

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
ASSISTANCE AWARD



1	AWARD TYPE	2	AWARD NUMBER	3	REQUISITION NUMBER
<input type="checkbox"/> Grant <input checked="" type="checkbox"/> Cooperative Agreement			08WRAG0036		08-9040-0053

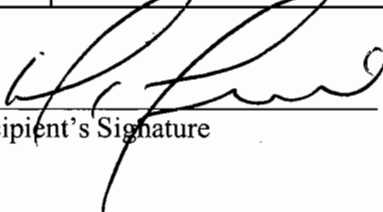
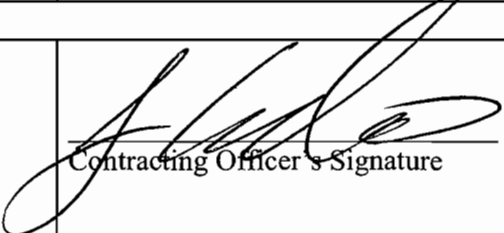
4	RECIPIENT	5	ISSUED BY
Name & Address: Geology and Mineral Industries, Oregon Department of 800 NE Oregon St., Ste. 965 #28 Portland, OR 97232-2162 DUNS 809579816 HHS PMS Sub-account No. 08WRAG0036		Name & Address: U. S. Geological Survey Office of Western Regional Services Branch of Acquisition and Grants 3020 State University Drive East, Suite 2002 Sacramento, CA 95819 Jeff Caravelli, (916) 278-9341 or jcaravelli@usgs.gov	

6	APPLICATION TITLE & DATE
2008-2009 Oregon Lidar Consortium, dated 03 July 2008	

7	AWARD PERIODS	8	FISCAL DATA
Budget Period: Effective date through 01 December 2009 Total Project Period: Effective date through 01 December 2009 Effective Date: Date of signature by USGS Contracting Officer		Federal Share: \$287,400.00 Non-Federal Share: \$1,000,000.00 Total Project Cost: \$1,287,400.00 Appropriation/Object Class: Obligated: 08/09-9046-CBE9R-411C \$37,400.00 08/09-9046-CBE9S-411C \$250,000.00 DCN No. 08WRAG0036	

9	PRINCIPAL INVESTIGATOR	10	USGS PROGRAM OFFICER
Ian Madin Chief Scientist – DOGAMI (971) 673-1542 ian.madin@dogami.state.or.us		Sheri Schneider Geospatial Liaison – USGS, OR (503) 310-1531 sschneider@usgs.gov	

11	ADMINISTRATIVE DATA	12	FAADS DATA
CFDA Number: 15.808 Program: U.S. Geological Survey – Research and Data Collection Legislative Authority: 43 USC 36d		City Code: 59000 - Portland County Code: 051 - Multnomah State Code: 41 - Oregon Congressional District: OR-03 FAADS Class: 00 – State Government	

13		AUTHORIZED SIGNATURES	
	<i>Aug 12 '08</i>		<i>8/20/2008</i>
Recipient's Signature	Date	Contracting Officer's Signature	Date
_____ Don Lewis, Assistant Director TYPED NAME AND TITLE		_____ Jeffrey M. Caravelli, Contracting Officer TYPED NAME AND TITLE	

9-2092
OPS/OAFA (Rev 1/2000)

**U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY
ASSISTANCE AWARD**



1 | **AWARD TYPE** | **2** | **AWARD NUMBER** | **3** | **REQUISITION NUMBER**

 Grant
 X Cooperative Agreement

08WRAG0036

08-9040-0053

4 | **RECIPIENT** | **5** | **ISSUED BY**

Name & Address:

**Geology and Mineral Industries, Oregon Department of
800 NE Oregon St., Ste. 965 #28
Portland, OR 97232-2162
DUNS 809579816**

HHS PMS Sub-account No. **08WRAG0036**

Name & Address:

**U. S. Geological Survey
Office of Western Regional Services
Branch of Acquisition and Grants
3020 State University Drive East, Suite 2002
Sacramento, CA 95819
Jeff Caravelli, (916) 278-9341 or
jcaravelli@usgs.gov**

6 | **APPLICATION TITLE & DATE**

2008-2009 Oregon Lidar Consortium, dated 03 July 2008

7 | **AWARD PERIODS** | **8** | **FISCAL DATA**

Budget Period: **Effective date through 01 December 2009**

Total Project Period: **Effective date through 01 December 2009**

Effective Date: **Date of signature by USGS Contracting Officer**

Federal Share: **\$287,400.00**
Non-Federal Share: **\$1,000,000.00**
Total Project Cost: **\$1,287,400.00**

Appropriation/Object Class: Obligated:
08/09-9046-CBE9R-411C \$37,400.00
08/09-9046-CBE9S-411C \$250,000.00

DCN No. **08WRAG0036**

9 | **PRINCIPAL INVESTIGATOR** | **10** | **USGS PROGRAM OFFICER**

Ian Madin
Chief Scientist – DOGAMI
(971) 673-1542
ian.madin@dogami.state.or.us

Sheri Schneider
Geospatial Liaison – USGS, OR
(503) 310-1531
sschneider@usgs.gov

11 | **ADMINISTRATIVE DATA** | **12** | **FAADS DATA**

CFDA Number: **15.808**

Program: **U.S. Geological Survey – Research and Data Collection**

Legislative Authority: **43 USC 36d**

City Code: **59000 - Portland**
County Code: **051 - Multnomah**
State Code: **41 - Oregon**
Congressional District: **OR-03**
FAADS Class: **00 – State Government**

13 | **AUTHORIZED SIGNATURES**

_____ Recipient's Signature _____ TYPED NAME AND TITLE	_____ Contracting Officer's Signature Jeffrey M. Caravelli, Contracting Officer _____ TYPED NAME AND TITLE
_____ Date	_____ Date

A Cooperative Agreement (number 08WRAG0036) between

**The U.S. Geological Survey
National Geospatial Program Office**

and

Oregon Department of Geology and Mineral Industries

ARTICLE I: STATEMENT OF JOINT OBJECTIVES

The U.S. Geological Survey, National Geospatial Program Office (USGS) and the Oregon Department of Geology and Mineral Resources (DOGAMI, or the Recipient) are mutually interested and desire to cooperate in the acquisition of LIDAR data in Oregon.

