State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
DEP13838	1

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CHUCK BOWMAN
304-558-2157

VENDOR

RFQ COPY
TYPE NAME/ADDRESS HERE

Kucera International Inc.
38133 Western Parkway
Willoughby, OH 44094

SHIP TO

ENVIRONMENTAL PROTECTION
DEPARTMENT OF
OFFICE OF INFORMATION SERVICES
601 57TH STREET SE
CHARLESTON, WV
25304 304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	F.O.B.	FREIGHT TERMS
04/05/2007				

BID OPENING DATE: 04/19/2007 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT. NO.	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		905-10		See Attached Bid Schedules

LIDAR AND DIGITAL IMAGERY

THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY, THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING BIDS FROM RESPONSIBLE AND QUALIFIED VENDORS TO PROVIDE THE AGENCY WITH LIDAR AND DIGITAL IMAGERY COLLECTION FOR SEVEN (7) ABANDONED MINE LAND (AML) AREAS NAMED ACCORDING TO THE ATTACHED 7.5 QUADRANGLE MAPS. THE COLLECTION AREAS WILL BE THE RED POLYGONS AREAS IN WHICH THE AML LOCATIONS ARE WITHIN, PLEASE NOTE SOME AREAS MAY HAVE MORE THAN ONE.

A CD CONTAINING LIDAR DATA ACCOMPANIES THIS REQUEST FO QUOTATION. REGISTERED VENDORS VIEWING THIS ADVERTISEMENT ON-LINE MAY VIEW THE DATA IN THE CD ON OUR WEBSITE UNREGISTERED VENDORS REQUESTING/RECEIVING THIS ADVERTISEMENT NEED TO CONTACT BUYER CHUCK BOWMAN AT 304.558.2157 TO REQUEST THE CD CONTAINING THE LIDAR DATA.

THE GOAL OF THE PROJECT IS TO OBTAIN THE FOLLOWING PRODUCTS, BARE EARTH LIDAR TILES, ORTHO TILES, REPORTING, AND DOCUMENTATION FOR ALL PROJECT AREAS. PLEASE ITEMIZE THE PRODUCTS IN THE QUOTE BASED ON EACH PROJECT AREA. THE LIDAR ACQUISITION IS TO BE ACCURATE TO PRODUCE 2-FOOT CONTOURING AND SHOULD MEET ALL ACQUISITION STANDARDS TO ACHIEVE THE REQUIRED ACCURACIES. PRIOR TO ANY TARGET PANEL PLACEMENT, THE WV DEP MUST RECEIVE THE COORDINATE LOCATION OF PROPOSED PANEL.

DELIVERABLES ARE TO BE SENT TO DOUG BROWN AT THE PROVIDED ADDRESS. ALL PRODUCTS ARE TO BE DELIVERED IN

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	440-975-4230	4/18/07

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	34-0808463	

WHEN RESPONDING TO RFQ, INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

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Request for Quotation

RFQ NUMBER	PAGE
DEP13838	2

ADDRESS CORRESPONDENCE TO ATTENTION OF:
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304-558-2157

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Kucera International Inc.
38133 Western Parkway
Willoughby, OH 44094

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UTM TIME ZONE 17, NAD 83 WITH ELEVATIONS IN FEET, UNLESS WV DEP APPROVES ANY CHANGES. THE ACQUISITION IS TO BE PERFORMED UNDER LEAF-OFF CONDITIONS, AS MUCH AS POSSIBLE, AND MUST BE COMPLETED NO LATER THAN AUGUST 1, 2007. THE WV DEP MUST RECEIVE ALL DELIVERABLES NO LATER THAN OCTOBER 1, 2007.

MR. DOUG BROWN
REMOTE SENSING SUPERVISOR
WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
601 57TH STREET, SE
CHARLESTON, WV 25304
304.926.0499 X 1623

BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THIS CONTRACT IS AUTOMATICALLY NULL AND VOID, AND IS TERMINATED WITHOUT FURTHER ORDER.

VENDOR PREFERENCE CERTIFICATE

CERTIFICATION AND APPLICATION* IS HEREBY MADE FOR PREFERENCE IN ACCORDANCE WITH WEST VIRGINIA CODE, 5A-3-37 (DOES NOT APPLY TO CONSTRUCTION CONTRACTS).

A. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:

( ) BIDDER IS AN INDIVIDUAL RESIDENT VENDOR AND HAS RESIDED CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR

( ) BIDDER IS A PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR AND HAS MAINTAINED ITS HEAD-

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38133 Western Parkway
Willoughby, OH 44094

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QUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR 80% OF THE OWNERSHIP INTEREST OF BIDDER IS HELD BY ANOTHER INDIVIDUAL, PARTNERSHIP, ASSOCIATION OR CORPORATION RESIDENT VENDOR WHO HAS MAINTAINED ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS CONTINUOUSLY IN WEST VIRGINIA FOR FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION; OR

( ) BIDDER IS A CORPORATION NONRESIDENT VENDOR WHICH HAS AN AFFILIATE OR SUBSIDIARY WHICH EMPLOYS A MINIMUM OF ONE HUNDRED STATE RESIDENTS AND WHICH HAS MAINTAINED ITS HEAQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA CONTINUOUSLY FOR THE FOUR (4) YEARS IMMEDIATELY PRECEDING THE DATE OF THIS CERTIFICATION.

