mail@landpolicy.msu.edu
317 Manly Miles Bldg., East Lansing, MI 48823
Phone: (517) 432-8800 | Fax: (517) 432-8769

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