ARTICLE II: PROJECT DESCRIPTION

1. Background

The United States Geological Survey (USGS) Western Region Oregon NSDI Partnership Office is responsible for coordinating geospatial data and partnership needs for the implementation of *The National Map* in Oregon, and fostering expansion of the National Spatial Data Infrastructure (NSDI) and the Office of Management and Budget's (OMB) Geospatial One-Stop (GOS) Initiative. USGS Partnership funds to assist in acquiring Light Detection And Ranging (Lidar) data is a key component of this effort. In addition, the National Geospatial-Intelligence Agency (NGA) has allocated funding to the USGS Oregon NSDI Partnership Office for the acquisition of Lidar data covering the Salem-Keizer Urban Area. This data will be of use to NGA, The National Map, and Geospatial One-Stop.

In 2007, the Oregon State legislature allocated \$1.5 million dollars for Lidar acquisition and instructed that an Oregon Lidar Consortium be formed with the Department of Geology and Mining (DOGAMI) coordinating the state leadership. The USGS; the Bureau of Land Management (BLM); the U.S. Department of Agriculture (USDA) Forest Service (FS); the counties of Linn, Benton, and Marion, OR; and the Coquille Indian Tribe have joined with DOGAMI to form the Oregon Lidar Consortium (the Consortium) for the collection of data in Oregon. The Consortium continues to expand and add new partners monthly. The data collected will be of value to the Consortium partners listed above as well as other Federal, State, Regional, and Local agencies.

This Consortium (through DOGAMI) has contracted with Watershed Sciences through an open competitive process to obtain Lidar data over portions of Coos, Curry, Lane, Douglas, Linn, Benton, Polk, Yamhill, Clackamas, Washington, Columbia, and Marion counties in western Oregon.

The USGS Oregon Partnerships Office, through this Agreement, will provide funding to DOGAMI for inclusion of NGA/USGS Partnership requirements and specifications in the 2008 Oregon Lidar Consortium project. This will result in an overall decrease in project costs for USGS and its partners; significantly reduce program duplication; build on established relationships between USGS and its partners; and promote better coordination with other entities that have LIDAR data acquisition interests in the project area. The USGS Oregon Partnerships Office will be responsible for coordination of the project with DOGAMI and the other Oregon Lidar Consortium partners.

2. Scope

This Agreement covers funding for the acquisition of Lidar data as part of the 2008 Oregon Lidar Consortium project. The NGA funding of \$37,400 will cover the Salem-Keizer Urban Area portion of the project area. USGS Partnership funds of \$250,000 will contribute to the rest of the project area. The Lidar project area is a maximum of 6873 sq. miles with an estimated cost of \$3.7 million dollars. The project area consists of two blocks, the South Coast and the Willamette Valley. The South Coast block will be flown in spring 2008 and has a finalized boundary of 2500 square miles with a cost of \$1.3 million dollars. The Willamette Valley block will be flown in fall 2008 and will have the boundary and costs finalized in summer 2008. The approximate boundary is a minimum of 1500 sq. mi. with a cost of \$825,000 and up to 4373 sq. mi. with a cost of \$2.4 million dollars. The Salem-Keizer Urban Area will be flown as part of the Willamette Valley acquisition area.

Specifications for the data being supplied to the USGS are included in Article II, Section 6. A graphic of the estimated project area is shown in Article II, Section 8. Adjustments may be made to the total project area, but the cost in NGA or USGS partnership funds shall not exceed the dollar amount stated elsewhere herein. Acquisition of the LIDAR data is planned for the spring and fall of 2008. This data set will be distributed in the Public Domain.

The USGS share for this work will be \$287,400. Funds will be available in Federal Fiscal Year 2008. See Article III for further information.

The USGS will work closely with DOGAMI to ensure that the LIDAR data acquired through this Agreement meets NGA/USGS technical requirements. USGS involvement will include participation in project planning, technical assistance, and distribution of the data to NGA, The National Map, and Geospatial One-Stop. The USGS will provide program resources to adequately inform its partners and other interested parties at the Federal, State, Regional, and Local levels about the project and the acquired LIDAR data.

3. Responsibilities

3.1 DOGAMI will:

- (a) Provide all necessary personnel, equipment, and facilities to award, administer, and monitor the LIDAR acquisition program.
- (b) Provide in a timely manner, pre- and post-flight deliverables as described below in Article II, Sections 6 and 7.
- (c) Coordinate the overall project for the Consortium.
- (d) Notify USGS on the progress of task activities and deliverables on a quarterly basis

3.2 USGS OR Partnerships Office will:

- (a) Provide coordination with DOGAMI and other consortium partners during the course of the project
- (b) Distribute final deliverables to NGA, The National Map, and Geospatial One-Stop.

4. Schedule

LIDAR data collection is scheduled for the spring/fall of 2008. USGS shall receive all final deliverables by December 1, 2009.