B. APPLICATION IS MADE FOR 2.5% PREFERENCE FOR THE REASON CHECKED:

( ) BIDDER IS A RESIDENT VENDOR WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES WORKING ON THE PROJECT BEING BID ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID;
OR
( ) BIDDER IS A NONRESIDENT VENDOR EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS OR IS A NONRESIDENT VENDOR WITH AN AFFILIATE OR SUBSIDIARY WHICH MAINTAINS ITS HEADQUARTERS OR PRINCIPAL PLACE OF BUSINESS WITHIN WEST VIRGINIA EMPLOYING A MINIMUM OF ONE HUNDRED STATE RESIDENTS WHO CERTIFIES THAT, DURING THE LIFE OF THE CONTRACT, ON AVERAGE AT LEAST 75% OF THE EMPLOYEES OR BIDDERS' AFFILIATE'S OR

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	440-975-4230	4/18/07

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	34-0808463	

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Request for Quotation

RFQ NUMBER	PAGE
DEP13838	4

ADDRESS CORRESPONDENCE TO ATTENTION OF:
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304-558-2157

VENDOR
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Kucera International Inc.
38133 Western Parkway
Willouhgby, OH 44094

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04/05/2007				

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SUBSIDIARY'S EMPLOYEES ARE RESIDENTS OF WEST VIRGINIA WHO HAVE RESIDED IN THE STATE CONTINUOUSLY FOR THE TWO YEARS IMMEDIATELY PRECEDING SUBMISSION OF THIS BID.

BIDDER UNDERSTANDS IF THE SECRETARY OF TAX & REVENUE DETERMINES THAT A BIDDER RECEIVING PREFERENCE HAS FAILED TO CONTINUE TO MEET THE REQUIREMENTS FOR SUCH PREFERENCE, THE SECRETARY MAY ORDER THE DIRECTOR OF PURCHASING TO: (A) RESCIND THE CONTRACT OR PURCHASE ORDER ISSUED; OR (B) ASSESS A PENALTY AGAINST SUCH BIDDER IN AN AMOUNT NOT TO EXCEED 5% OF THE BID AMOUNT AND THAT SUCH PENALTY WILL BE PAID TO THE CONTRACTING AGENCY OR DEDUCTED FROM ANY UNPAID BALANCE ON THE CONTRACT OR PURCHASE ORDER.

BY SUBMISSION OF THIS CERTIFICATE, BIDDER AGREES TO DISCLOSE ANY REASONABLY REQUESTED INFORMATION TO THE PURCHASING DIVISION AND AUTHORIZES THE DEPARTMENT OF TAX AND REVENUE TO DISCLOSE TO THE DIRECTOR OF PURCHASING APPROPRIATE INFORMATION VERIFYING THAT BIDDER HAS PAID THE REQUIRED BUSINESS TAXES, PROVIDED THAT SUCH INFORMATION DOES NOT CONTAIN THE AMOUNTS OF TAXES PAID NOR ANY OTHER INFORMATION DEEMED BY THE TAX COMMISSIONER TO BE CONFIDENTIAL.

UNDER PENALTY OF LAW FOR FALSE SWEARING (WEST VIRGINIA CODE 61-5-3), BIDDER HEREBY CERTIFIES THAT THIS CERTIFICATE IS TRUE AND ACCURATE IN ALL RESPECTS; AND THAT IF A CONTRACT IS ISSUED TO BIDDER AND IF ANYTHING CONTAINED WITHIN THIS CERTIFICATE CHANGES DURING THE TERM OF THE CONTRACT, BIDDER WILL NOTIFY THE PURCHASING DIVISION IN WRITING IMMEDIATELY.

BIDDER: Kucera International Inc.

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	440-975-4230	4/18/07

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	34-0808463	

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State of West Virginia
Department of Administration
Purchasing Division
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Charleston, WV 25305-0130

Request for Quotation

RFQ NUMBER	PAGE
DEP13838	5

ADDRESS CORRESPONDENCE TO ATTENTION OF:
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04/05/2007				

BID OPENING DATE: 04/19/2007 BID OPENING TIME 01:30PM

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT

DATE: April 18, 2007

SIGNED: [signature]

TITLE: President

* CHECK ANY COMBINATION OF PREFERENCE CONSIDERATION(S) IN EITHER "A" OR "B", OR BOTH "A" AND "B" WHICH YOU ARE ENTITLED TO RECEIVE. YOU MAY REQUEST UP TO THE MAXIMU 5% PREFERENCE FOR BOTH "A" AND "B".
(REV. 12/00)

NOTICE

A SIGNED BID MUST BE SUBMITTED TO:

DEPARTMENT OF ADMINISTRATION
PURCHASING DIVISION
BUILDING 15
2019 WASHINGTON STREET, EAST
CHARLESTON, WV 25305-0130

THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:

SEALED BID

BUYER: CB-23

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
[signature]	440-975-4230	4/18/07

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	34-0808463	

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State of West Virginia
Department of Administration
Purchasing Division
2019 Washington Street East
Post Office Box 50130
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Request for Quotation

RFQ NUMBER	PAGE
DEP13838	6

ADDRESS CORRESPONDENCE TO ATTENTION OF:
CHUCK BOWMAN
304-558-2157

VENDOR
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TYPE NAME/ADDRESS HERE

Kucera International Inc.
38133 Western Parkway
Willoughby, OH 44094

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LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
	RFQ. NO.:			DEP13838		
	BID OPENING DATE:			04/19/2007		
	BID OPENING TIME:			1:30 PM		
	PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:					
	440-975-4238					
	CONTACT PERSON (PLEASE PRINT CLEARLY):					
	John Antalovich Jr.					
	****** THIS IS THE END OF RFQ DEP13838 ****** TOTAL:					See Bid Schedule

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

SIGNATURE	TELEPHONE	DATE
	440-975-4230	4/18/07

TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE
President	34-0808463	

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RFQ No. DEP13838

AFFIDAVIT

West Virginia Code §5A-3-10a states:
No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owned is an amount greater than one thousand dollars in the aggregate

DEFINITIONS:
"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

EXCEPTION:
The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

LICENSING:
Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, West Virginia Insurance Commission, or any other state agencies or political subdivision. Furthermore, the vendor must provide all necessary releases to obtain information to enable the Director or spending unit to verify that the vendor is licensed and in good standing with the above entities.

CONFIDENTIALITY:
The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures and rules. Vendors should visit **www.state.wv.us/admin/purchase/privacy** for the Notice of Agency Confidentiality Policies.

Under penalty of law for false swearing (West Virginia Code, §61-5-3), it is hereby certified that the vendor acknowledges the information in this said affidavit and are in compliance with the requirements as stated.

Vendor's Name: Kucera International Inc.

Authorized Signature: _____ Date: 4/18/07

BID SCHEDULE
DEP13838

Burnsville:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 75.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item $2,000.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item $300.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item $200.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 775.00

Total Fee for Burnsville $ 3,350.00

Ground control survey as needed $1,000.00

BID SCHEDULE
DEP13838

Delbarton:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 75.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 2,000.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item ..... $ 300.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 200.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 775.00

Total Fee for Delbarton $ 3,350.00

Ground control survey as needed $1,000.00

Newburg:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 75.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 2,000.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item ..... $ 300.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 200.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 775.00

Total Fee for Newburg..... $3,350.00

Ground control survey as needed $1,000.00

BID SCHEDULE
DEP13838

Gorman:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 50.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 500.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item $100.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 65.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item $250.00

Total Fee for Gorman..... $965.00

Ground control survey as needed $350.00

BID SCHEDULE
DEP13838

Holden:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 100.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 3,850.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item $600.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 300.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 1,500.00

Total Fee for Holden ..... $ 6,350.00

Ground control survey as needed $1,000.00

BID SCHEDULE
DEP13838

Lake Lynn:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 50.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 500.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item ..... $ 100.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 65.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 250.00

Total Fee for Lake Lynn..... $ 965.00

Ground control survey as needed $650.00

BID SCHEDULE
DEP13838

Pocatalico:

Item 1 – Project Administration

- Project Management
- Produce Reference files and Mission plans
- Delivery – Shipping and Media

Total Item ..... $ 50.00

Item 2 – Data Collection

- Aircraft Fee
- LiDAR/Digital Camera Utilization Fee
- Operators

Total Item ..... $ 500.00

Item 3 – GPS Mission Base Stations

- Locate desirable base station monitoring points
- Monitor GPS Units

Total Item ..... $ 100.00

Item 4 – Data Processing

- LiDAR Data
- GPS / IMU Data
- Imagery

Total Item ..... $ 65.00

Item 5 – Product Production

- Bare Earth LiDAR Tiles
- Ortho Tiles
- Reporting and Documentation

Total Item ..... $ 250.00

Total Fee for Pocatalico..... $ 965.00

Ground control survey as needed $650.00

TOTAL BID FOR ALL SITES

$ 19,295.00

$ 5,650.00 Total Bid for Ground Control Survey as Needed

Contract to be awarded by total bid for all sites.

Project Coordinator:
Doug Brown
GIS Remote Sensing Supervisor
WV Dept of Environmental Protection
601 – 57th Street, SE
Charleston, WV 25304
Telephone: 304-926-0499, ext 1623
Email: dbrown@wvdep.org

Company Profile

Kucera International Inc. is a woman-owned business enterprise that provides comprehensive, professional geographic data acquisition/production and application services with primary expertise in aerial imaging, remote sensing, ground and airborne control surveying, digital and analytical photogrammetry, digital imaging, cadastral mapping, data conversion, and geographic information systems.

Kucera has throughout its 50-year history been a model of stability and steady growth, operating as the same independently owned professional service firm. Kucera is especially well-known for work that is of the highest quality as well as very cost competitive. Today, Kucera stands as one of the largest private mapping operations in the world, with a staff of over 90 experienced geomatics professionals and five full-service production offices. These offices complete aerial surveying, mapping, and related services for hundreds of individual projects annually, covering areas ranging in size from a few acres to thousands of square miles.

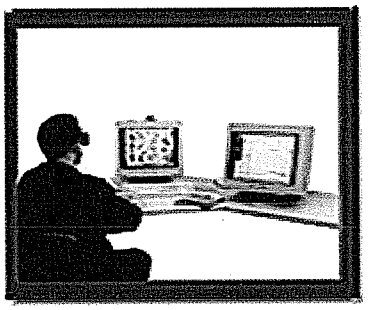
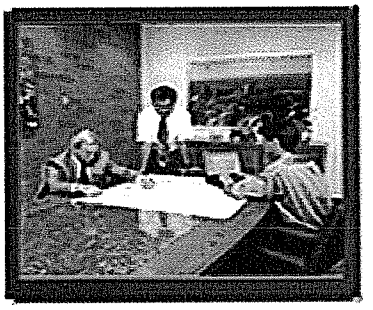
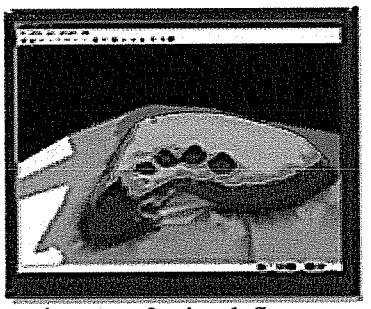
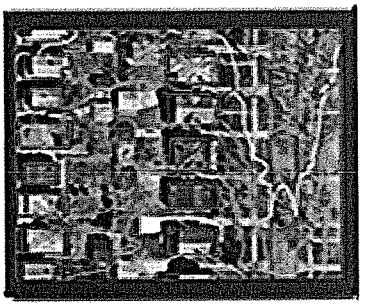
Kucera's in-house technology includes a fleet of twin- and single-engine aircraft equipped with latest generation aerial camera, airborne GPS/IMU and remote sensing/LiDAR systems, full-service photographic laboratories, geodetic-grade GPS receivers, first-order automated photogrammetric film scanners, first-order softcopy and analytical stereocompilation systems, automated digital orthophoto rectification and image processing stations, high resolution image plotters, and dedicated computers running current versions of all major GIS and CAD platforms.

Kucera's staff comprises professional photogrammetrists, surveyors, geodesists, engineers, geographers, pilots, photographers, photo interpreters, cartographers, CAD and GIS specialists, computer technicians, and other related experts. All staff members have received relevant education and/or training prior to joining and as part of the Kucera organization. The average practical experience level of the Kucera staff is over 15 years per individual.

Kucera maintains total project and quality management systems, with rigorous review, documentation, tracking, and reporting for each phase of every project. The systems are implemented through a dedicated project management team and computerized project database. The quality control program is currently undergoing ISO 9001:2000 certification. Cost control and reporting is accomplished through a fully automated cost-accounting system.