5. Points of Contact

5.1 USGS:

Sheri Schneider
U.S. Geological Survey
2130 SW 5th Ave.
Portland, OR 97201
503-251-3210
503-251-3470 fax
sschneider@usgs.gov

5.2 DOGAMI:

Ian Madin
 Chief Scientist
 Oregon Department of Geology and Mineral Industries
 #28, Suite 965
 800 NE Oregon Street
 Portland, OR 97232
 971 673 1542
ian.madin@dogami.state.or.us

6. Technical Specifications

Lidar Survey Specifications

Data acquisition	<i>Survey Design</i>	<i>Minimum requirements¹</i>
Laser pulse rate	Up to 116,000 pulses per second	
Returns per pulse	Up to 4	First and last (up to 2)
On-ground laser beam diameter	approx 25 cm	Between 10 cm and 100 cm
Scan angle	±13 degrees	≤ ±20 degrees
Aircraft altitude	800 m above ground	
Aircraft speed	105 knots	
Ground swath width	<500 meters	
Swath overlap	50% sidelap (100% overlap)	No voids between swaths. No voids because of cloud cover or instrument failure. <20% no-overlap area per project. No arbitrary 1 km x 1 km square with >50% no-overlap area
Aggregate pulse density	>8/m ²	Barring non-reflective areas (e.g., open water, wet asphalt): <ul style="list-style-type: none"> • ≥85% design pulse density for entire project area. • Within areas of swath overlap, no 30m x 30m area with <50% design pulse density
Flight line direction	Opposing	
GPS base-line length	≤24 km	

1 Local relief, turbulence, inability to maintain an exact flying height, and aircraft and instrument availability routinely lead to departures from the survey design. *Minimum requirements* listed here are the minimum acceptable under this contract. PSLC routinely evaluates delivered data to ensure compliance with minimum swath overlap and aggregate pulse density.

GPS PDOP	≤3.0, ≥6 satellites in view	≤3.5, ≥6 satellites in view
Survey conditions		Leaf-off and no significant snow cover at discretion of Puget Sound Lidar Consortium
Accuracy	<i>Survey Design</i>	<i>Minimum requirements</i>
Absolute accuracy	<13 cm vertical, <10 cm horizontal (RMSE) ²	≤20 cm vertical (RMSE) ³
Between-swath reproducibility ⁴		≤15 cm vertical on horizontal surfaces (RMSE)
Reproducibility of range measurements ⁵		≤5 cm (RMSE)
Spatial reference framework		
Vertical Datum	NAVD88, Geoid03 (unless otherwise specified)	
Horizontal Datum	NAD83	
Projection	UTM, State Plane, Oregon Lambert (as requested)	
Units	Meters (UTM) or survey/international feet (State Plane, Oregon Lambert)	

1. 1 Local relief, turbulence, inability to maintain an exact flying height, and aircraft and instrument availability routinely lead to departures from the survey design. Minimum requirements listed here are the minimum acceptable under this contract. PSLC routinely evaluates delivered data to ensure compliance with minimum swath overlap and aggregate pulse density.
2. 1 Watershed Sciences survey practices are optimized to achieve this absolute accuracy. Performance is verified by vendor-established ground control using hundreds of points per project.
3. 1 Routinely evaluated by PSLC using available ground control points (GCPs). Number of available GCPs in a survey area is commonly small thus required RMSE is calculated using the formula
$$RMSE \leq 20 \text{ cm} * ((n-1) - 2.326 * (n-1)^{1/2}) / n)^{1/2}$$
 where n is the number of GCPs.
4. 1 Extensive swath overlap allows for robust estimation of intra-survey reproducibility. Intra-survey measurement errors on flat ground are commonly 4-6 cm RMSE_Z, with an increase in

-
- 2 Watershed Sciences survey practices are optimized to achieve this absolute accuracy. Performance is verified by vendor-established ground control using hundreds of points per project.
 - 3 Routinely evaluated by PSLC using available ground control points (GCPs). Number of available GCPs in a survey area is commonly small thus required RMSE is calculated using the formula
$$RMSE \leq 20 \text{ cm} * ((n-1) - 2.326 * (n-1)^{1/2}) / n)^{1/2}$$
 where **n** is the number of GCPs.
 - 4 Extensive swath overlap allows for robust estimation of intra-survey reproducibility. Intra-survey measurement errors on flat ground are commonly 4-6 cm RMSE_Z, with an increase in Z errors as local slope increases. PSLC routinely analyzes samples of delivered data for conformance with this specification.

Because errors related to dense forest cover are outside the vendor's control, this contract includes no specification for the accuracy of bare-earth DEMs. The error of a bare-earth DEM includes errors in classifying points as ground and errors introduced by interpolation from scattered ground points to a continuous surface, as well as measurement errors. Analyses of swath-to-swath reproducibility suggest that, barring wholesale vertical shifts, errors of bare-earth DEMs produced by Watershed Sciences surveys of western Washington and northwest Oregon are circa 15 cm (RMSE_Z) or less.
 - 5 Evaluated by measuring departures from planarity of returns from planar surfaces (e.g., building roofs)

Z errors as local slope increases. PSLC routinely analyzes samples of delivered data for conformance with this specification.

Because errors related to dense forest cover are outside the vendor's control, this contract includes no specification for the accuracy of bare-earth DEMs. The error of a bare-earth DEM includes errors in classifying points as ground and errors introduced by interpolation from scattered ground points to a continuous surface, as well as measurement errors. Analyses of swath-to-swath reproducibility suggest that, barring wholesale vertical shifts, errors of bare-earth DEMs produced by Watershed Sciences surveys of western Washington and northwest Oregon are circa 15 cm (RMSE_Z) or less.

5. 1 Evaluated by measuring departures from planarity of returns from planar surfaces (e.g., building roofs)
6. 1 PSLC evaluates conformance by visual inspection of large-scale shaded-relief images. Tiling artifacts and measurement errors may also be identified during this inspection

7. Project Deliverables

Deliverables	
Report of Survey	Text report that describes survey methods; results; vendor's accuracy assessments, including internal consistency and absolute accuracy; and metadata <i>.pdf, .doc, or .odt format</i>
Aircraft trajectories (SBET files)	Aircraft position (easting, northing, elevation) and attitude (heading, pitch, roll) and GPS time recorded at regular intervals of 1 second or less. May include additional attributes. <i>ASCII text or shapefile format</i>
All-return point cloud	List of all valid returns. For each return: GPS week, GPS second, easting, northing, elevation, intensity, return#, return classification. May include additional attributes. No duplicate entries. <i>ASCII text and LAS version 1.1 format</i> <i>1/64th USGS 7.5-minute quadrangle (0.9375 minute by 0.9375 minute) tiles</i>
Ground point list	List of X,Y,Z coordinates of all identified ground points. <i>ASCII text.</i> <i>1/4th USGS 7.5-minute quadrangle (0.375 minute by 0.375 minute) tiles</i>
Ground surface model	Raster of ground surface, interpolated via triangulated irregular network from identified ground points. No unavoidable point misclassification ⁶ <i>ESRI floating point grid, 6 ft or 3 ft (2m or 1m) cell size, snapped to (0,0), 1/4th USGS 7.5-minute quadrangle (0.375 minute by 0.375 minute) tiles</i>
First-return (highest-hit) surface model	Raster of first-return surface, cell heights are highest recorded value within that cell, voids may be filled with ground surface model <i>ESRI floating point grid, 6 ft or 3 ft (2m or 1m) cell size, snapped to (0,0), 1/4th USGS 7.5-minute quadrangle (0.375 minute by 0.375 minute) tiles</i>
Surface models shall have no tiling artifacts and no gaps at tile boundaries. Areas outside survey boundary shall be coded as NoData. Internal voids (e.g., open water areas, shadowed areas in first-return	