Kucera's clientele includes numerous US federal government agencies (Army Corps of Engineers, National Park Service, Forest Service, NASA, etc.), state and local government offices, private professional firms, commercial/industrial organizations, and other entities. Kucera has performed work in over 40 states and several foreign countries. Kucera is a longstanding corporate member of the American Society of Photogrammetry and Remote Sensing (ASPRS), Management Association for Private Photogrammetric Surveyors (MAPPS), Urban and Regional Information Systems Association (URISA), and a host of related state, local, and regional organizations.



Kucera's In-House Service Experience

Service, Provided Since:

Aerial Photography, 1947	Digital Terrain Modeling, 1980
Remote Sensing, 1972	Digital Plan/Topo Mapping, 1986
LiDAR, 2001	Orthophoto Production, 1983
Ground Surveying, 1953	Digital Update Mapping, 1990
Ground GPS, 1991	Metadata Generation, 1996
Airborne GPS, 1999	Aerial Volume Surveys, 1960
Film Scanning, 1995	Cadastral Mapping, 1975
Analytical Aerotriangulation, 1975	GIS/Data Conversion, 1988
Softcopy Aerotriangulation, 1996	

Kucera Offices

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Scott Antalovich, Vice President
Ronald Martin, Chief Photogrammetrist

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Gerald Ray, Manager
g.ray@kucerainternational.com

Kucera Staff Profile

DEPARTMENTAL BREAKDOWN

- Management/Administration - 10
- Aircraft Pilots - 6
- Aerial Photographers / Sensor Operators - 6
- Photo Lab Technicians - 4
- Airborne GPS / Aerotriangulation Technicians - 5
- Surveyors / Civil Engineers - 11
- LiDAR Processing Technicians - 4
- Digital Orthophoto / Imaging Technicians - 11
- Stereocompilers -16
- GIS/CAD Specialists -15
- Cadastral / Land Use Mapping Technicians - 4

PROFESSIONAL REGISTRATION / CERTIFICATION

- Professional Engineers - 3
- Professional Surveyors - 9
- Certified Photogrammetrists / Mappers - 8
- Certified GIS Specialists - 4
- Certified Computer Specialists - 2

EDUCATION / TRAINING

- Master's Degrees - 9
- Bachelor's Degrees - 33
- Associate's Degrees - 22
- Military Training - 17
- Trade School - 11

In-house Technology

Aircraft
- Three (3) twin-engine Piper Navajo Chieftain fixed-wing aircraft
- Two (2) single-engine Cessna TU206 fixed-wing aircraft
- One (1) Alouette II Helicopter with camera / sensor mount (rented)

Film-Based Aerial Cameras
- Two (2) Zeiss RMK TOP 15 with FMC, gyromount
- Two (2) Zeiss LMK 1015 with FMC, gyromount
- Three (3) Zeiss RMK 15/23

Digital Aerial Cameras / Sensors
- One (1) Leica ADS40 large-format (12000 pixel) airborne digital sensor with PAV30 gyromount
- One (1) Kodak Pro 14N 4.5K x 3K 12-bit color digital camera system
- One (1) Canon GL1 high-resolution digital camcorder (airborne videography)
- One (1) Mitsubishi IR-M600 video thermal imager (leased)

Aerial LiDAR
- One (1) Leica ALS50 airborne laser scanning/LiDAR system with automatic roll compensation

Full Service Photo Labs
- Two (2) Kodak Versamat automatic film processors
- Four (4) LogE Mark IV-V contact printers
- Three (3) Pako/Dupont large-format film processors
- Four (4) Zeiss SEGV and Saltzman photo enlargers
- Two (2) ACTI computerized engineering copy cameras
- One (1) Colex color contact printer

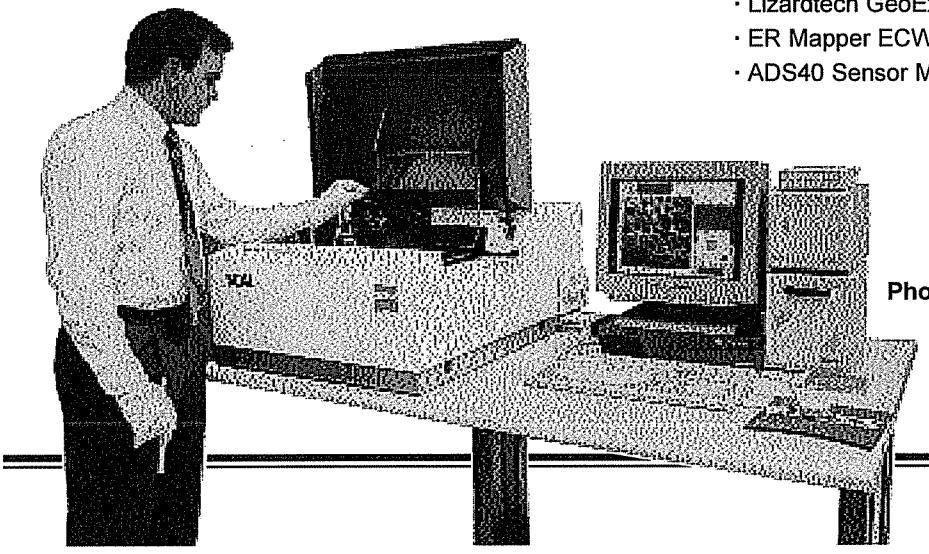
Airborne / Ground Control Surveying
- Four (4) Applanix 510 POS/AV first order airborne GPS/IMU systems
- Four (4) Trimble 5700/4400 series geodetic ground GPS receivers
- Two (2) Genisys Accuphoto mapping-grade airborne GPS systems
- Two (2) Trimble ProXL mapping-grade GPS receivers
- Four (4) Leica NA2000 automatic levels
- Two (2) TOPCON ET2 Total Stations

Photogrammetric Scanning
- Two (2) Z/I Imaging 3600 dpi PhotoScan 2002 with autowinder

Softcopy Aerotriangulation
- Two (2) INPHO softcopy triangulation stations with MATCH-AT adjustment software

Analytical Aerotriangulation
- One (1) Kern CPM1 precision analytical pugging system
- One (1) Wild PUGIII precision analytical pugging system
- Two (2) Zeiss C100/P2 analytical stereoplotters with Softmap AP3
- Inpho PatB-GPS aerotriangulation adjustment software
- Kenefick PC RABATS/BRATS aerotriangulation adjustment software

Orthophotography / Image Processing
- Eight (8) Inpho Orthomaster and Z/I OrthoPro digital orthophoto stations
- Agfa Apertune image processing software
- Inpho OrthoVista image processing software
- Adobe PhotoShop image processing software
- Image Alchemy image processing conversion software
- Lizardtech GeoExpress/MrSID image compression software
- ER Mapper ECW image compression software
- ADS40 Sensor Model for SOCET SET with GPro



Photogrammetric Scanning

In-house Technology (Continued)

Softcopy Stereocompilation
- Two (2) Z/I Imaging SSK softcopy stereoplotters
- Three (3) Cardinal Systems VR2 softcopy stereoplotters
- Two (2) BAE SOCET SET softcopy stereoplotters

Analytical Stereocompilation
- Six (6) Zeiss P3 analytical stereoplotters
- One (1) Leica BC1 analytical stereoplotter

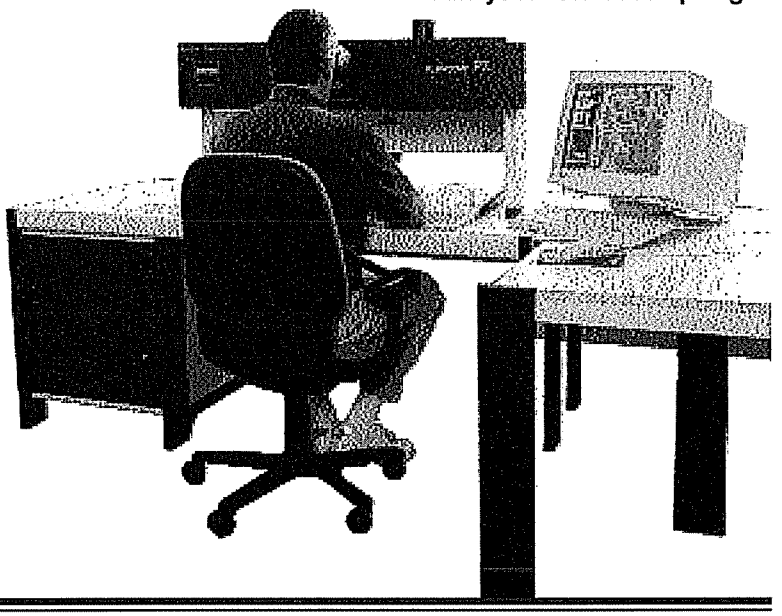
Terrain Modeling
- ArcView 3D Analyst (DTM/TIN/3D visualization)
- Trimble Terramodel (DTM/TIN/contour generation)
- TerraSolid Terramodeler and TerraScan (DTM/LiDAR)
- Leica CIP (DTM/contour generation)
- Microstation InRoads (DTM/TIN/contour generation)
- Z/I Imaging MATCH AT (automated DTM generation)
- Multigen Paradigm Vega Prime (3D generation)
- Zeiss PROSA DTM quality control software

GIS and CAD
- ArcGIS (six stations)
- AutoCAD 2002 (eight stations)
- Bentley Microstation(eight stations)
- Intergraph GeoMedia (one station)
- Z/I CADMAP (ten stations)
- Cardinal Systems VR1/VR2 (eight stations)

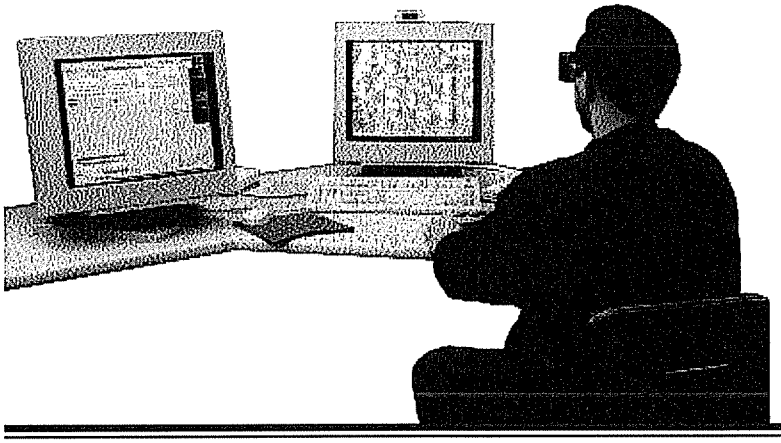
Hardcopy Plotting and Scanning
- One (1) AGFAJET Grand Sherpa 64" 1440 dpi color plotter
- One (1) Hewlett Packard 1050C 600 dpi color inkjet plotter
- One (1) Hewlett Packard 755CM 600 dpi color inkjet plotter
- One (1) Ideal 8300 800 dpi large-format (36") scanner
- One (1) ProSeal 44" mounting and lamination system

Computer / Internet Systems
- Eighty (80) Windows NT/2000 XP workstations
- Eleven (11) Linux servers
- Four (4) Window 2000 servers
- One (1) Exchange server
- Gigabit Ethernet switching technology
- T1 1.544 Mbps Internet access

Analytical Stereocompiling



Softcopy Stereoplotting



In-House Geomatic Services

Aerial Surveying:

- Film and digital black & white, natural color, color infrared aerial photography
- Vertical and oblique aerial photography
- Multispectral, hyperspectral, and thermal IR aerial surveys
- Aerial LiDAR surveys
- Airborne GPS and GPS / IMU surveying
- On-call / emergency response aerial surveys
- Low altitude helicopter / LAMP surveys

Ground Surveying and Georeferencing:

- GPS and conventional ground control and geodetic surveying
- Base station operation
- Monumentation
- Hydrographic, utility, boundary, obstruction, topographic surveys
- Field edit and accuracy verification
- Analytical and softcopy aerotriangulation

Aerial Image Acquisition and Conversion / Processing:

- Film scanning and digital image processing
- Photographic enlargements / prints, reproduction services
- Digital image rectification, orthophotography, mosaics
- Historical aerial photography research, acquisition, processing
- Digital image plots, mounting, lamination, framing backlighting, wall hangings
- Satellite image distributor

Digital Terrain and Surface Feature Mapping:

- Digital elevation, terrain, and surface models
- Cross-section and profile mapping
- Planimetric / topographic feature stereocompilation and digitizing
- Photogrammetric and non-stereo update mapping
- 3D visualization development and support
- Aerial RADAR / IFSAR surface data processing

Property, Land Use, and Address Mapping:

- Map scanning, vectorization, heads-up digitizing
- Best-fit digitized and COGO cadastral mapping
- Photo interpretation and land use / land cover mapping
- Road centerline and E911 mapping, addressing, conversion
- Asset / infrastructure / GASB34 mapping

Special Application Surveying/Mapping and Photogrammetry:

- Highway and utility corridor infrastructure and vegetation feature mapping
- Facility / complex master plan mapping
- Facility / complex master plan mapping
- Impervious surface / NPDES mapping
- Hydrographic study / FEMA FIS mapping
- Tide / water-level contingent coastal and shoreline / FERC photography and mapping
- Aerial and ground-based volumetric / earthwork / airspace surveys, terrestrial, industrial, medical photogrammetry

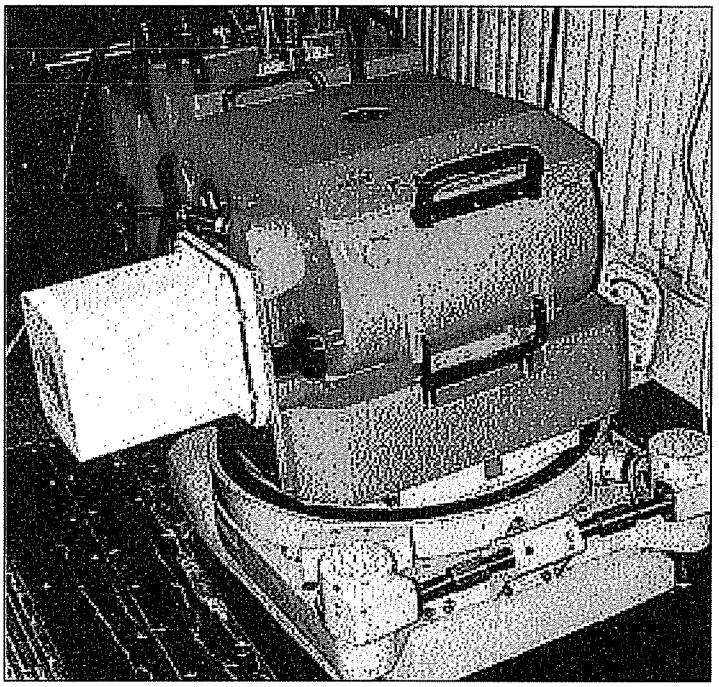
GIS and General Support/Consulting:

- GIS and CAD data conversion, database design, data maintenance and distribution
- GIS, CAD, and aerial image processing / plotting systems, consulting, installation, training
- Photogrammetric consulting, QA / QC inspection / review, expert witness, specification writing
- Photogrammetric continuing education, articles, presentations, reports, facility tours.

Airborne Control Surveying

Kucera has been performing airborne control surveying services since 1999 and has successfully completed hundreds of airborne control survey missions. Kucera is one of a few companies that operates multiple geodetic-grade Applanix Model 510 POS/AV airborne GPS/IMU systems and performs virtually every large and many of its smaller aerial imaging fly-overs using AGPS/IMU.

The Applanix POS/AV system consists of a high accuracy (20 arc-second) "strap down" (attached to the aerial sensor) inertial measuring unit (IMU) linked to a Novatel geodetic-grade GPS receiver. The system accurately measures both the camera sensor's center position and angular "exterior" orientation during image acquisition, thus establishing accurate georeferencing in flight and significantly reducing the amount of ground-based control required for a project area. For aerial photogrammetric surveys, the Applanix AGPS/IMU survey data improves the quality of, reduces the time required for, or eliminates the need for the aerotriangulation of the aerial photography. For typical large- or medium-scale photogrammetric projects, the aerotriangulation process, together with a reduced number of ground-based control points, is used to quality control check and refine the AGPS/IMU survey results.



Applanix POS/AV geodetic-grade airborne GPS/IMU systems are used for airborne control surveys.

In addition to ground-based control "checkpoints," the AGPS/IMU survey process requires continuous operation of multiple static, geodetic-grade base station GPS receivers within approximately 50 km of the roving (aircraft-based) receiver during each flight session. The multiple field base stations provide redundancy and help ensure data quality through availability of multiple data observation sets. The base stations are further supplemented with observation data obtained from available government continuously operating reference stations (CORS) or other base stations known to be operating in the geographic proximity. Where multiple high accuracy CORS are available, such are used in place of project-specific base stations. The airborne and base station GPS receivers make observations at one-half or one second epochs (1-2 Hz), with post-processing of the data being performed using on-the-fly kinematic techniques and yielding a positional accuracy of 10 cm or better for the camera/sensor center.

At the start and completion of each flight session the Applanix system receiver is initialized using the fixed baseline method by being operated in the aircraft while parked stationary and having one static station placed close to the aircraft location, providing a short baseline vector solution. Following each flight session the observation data is immediately downloaded and subject to initial processing by the flight crew to ensure successful data recording and coverage.