⁶ OLC evaluates conformance by visual inspection of large-scale shaded-relief images. Tiling artifacts and measurement errors may also be identified during this inspection

surface) may be coded as NoData.

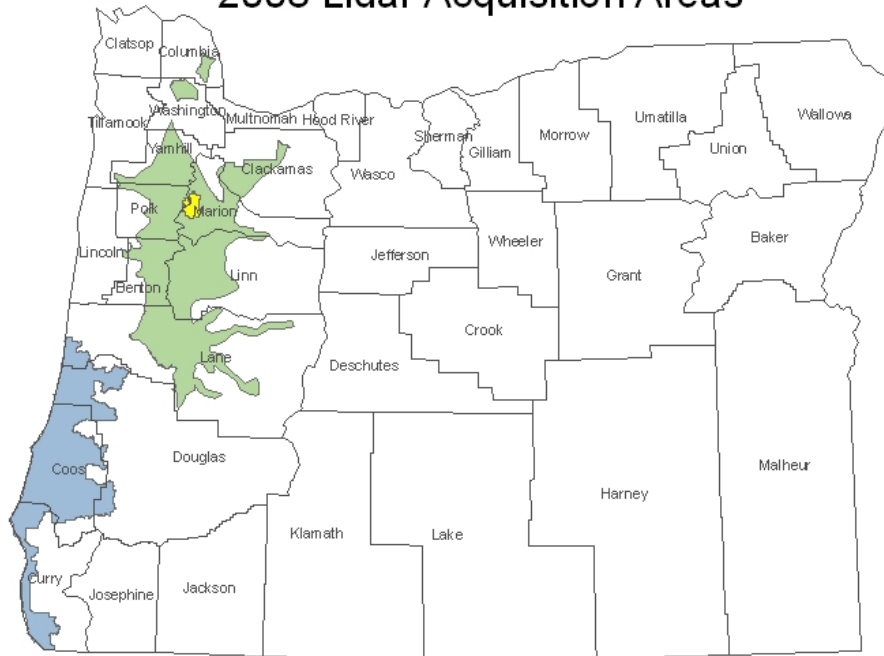
Intensity image

GeoTIFF, 3 ft (1m) pixel size, 1/4th USGS 7.5-minute quadrangle (0.375 minute by 0.375 minute) tiles

Files shall conform to a consistent naming scheme. Files shall have consistent internal formats.

8. Project Area

Oregon Lidar Consortium 2008 Lidar Acquisition Areas



Legend

County Boundaries

Salem-Kiezer Urban Area will be flown as part of the Oregon Lidar Consortium Acquisition Area

2008 Oregon Lidar Consortium Willamette Valley Block Acquisition Area boundary to be finalized Summer 2008

2008 Oregon Lidar Consortium South Coast Block Acquisition Area finalized boundary

Key Personnel

The personnel named below are hereby identified as key personnel and are considered essential to the work being performed hereunder.

Name	Title	Estimated Level of Effort
Ian Madin	Chief Scientist	Not Specified/Advisory

ARTICLE III: FINANCIAL SUPPORT

Financial support for research efforts conducted under this Agreement is hereby obligated by the USGS in the amount of \$287,400.00, in accordance with (IAW) the Recipient's Application for Federal Assistance (SF 424) and the Recipient's Budget Information – Non-Construction Programs (SF 424A), dated 03 July 2008. The Government's obligation to make payment to the Recipient is limited to only those funds obligated by this Agreement or by written modification to this Agreement; nothing in this Agreement authorizes the Recipient to incur costs in excess of the agreed upon costs as set forth herein.

Pre-Agreement Costs

In accordance with 2 CFR 225 App. B section 31, the Recipient shall be entitled to reimbursement of costs incurred prior to the effective date of this Agreement which are directly pursuant to the negotiation and in anticipation of the Agreement to the extent that such costs are necessary to comply with the proposed delivery schedule or period of performance and which, if incurred after this Agreement had been entered into, would have been reimbursable under the cost principles applicable to the Recipient as outlined in Article VIII. Notwithstanding these 'pre-agreement' costs, the USGS' total obligation shall not exceed the amount obligated by this Agreement.

Revision of Budget or Project Description (Changes)

Any proposed change which requires the prior written approval of the USGS shall be submitted in writing to the Contracting Officer thirty (30) days prior to the requested effective date of the proposed change.

The following changes require prior written approval by the Contracting Officer:

- 1) Any revision which would result in the need for additional funding.
- 2) Any revision to the scope or objective(s) of this Agreement, regardless of whether there is an associated budget revision.
- 3) Any change to "key personnel" specified in Article II.

4) Unless described in the application and approved by the execution of this Agreement, the subaward, subcontracting, or transfer of any portion of this Agreement, except for the purchase of material, supplies, equipment, or general support services.

5) The transfer of funds allotted for training allowances (direct payment to trainees) to other categories of expense.

6) If the total value of this Agreement exceeds \$100,000.00, cumulative transfers among direct cost categories or, if applicable, among separately budgeted programs, projects, functions, or activities which exceed or are expected to exceed ten (10) percent of the total value of this Agreement.