During the AGPS post-processing, a very robust kinematic ambiguity resolution (KAR), a fixed integer solution, is implemented along with an analysis of the day's satellite configuration and PDOP, satellite signal standard deviations, atmospheric interferences, and forward/reverse plots, to attain the most accurate GPS solution available. The GPS and IMU data are processed together, with the IMU data being used to fill in and adjust the GPS results as needed and the GPS data being used to minimize the effects of aircraft "drift" in the IMU measurements. The data is smoothed and corrected using both forward and backward processing with the resultant photo-center coordinates and orientation angles extracted and output into the proper datum. The AGPS/IMU reduction results are thoroughly analyzed to ensure proper IMU behavior and accuracy with the data graphs also being used to ensure that the proper flying parameters are followed for each mission.

As a deliverable for the AGPS/IMU survey work, the client is furnished with a comprehensive AGPS/IMU survey report documenting the procedures used and results achieved.

LiDAR

Kucera International provides LiDAR services with our company-owned and operated Leica ALS 50 LiDAR system. Advantages of this system include variable flight altitude (500' to 13,000'), cross-track swath width (0° to 75°), laser scanning rate (0 to 70 Hz), and laser pulse rate (to 85 KHz) and roll compensation. Kucera adds further flexibility to the LiDAR service by having both twin- and single-engine aircraft available as a flight platform, allowing for flight speeds ranging from 80 to 170 knots and faster.

The LiDAR laser is integrated with a state-of-the-art Applanix 510 POS/AV inertial measuring unit and global positioning systems in the aircraft and at ground base stations to provide the highest degree of positional and orientation angle accuracy needed for terrain surface modeling. LiDAR flight planning is a collaborative process with client input to define the necessary parameters (flight altitude, swath width, scanning rate, aircraft speed) to meet the project accuracy/data density requirements in the most time- and cost-effective manner. Detailed consideration is given to the purpose and nature of the project, including terrain relief, land cover, target area size/shape, and geographic location. The flight parameters are evaluated and compared using Leica's AEROPLAN LiDAR flight planning software, with the client being provided with a proposed flight plan report for the survey.

Kucera's LiDAR system is set up to be operated from Kucera aircraft based in Ohio, Florida, Missouri, and Colorado, and can be on-site within a short time period at low mobilization cost. Kucera maintains system calibration data for the aircraft bases of operation for pre- and post-mission calibration to ensure data quality. When performed in conjunction with an aerial photography survey, the LiDAR flyover is typically performed in the morning and evening hours, thereby reserving the optimal sun angle period for the photography survey while ensuring that the LiDAR survey is completed within the shortest possible time with consistent terrain conditions. Within hours of each flight session, both the airborne GPS/IMU and laser return data components are given an initial quality control check/accuracy verification.

The ALS 50 system provides three range returns as well as intensity return measurements. The range returns plus a last return, are processed to "bald earth" digital terrain/elevation models and other forms of digital height data (e.g., tree canopy, obstruction heights) using Terrasolid's LiDAR dedicated TERRASCAN software. Kucera's experienced staff subjects the collected data to a rigorous quality control review process, including data density/terrain variation analysis, data anomaly filtering, review of 3D/perspective views, review against corresponding digital orthophotography (where available) and photogrammetric review again corresponding stereo aerial photography (where available).

Perspective view of LiDAR DTM

During the photogrammetric review, breakline, skeletal line, spot elevation, and other height data is added to the LiDAR DEM as needed to support intended applications, such as contour generation, orthophotography, hydrologic modeling, volumetric calculations, highway corridor planning, and power transmission line mapping. Intensity measurement data provides a pseudo-photographic image which is used for quality control in addition to true photographic imagery or in place of photographic imagery where such is not available.

The LiDAR DEM/DTM data is provided in all standard GIS/CAD-compatible or organization-specific (e.g., FEMA) formats, including ASCII mass point files, TIN models, and contours. The delivery includes an accuracy verification/quality control inspection report and metadata in the client-specified format.

The Kucera project planning and data processing staff has over 30 years of experience in planning, acquiring, generating, and evaluating all forms of digital surface models using a diverse range of techniques from traditional photogrammetry to the latest airborne and satellite remote sensing technology, including LiDAR, to meet each client's terrain modeling requirements with the most accurate, timely, and cost-effective methods.

Aerial Imaging

Kucera has had in-house aerial imaging capability since its founding the late 1940s and continues to provide aerial photography and other types of aerial imaging as a primary service.

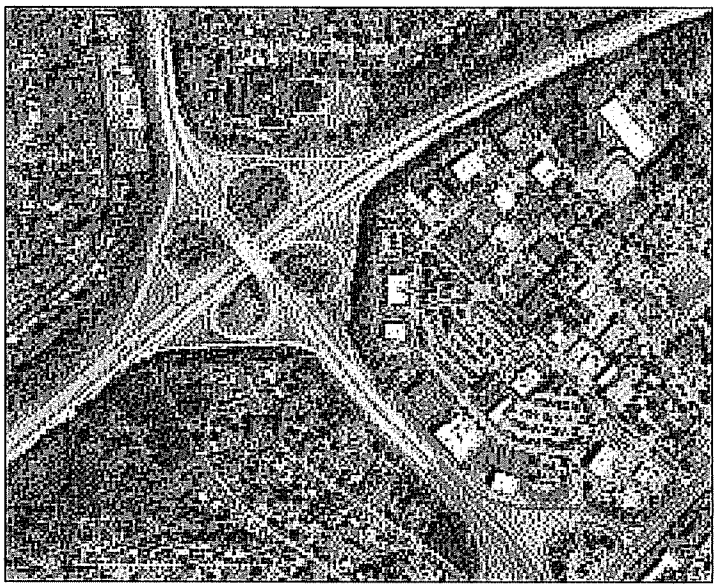
Kucera currently performs some 2500 individual aerial photo/imaging missions annually covering sites throughout the US and abroad ranging in size from single features to thousands of square miles. Over the past decade, Kucera has completed aerial photography in 35 American states and four foreign countries, including coverage of 200 different county and citywide areas. Kucera also regularly performs photo missions in restricted airspace areas over airports, military bases, and other sensitive areas.