7) For institutions of higher education, hospitals, or other non profits; or organizations for profit, individuals, or “other” organizations or entities not otherwise classified, the inclusion of costs that require prior approval in accordance with the cost principles applicable to the Recipient as outlined in Article VIII.

8) For institutions of higher education, hospitals, or other non profits; or organizations for profit, individuals, or “other” organizations or entities not otherwise classified, the absence for more than three (3) months, or a twenty-five (25) percent reduction in the time devoted to this Agreement, by the approved project director or principal investigator.

9) For state, local, or Indian tribal governments, the need to extend the period of availability of funds.

The Contracting Officer will respond to the change request within thirty (30) days of receipt.

ARTICLE IV: PAYMENT AND FINANCIAL REPORTING

(a) Method of Payment

The USGS is using the Health and Human Services (HHS) Payment Management System (PMS) to provide electronic invoicing and payment for assistance award recipients. The Recipient has established or will establish an account with PMS. With the award of each grant/cooperative agreement, a sub-account will be set up from which the Recipient can draw down funds. The sub-account number will be shown in block 4 of the face page of each award or modification.

Payments will be made available through PMS. The PMS is administered by the Department of Health and Human Services (DHHS), Division of Payment Management of the Financial Management Service, Program Support Center. The DHHS will forward instructions for obtaining payments to the Recipient. Inquiries regarding payment should be directed to:

Division of Payment Management
Department of Health and Human Services
P. O. Box 6021
Rockville, MD 20852

The Division of Payment Management web address is www.dpm.psc.gov. Problems or questions with electronic draw down procedures should be directed to Raynette Robinson at 301-443-9180 or raynette.robinson@psc.hhs.gov.

Payments may be drawn in advance only as needed to meet immediate cash disbursement needs.

(b) Financial Reporting Requirements

(1) STANDARD FORM 269/269A, FINANCIAL STATUS REPORT (original and one (1) copy, or electronic) is required annually and at project completion. The SF 269 is due thirty (30) days after the reporting period for quarterly and semiannual reports, and ninety (90) days after the reporting period for annual and final reports.

(i) FINAL FINANCIAL STATUS REPORT PROCEDURES. With submission of the final financial status report, due not later than ninety (90) days after the completion date of this Agreement, the Recipient shall promptly return any unexpended federal cash advances or complete a final draw from PMS to obtain any remaining amounts due. Once 120 days has passed since the completion date of this Agreement, the PMS subaccount for this Agreement may be closed by USGS at any time.

(ii) SUBSEQUENT REVISION TO THE FINAL FINANCIAL STATUS REPORT will be considered only as follows:

(A) When the revision results in a balance due to the USGS, the Recipient shall submit a revised SF 269 and refund the excess payment whenever the overcharge is discovered, no matter how long the lapse of time since the original due date of the report.

(B) When the revision represents additional reimbursable costs claimed by the Recipient, a revised SF 269 may be submitted to the Contracting Officer with an explanation. If approved, the USGS will either request and pay a final invoice or reestablish the PMS subaccount to permit the Recipient to make a revised final draw. Any revised final report representing additional reimbursable amounts must be submitted no later than one (1) year from the due date of the original report, i.e., fifteen (15) months following the Agreement completion date. USGS will not accept any revised SF 269 report covering additional expenditures after that date and will return any late request for additional payment to the Recipient.

(2) In lieu of the STANDARD FORM 272/272A, FEDERAL CASH TRANSACTIONS REPORT, the PSC 272, FEDERAL CASH TRANSACTIONS

REPORT, STATUS OF FEDERAL CASH is required quarterly and shall be completed electronically through the PMS system. Instructions and further details about this process can be found here:

http://www.dpm.psc.gov/grant_recipient/psc_272_reports/psc_272_reports.aspx?explorer_event=true

If after 45 days, recipient has not submitted a report, the account will be placed in a manual review status. Funds may be withheld for accounts with delinquent reports.

ARTICLE V: TERM OF THE AGREEMENT

This Agreement shall become effective upon the date of signature by the USGS Contracting Officer and shall remain in effect until 01 December 2009 unless sooner terminated in accordance with those provisions applicable to the Recipient as outlined in Article VIII.

This Agreement may be modified or extended at any time by mutual written consent of the parties. In no event shall the total term of this Agreement exceed five (5) years.

ARTICLE VI: PROJECT INFORMATION SYSTEMS

Records and reports shall be maintained by the Recipient in accordance with those provisions applicable to the Recipient as outlined in Article VIII. The Recipient shall permit the USGS, the Inspector General of the Department of the Interior, the Comptroller General of the United States, or any of their authorized representatives, the right to examine all records, books, papers or documents relating to this Agreement.

Publications – Acknowledgement

The Recipient shall place an acknowledgment of USGS support on any publication written or published with such support and, if feasible, on any publication reporting the results of, or describing, a supported activity. An acknowledgment shall be to the effect that:

The project described in this publication was supported by Grant/Cooperative Agreement Number _____ from the United States Geological Survey.

Publications – Library Deposit

Ten (10) copies of any publication produced under this Agreement shall be provided to the Program Officer for deposit in the U.S. Department of the Interior Natural Resources and USGS libraries. This requirement does not apply to journal articles.

Performance Reports

The Recipient shall submit annual performance reports to the designated office yearly, notwithstanding that this Agreement may provide for payment on a more frequent basis. This report is due no later than 90 days after the close of the period covered by the report. In the event that the term of this Agreement is less than one (1) year in duration, a single annual report (final report) shall be required no later than 90 days after completion of this Agreement.

The annual reports shall include the following information:

A comparison of actual accomplishments to the goals established for the period. Where the output of the project can be readily quantified, such quantitative data should be related to cost data for computation of unit costs.

Reasons why established goals were not met, if appropriate.

Other pertinent information including, where appropriate, analysis and explanation of cost overruns or high unit costs.

Between the required performance reporting dates, events may occur which have significant impact upon the project or program. In such cases, the Recipient shall inform the USGS as soon as the following types of conditions become known:

Problems, delays, or adverse conditions which will materially affect the ability to attain program objectives, prevent the meeting of time schedules and goals, or preclude the attainment of project work. This disclosure shall be accompanied by a statement of the action taken or contemplated, and any Federal assistance needed to resolve the situation.

Favorable developments or events which enable meeting time schedules and goals sooner than anticipated or producing more work units than originally projected.

ARTICLE VII: PROPERTY MANAGEMENT AND DISPOSITION

Any property provided by the USGS or acquired by the Recipient with funds from this Agreement shall be managed and disposed in accordance with those provisions applicable to the Recipient as outlined in Article VIII. No property shall be disposed of without written consent by the USGS Contracting Officer.

No property shall be provided by the USGS or acquired by the Recipient with funds from this Agreement.

ARTICLE VIII: GENERAL PROVISIONS

General Regulations and Requirements

The Recipient shall comply with the following:

A. Educational Institutions

- 2 CFR 220, Cost Principles for Educational Institutions (OMB Circular No. A-21)
- OMB Circular No. A-110, Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, hospitals, and Other Non-profit Organizations, as implemented in 2 CFR 215 and 43 CFR Part 12, Subpart F.
- OMB Circular No. A-133, Audits of States, Local Governments and Non-Profit Organizations, as implemented in 43 CFR Part 12, Subpart A: Administrative and Audit Requirements and Cost Principles for Assistance Programs

B. State, Local, and Indian Tribal Governments

- 2 CFR 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87)
- OMB Circular A-102, Grants and Cooperative Agreements with State and Local Governments; as implemented in 43 CFR Part 12, Subpart C
- OMB Circular No. A-133, Audits of States, Local Governments and Non-Profit Organizations, as implemented in 43 CFR Part 12, Subpart A: Administrative and Audit Requirements and Cost Principles for Assistance Programs

C. Non-Profit Organizations

- 2 CFR Part 230, Cost Principles for Non-Profit Organizations (OMB Circular A-122), except recipients listed in Appendix C to Part 230 are subject to Federal Acquisition Regulation (FAR) Subpart 31.2, Contracts with Commercial Organizations (Contract Cost Principles and Procedures)
- OMB Circular No. A-110, Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, hospitals, and Other Non-profit Organizations, as implemented in 2 CFR 215 and 43 CFR Part 12, Subpart F.
- OMB Circular No. A-133, Audits of States, Local Governments and Non-Profit Organizations, as implemented in 43 CFR Part 12, Subpart A: Administrative and Audit Requirements and Cost Principles for Assistance Programs

D. Organizations for Profit, Individuals, and Others Not Covered Above

- Federal Acquisition Regulation (FAR) Subpart 31.2, Contracts with Commercial Organizations (Contract Cost Principles and Procedures)

- OMB Circular No. A-110, Uniform Administrative Requirements for Grants and Other Agreements with Institutions of Higher Education, hospitals, and Other Non-Profit Organizations, as implemented in 2 CFR 215 and 43 CFR Part 12, Subpart F,
- FAR Subpart 42.1, Contract Audit Services; FAR Subpart 42.7, Indirect Cost Rates; FAR Subpart 42.8, Disallowance of Costs

Additionally, this Agreement is subject to the following Government-wide regulations:

- 2 CFR 180, Government Debarment and Suspension (Nonprocurement)

And the following regulations of the U.S. Department of the Interior:

- 43 CFR Part 12, Subpart E: Buy American Requirements for Assistance Programs
- 43 CFR Part 17, Subpart A: Nondiscrimination on the Basis of Race, Color, or National Origin
- 43 CFR Part 17, Subpart B: Nondiscrimination on the Basis of Handicap
- 43 CFR Part 17, Subpart C: Nondiscrimination on the Basis of Age
- 43 CFR Part 18, New Restrictions on Lobbying
- 43 CFR Part 41, Nondiscrimination on the basis of sex in education programs or activities receiving Federal financial assistance (*applies if this Agreement provides assistance to an education program or activity, whether or not the recipient is an educational institution*)
- 43 CFR Part 42, Government Debarment and Suspension (Nonprocurement)
- 43 CFR Part 43, Governmentwide Requirements for Drug Free Workplace

Buy American Act

The Recipient is subject to the requirements of 43 CFR Part 12, Subpart E entitled “Buy American Requirements for Assistance Programs.” Additionally, in accordance with Title III, sections 307(b) and 307(d) of H.R. 3423, incorporated by cross-reference in the conference report to H.R. 3194, enacted as the FY 2000 Consolidated Appropriations Bill, Public Law 106-113, the following provision is included:

In the case of any equipment or product that may be authorized to be purchased with financial assistance provided using funds made available in FY 2000 and thereafter, it is the sense of the Congress that entities receiving the assistance should, in expending the assistance, purchase only American-made equipment and products.

Metric System of Measurement

In accordance with 43 CFR §12.915 and Executive Order 12770, entitled “Metric Usage in Federal Government Programs,” the following provision is included:

All progress and final reports, other reports, or publications produced under this Agreement shall employ the metric system of measurements to the maximum extent practicable. Both metric and inch-pound units (dual units) may be used if necessary during any transition period(s). However, the Recipient may use non-metric measurements to the extent the Recipient has supporting documentation that the use of metric measurements is impracticable or is likely to cause significant inefficiencies or loss of markets to the Recipient, such as when foreign competitors are producing competing products in non-metric units.

Anti-Lobbying

The Recipient is subject to the requirements of 43 CFR Part 18, entitled “New Restrictions on Lobbying.” Additionally, in accordance with Division F, Title IV, section 402 of H.R. 2764, enacted as the Consolidated Appropriations Act, 2008, Public Law 110-161, the following provision is included:

The Recipient shall not use any part of the appropriated funds from the Department of Interior for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete other than to communicate to Members of Congress as described in 18 U.S.C. §1913.