Kucera operates a fleet of five aircraft, including two twin-engine Cessna 310s, a twin-engine Piper Navajo Chieftain, and two single-engine Cessna TU206s. The aircraft can be operated at cruise speeds of 100 to 180 knots and from altitudes of 1000' to 24000'. All aircraft are outfitted with GPS-based flight management and navigational systems for efficient and accurate mission planning and coverage.

Kucera's primary photogrammetric-grade image acquisition systems are latest generation USGS-calibrated and NAPP-program-approved Zeiss RMK TOP 15 and LMK 1000 series optical aerial cameras with built-in forward motion compensation (FMC) and AWAR resolution ratings in the highest range. The cameras are operated in manually leveled or automatic gyrostabilizing mounts and are linked to geodetic-grade Applanix 510 POS/AV airborne GPS/IMU systems which record the camera position and spatial orientation at the instant of each exposure for automated image georeferencing accurate to within inches.

Kucera has also performed aerial surveys with non-photogrammetric image systems including digital video recorders, small-format digital cameras, and thermal scanning systems. These are adapted to Kucera's camera mounts and are linked to the airborne GPS/IMU systems as needed for in-flight georeferencing.

In the initiation phase for each aerial imaging project a flight line plan is prepared with the recommended flight altitude and flight line pattern based on project parameters such as required map/image scale, accuracy, and resolution, ground control pattern, size and shape of project area, type of terrain/land cover, etc. The flight plan is reviewed with the client as needed before proceeding with the flyover and once finalized is entered into the flight management/GPS navigation system.



Kucera provides aerial photography and aerial imaging services using its fleet of five aircraft.

Flyovers are performed at the first possible window of opportunity, with Kucera's aircraft being based not more than a few hours' flying time from the project to ensure the flyover is completed in the shortest possible time with consistent conditions. The client is updated frequently on the flyover status until the imagery is captured and checked. Inspection/QC of the project imagery begins immediately upon acquisition with review of the airborne GPS/IMU results, followed by direct inspection of the imagery at Kucera's facilities. Clients are furnished with flight indexes, flight reports, and samples/prints of the imagery as needed for documentation of the flyover. The raw imagery/aerial film is forwarded on to the client or stored securely at Kucera's facility at no added cost.

Kucera operates full-service photographic laboratories at each of its production facilities for processing and titling photographic imagery as needed and for any subsequent photo reproduction work required (e.g., contact printing, photo enlarging, etc.). The photo labs are equipped with automated roll and sheet film processors, rectifying photo enlargers, auto-dodging black and white and color contact printers, and computerized engineering copy cameras. All photographic processing and reproduction work is accomplished with sensitometric quality control monitoring.

Kucera's *Aerial Image Bank*, a library of existing/historical aerial imagery, has film-based and/or digital coverage of over 500 counties/cities and thousands of smaller areas in over 40 states. A computer database of coverage data indexed by geographic name and/or coordinate location is used for instant determination of coverage specifics and availability.

Digital Orthophotography

Kucera has been one of the country's largest producers of orthophotography since the mid-1980s, when Kucera became one of the few companies to operate a then state-of-the-art Zeiss Z2 Orthocomp analytical orthophoto system. In the mid 1990s the Orthocomp system was replaced with digital orthophoto production technology, with which Kucera currently produces tens of thousands of digital orthophotos annually in color or in black and white at scales and pixel resolutions ranging from 1"=10'/0.1' pixel to 1"=1000'/4' pixel.

Kucera's digital orthophoto production is a multi-stage process involving image rectification and initial quality control review, automated processing of the rectified imagery, and final manual quality control review and edit.

Image rectification is performed on Inpho OrthoMaster and Z/I OrthoPro dedicated digital orthophoto production stations. Before commencing the rectification, the digital aerial imagery to be rectified and the digital elevation/terrain model (DEM/DTM) to be used for the rectification is visually inspected and organized. Trimble Terramodel software is used to process the project DEM/DTM to a point grid supporting the rectification. The digital aerial imagery is pixel-rectified in a batch process to the DEM/DTM point grid using a high-grade radiometric interpolation, with resampling to the target pixel resolution performed with a bicubic or bilinear resampling algorithm. Quality control of the rectification process includes visual inspection of the imagery for observable distortions and other anomalies, checking of the geometric accuracy "fit" of the imagery to the project survey control, and checking ties with adjacent rectified images within and between flight lines.

After rectification, the imagery is tone balanced and processed into the final seamless image tiles using Zeiss OrthoVista, an advanced orthophoto image processing technology that performs optimized image tone adjustment, resampling, and tile formation in a batch mode. Blocks of rectified images are processed to a seamless overall image representation, from which coordinate-defined tiles and/or resampled imagery is copied/extracted and output in the appropriate format. OrthoVista software automatically selects areas of limited tone transition for seam line placement and has a "seam editor" feature for manual seam line adjustment.

Following automated processing, the orthophoto image files are subject to a thorough manual inspection, including checks of automated processing and other image artifacts (expectation of near 100% absent); tone transition (expectation < 10%variance); edge match, control target, and compiled feature offset (within project accuracy tolerance); elevated features (no breaks or warping); shadow/highlight areas (expectation of good detail visibility); color/contrast (expectation of match to client-approved sample), and vertical feature lean. The aerial imagery is rectified to both the ground surface DEM/DTM and breakline data representing the bridge deck to generate an accurate image representation. "Lean" effects of more significant vertical features are minimized by using increased image overlap in the aerial photo acquisition and selecting/constructing optimal image views. Kucera's Inpho OrthoMaster software also has automated routines for the generation of "true" orthophotography with complete lean elimination across the imagery.

The finalized orthophotography is provided in a variety of tile schemes and uncompressed and/or compressed image formats. The imagery is furnished on a variety of media with image file names corresponding to the tile numbering/naming system. All delivery media are referenced to the tile index with client-specified labeling.

Supplemental deliverables Kucera provides with orthophotography include quality control tracking/image catalog software (Kucera QuickView), metadata in FGDC and/or other formats, "fly-through" landscape movies (OrthoScape), and high-resolution color or black and white laser or inkjet hardcopy sheet plots up to 60" x 120" in size.