Use of Government-Owned Vehicles

(a) When it is in the interests of the parties, and with the concurrence of the USGS Contracting Officer, the USGS Program Officer may authorize the Recipient to use a Government-owned vehicle (GOV) to perform work within the scope of this Agreement. The specific GOV provided and the periods of use by the Recipient are subject to availability and the mutual agreement of the parties.

(b) GOVs may only be used by bona fide employees of the Recipient for performance of work within the scope of this Agreement. Recipient employees shall not use any GOV for commuting to and from home and shall not store any GOV other than at the worksite except as required to perform fieldwork under the scope of this Agreement and with written authorization of the USGS Program Officer.

(c) Before any Recipient employee drives a GOV, the employee's supervisor must assure that the employee is at least 18 years of age, has a valid license to drive the type of vehicle to be used and a clean driving record, and understands all applicable state, local and federal (including USGS) laws and regulations.

(d) Before the first use of a GOV under this Agreement, the Recipient shall provide the USGS Contracting Officer with proof of liability insurance or self insurance for at least the following coverage: \$200,000 per person and \$500,000 per occurrence for bodily injury; and \$40,000 per occurrence for property damage. Subject to the limitations and conditions of any state or local laws limiting tort claims, the Recipient agrees to accept

responsibility for all tort claims resulting from accidents occurring while the GOV is under the control of Recipient employees. In the event of an accident while the GOV is in use by a Recipient employee, the Recipient shall immediately submit a report using Standard Form 91, Operator's Report of Motor Vehicle Accident, and 91A, Investigative Report of Motor Vehicle Accident, or equivalent forms to the USGS Contracting Officer.

(e) Reimbursement of reasonable costs for fuel and/or emergency supplies required to safely operate the GOV and necessary to perform work within the scope of this Agreement are allowable in accordance with the cost principles applicable to the Recipient as outlined in Article VIII. The USGS will provide the GOV's preventive maintenance and related supplies unless otherwise agreed to.

(f) Use of a GOV is subject to OMB Circular A-110, part 33, regarding the use of Government-owned controlled property, 41 CFR 101-39.2 and 39.3, 41 CFR 102-34, US Geological Survey Manual Chapters 409.1 and 451.1, and all applicable state and local laws and regulations.

Seat Belt Use

In accordance with 43 CFR §12.2 and Executive Order 13043, entitled "Increasing Seat Belt Use in the United States," the following provision is included:

Recipients of grants/cooperative agreements and/or sub-awards are encouraged to adopt and enforce on-the-job seat belt use policies and programs for their employees when operating company-owned, rented, or personally owned vehicles. These measures include, but are not limited to, conducting education, awareness, and other appropriate programs for their employees about the importance of wearing seat belts and the consequences of not wearing them.

Use of U.S. Flag Air Carriers

Any air transportation to, from, between or within a country other than the U.S. of persons or property, the expense of which will be paid in whole or in part by U.S. Government funding, must be performed by, or under a code-sharing arrangement with, a U.S. flag air carrier if service provided by such a carrier is "available" (49 U.S.C. §40118, commonly referred to as the Fly America Act). Tickets (or documentation for electronic tickets) must identify the U.S. flag air carrier's designator code and flight number. See the Federal Travel Regulation §301-10.131 - §301-10.143 for definitions, exceptions, and documentation requirements. (See also Comp. Gen. Decision B-240956, dated September 25, 1991.)

Activities on Private and Other Non-Federal Lands

Paragraph (a) applies only if this Agreement is funded in whole or in part by funds appropriated by Congress for "biological research activity." Paragraph (b) applies to all Agreements.

(a) Funds provided for the biological research activity in USGS appropriations may not be used to conduct surveys on private property, unless specifically authorized in writing by the property owner.

(1) Accordingly, the Recipient shall not enter non-Federal real property for the purpose of collecting information regarding the property, unless the owner of the property has –

- consented in writing to the entry;
- been provided notice of that entry; and
- been notified that any raw data collected from the property must be made available at no costs, if requested by the land owner.

(2) In this provision, the term “Recipient” includes any person that is an officer, employee, or agent of the Recipient, including a person acting pursuant to a contract or sub-agreement.

(b) The Recipient shall comply with applicable State, local, and Tribal government laws, including laws relating to private property rights.

No Endorsement

Paragraph (b) applies to all Agreements. The remainder of this section applies only if:

- (1) the principal purpose of this Agreement is a partnership where the Recipient contributes resources to promote USGS programs or publicize USGS activities, assists in fundraising, or provides assistance to the USGS; and*
- (2) this Agreement authorizes joint dissemination of information and promotion of activities being supported; and*
- (3) the Recipient is not a State government, a local government, or a Federally-recognized Indian tribal government.*

(a) Recipient shall not publicize or otherwise circulate, promotional material (such as advertisements, sales brochures, press releases, speeches, still and motion pictures, articles, manuscripts or other publications) which states or implies governmental, Departmental, bureau, or government employee endorsement of a product, service, or position which the recipient represents. No release of information relating to this award may state or imply that the Government approves of the recipient's work products, or considers the recipient's work product to be superior to other products or services.

(b) All information submitted for publication or other public releases of information regarding this project shall carry the following disclaimer:

The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government.

(c) Recipient must obtain prior Government approval for any public information releases concerning this award which refer to the Department of the Interior or any bureau or employee (by name or title). The specific text, layout photographs, etc. of the proposed release must be submitted with the request for approval.

(d) A recipient further agrees to include this provision in a subaward to any subrecipient, except for a subaward to a State government, a local government, or to a Federally-recognized Indian tribal government.

Access to Research Data

(a) By regulation (43 CFR 12.936), recipients that are institutions of higher education, hospitals, or non-profit organizations are required to release research data first produced in a project supported in whole or in part with Federal funds that are cited publicly and officially by a Federal agency in support of an action that has the force and effect of law (e.g., regulations and administrative orders). “Research data” is defined as the recorded factual material commonly accepted in the scientific community as necessary to validate research findings. It does not include preliminary analyses; drafts of scientific papers; plans for future research; peer reviews; communications with colleagues; physical objects (e.g., laboratory samples, audio or video tapes); trade secrets; commercial information; materials necessary to be held confidential by a researcher until publication in a peer-reviewed journal; information that is protected under the law (e.g., intellectual property); personnel and medical files and similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy; or information that could be used to identify a particular person in a research study.

(b) These requirements do not apply to commercial organizations or to research data produced by State or local governments. However, if a State or local governmental grantee contracts with an educational institution, hospital, or non-profit organization, and the contract results in covered research data, those data are subject to these disclosure requirements.

(c) Requests for the release of research data subject to this policy are required to be made to USGS, which will handle them as FOIA requests under 43 CFR 2.25. If the data are publicly available, the requestor will be directed to the public source. Otherwise, the USGS Contracting Officer/Grants Officer, in consultation with the affected recipient and the PI, will handle the request. This policy also provides for assessment of a reasonable fee to cover recipient costs as well as (separately) the USGS costs of responding.

Research Integrity

The Recipient shall adhere to the Federal Policy on Research Misconduct, Office of Science and Technology Policy, December 6, 2001, 65 Federal Register (FR) 76260, http://www.ostp.gov/html/001207_3.html. The Federal Policy on Research Misconduct outlines requirements for addressing allegations of research misconduct, including the investigation, adjudication, and appeal of allegations of research misconduct and the implementation of appropriate administrative actions.

The Recipient shall promptly notify the USGS Project Office, with courtesy copy to the Contracting Officer, when research misconduct that warrants an investigation pursuant to the Federal Policy on Research Misconduct is alleged.

Fiscal Integrity

The Recipient shall notify the USGS Contracting Officer of any significant problems relating to the administrative or financial aspects of this Agreement, such as misappropriation of Federal funds.

Program Income

(a) The Recipient will have no obligation to the Federal Government for program income earned from license fees and royalties for copyrighted material, in accordance with 43 CFR 12.924(h) or 43 CFR 12.65(e).

(b) If the Recipient is an educational institution or nonprofit research organization, any other program income will be added to funds committed to the project by the Federal awarding agency and Recipient and be used to further eligible project or program objectives, as described in 43 CFR 12.924(b)(1).

(c) For all other types of recipients, any other program income will be deducted from total allowable costs to determine the net allowable costs before calculating the Government's share of reimbursable costs, as provided in 43 CFR 12.65(g)(1) or 43 CFR 12.924(b)(3).

Trafficking in Persons

In accordance with 22 U.S.C. §7104(g), the following provision is included:

(a) Provisions applicable to a Recipient that is a private entity.

1. The Recipient, its employees, Subrecipients under this Agreement, and Subrecipients' employees may not--

i. Engage in severe forms of trafficking in persons during the period of time that this Agreement is in effect;

ii. Procure a commercial sex act during the period of time that this Agreement is in effect; or

iii. Use forced labor in the performance of this Agreement or subawards under this Agreement.

2. The USGS may unilaterally terminate this Agreement, without penalty, if the Recipient or a Subrecipient that is a private entity --

i. Is determined to have violated a prohibition in paragraph (a)(1) of this provision;
or

ii. Has an employee who is determined by the Contracting Officer to have violated a prohibition in paragraph (a)(1) of this provision through conduct that is either--

A. Associated with performance under this Agreement; or

B. Imputed to the Recipient or the Subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 CFR part 180, "OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," as implemented at 43 CFR Part 42.

(b) Provision applicable to a Recipient other than a private entity. The USGS may unilaterally terminate this Agreement, without penalty, if a Subrecipient that is a private entity--

1. Is determined to have violated an applicable prohibition in paragraph (a)(1) of this provision; or

2. Has an employee who is determined by the Contracting Officer to have violated an applicable prohibition in paragraph (a)(1) of this provision through conduct that is either--

i. Associated with performance under this Agreement; or

ii. Imputed to the Subrecipient using the standards and due process for imputing the conduct of an individual to an organization that are provided in 2 CFR part 180, "OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Nonprocurement)," as implemented at 43 CFR Part 42.

(c) Provisions applicable to any Recipient.

1. The Recipient must inform the Contracting Officer immediately of any information received from any source alleging a violation of a prohibition in paragraph (a)(1) of this provision.

2. The USGS' right to unilaterally terminate this Agreement, described in paragraphs (a)(2) and (b) of this provision:

i. Implements section 106(g) of the Trafficking Victims Protection Act of 2000 (TVPA), as amended (22 U.S.C. §7104(g)), and

ii. Is in addition to all other remedies for noncompliance that are available to the USGS under this Agreement.

3. The Recipient must include the requirements of paragraph (a)(1) of this provision in any subaward made to a private entity.

(d) Definitions. For the purposes of this provision:

1. “Employee” means either:
 - i. An individual employed by the Recipient or a Subrecipient who is engaged in the performance of the project or program described in this Agreement; or
 - ii. Another person engaged in the performance of the project or program described in this Agreement and not compensated by the Recipient including, but not limited to, a volunteer or individual whose services are contributed by a third party as an in-kind contribution toward cost sharing or matching requirements.
2. “Forced labor” means labor obtained by any of the following methods: the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purpose of subjection to involuntary servitude, peonage, debt bondage, or slavery.
3. “Private entity”:
 - i. Means any entity other than a State, local government, Indian tribe, or foreign public entity, as those terms are defined in 2 CFR 175.25.
 - ii. Includes:
 - A. A nonprofit organization, including any nonprofit institution of higher education, hospital, or tribal organization other than one included in the definition of Indian tribe at 2 CFR 175.25(b).
 - B. A for-profit organization.
4. “Severe forms of trafficking in persons,” “commercial sex act,” and “coercion” have the meanings given at section 103 of the TVPA, as amended (22 U.S.C. §7102).

ARTICLE IX: ORDER OF PRECEDENCE

In the event of any inconsistency within this Agreement, the following order of precedence shall be followed:

1. The cover page.
2. Articles I through IX of this Agreement.
3. The Recipient’s assurances (SF 424B and SF LLL, if applicable), incorporated herein by reference.
4. Other documents incorporated by reference, if any.