

**AMENDMENT NUMBER FOUR
TO
AGREEMENT
BY AND BETWEEN
COUNTY OF LOS ANGELES
AND
DEWBERRY & DAVIS SERVICES OPERATIONS, INC.
FOR
INDEPENDENT QUALITY ASSURANCE/QUALITY CONTROL
AND DISTRIBUTION SERVICES FOR
DIGITAL ORTHO IMAGERY, DIGITAL TERRAIN MODELS
AND OBLIQUE AERIAL DIGITAL IMAGERY**

This Amendment Number Four is entered this ____ day of _____, 2013 by and between the County of Los Angeles, a political subdivision of the State of California (hereinafter "County"), and Dewberry & Davis Services Operations, Inc., a Delaware corporation ("hereinafter Contractor") and amends that certain Agreement for Independent Quality Assurance/Quality Control and Distribution Services for Digital Ortho Imagery, Digital Terrain Models and Oblique Aerial Digital Imagery, dated March 30, 2006, as amended by any Change Notices and Change Orders thereto, Amendments Number One through Three dated August 15, 2006, Amendment Number Two dated March 26, 2008, Amendment Number Three dated March 8, 2011 and this Amendment Number Four (hereinafter, as amended, "Agreement").

WHEREAS, County and Contractor entered into the Agreement, which was approved by County's Board of Supervisors and executed by the County's Chief Information Officer on March 30, 2006; and

WHEREAS, the Agreement was amended by Amendment Number One, which was approved by County's Board of Supervisors on August 15, 2006; and

WHEREAS, the Agreement was further amended by Amendment Number Two, which was approved by County's Board of Supervisors on March 26, 2008; and

WHEREAS, the Agreement was further amended by Amendment Number Three, which was approved by County's Board of Supervisors on March 8, 2011; and

WHEREAS, the parties now wish to further amend the Agreement to, among other things, extend its term in order to allow for the continuation of the services being performed under the Agreement and to increase correspondingly the Maximum Contract Sum under the Agreement.

NOW, THEREFORE, in consideration of the foregoing, and pursuant to Paragraph 6 (Changes to Agreement) of the Agreement, Contractor and County hereby agree to amend the Agreement as follows:

1. The Agreement is hereby incorporated by reference, and all of its terms and conditions, including capitalized terms defined therein, shall be given full force and effect as if fully set forth herein.
2. The Term of the Agreement is extended until and through three (3) years from the effective date of this Amendment Number Four.
3. As a result of changes to the lead membership of Contractor's Project Team, Paragraph 4.3.4 of the Agreement is deleted in its entirety and replaced with revised Paragraph 4.3.4 to read as follows:

- 1.3.63 The following persons have been identified by Contractor as the lead members of its Project Team and are hereby approved as of the Effective Date by County in the following roles:

<u>Name</u>	<u>Position</u>
Phillip Thiel	Project Director
David Maune	Project Manager
Josh Novac	Deputy Project Manager
Steven Wood	Project Surveyor CA PLS
Jennifer Novac	Orthophoto QA/QC Team Leader
Dan Bubser	DTM QA/QC Team Leader
Andrew Peters	Contour QA/QC Team Leader
Josh Novac	Product Generation Team Leader”

4. Paragraph 8.2 (Maximum Contract Sum) of the Agreement is hereby deleted in its entirety and replaced with revised Paragraph 8.2 (Maximum Contract Sum) to read as follows:

8.2 MAXIMUM CONTRACT SUM. The “Maximum Contract Sum” under this Agreement shall be the total monetary amount payable by County to Contractor for supplying all the tasks, subtasks, deliverables, goods, services, optional work and other work specified under this Agreement. All work completed by Contractor must be approved in writing by County. If County does not approve work in writing, no payment shall be due to Contractor for that work. Notwithstanding such limitation of funds, Contractor shall satisfactorily perform and complete all work required of Contractor under this Agreement.

The Maximum Contract Sum for this Agreement, including all applicable taxes, authorized by County hereunder, shall not exceed Two Million Two Hundred Thousand Four Hundred Sixty Eight (\$2,200,468), which includes Five Hundred Ninety Three Thousand Four Hundred Forty Five (\$593,445) for the required deliverables and Six Thousand Five Hundred Fifty Five (\$6,555) for optional work, as further specified in Exhibit C (Price and Schedule of Payments), unless modified by a duly authorized Amendment under the provisions of Paragraph 6 (Change Notices and Amendments).

5. Paragraph 12 (Notices) of the Agreement is hereby deleted in its entirety and replaced with revised Paragraph 12 (Notices) to read as follows:

12. NOTICES. All notices or demands required or permitted to be given or made under this Agreement, unless otherwise specified, shall be in writing and shall be addressed to the parties at the following addresses and delivered: (1) by hand with signed receipt, (2) by first-class registered or certified mail, postage prepaid, (3) by facsimile or electronic mail transmission, or (4) by overnight commercial carrier, with signed receipt. Notices is deemed given at the time of signed receipt in the case of hand delivery, three (3) days after deposit in the United States mail as set forth above, on the date of facsimile or electronic mail transmission if followed by timely confirmation mailing, or on the date of signature

receipt by the receiving party of any overnight commercial carrier delivery. Addresses may be changed by either party giving ten (10) days prior notice in accordance with the procedures set forth above, to the other party.

To County:

Chief Information Office
County of Los Angeles
350 S Figueroa Street, Suite 188
Los Angeles, CA 90071
Attention: Mark Greninger, GIO
Facsimile: (213) 633-4732
E-mail: mgreninger@cio.lacounty.gov

with a copy to:

Office of the County Counsel
County of Los Angeles
500 West Temple Street, 6th Floor
Los Angeles, CA 90012
Attention: Victoria Mansourian, Principal Deputy County Counsel
Facsimile: (213) 633-1915
E-mail: vmansourian@counsel.lacounty.gov

To Contractor:

Dewberry & Davis Services Operations, Inc.
8401 Arlington Boulevard
Fairfax, Virginia 22031-4666
Attention: Phil Thiel
Facsimile: (703) 849-0182
E-Mail: pthiel@dewberry.com

County Project Director shall have the authority to issue all notices or demands, which are required or permitted by County under this Agreement.

6. Paragraph 13 (Indemnification and Insurance) of Exhibit A (Additional Terms and Conditions) is deleted in its entirety and replaced with revised Paragraph 13 (Indemnification and Insurance) to read as follows:

13. INDEMNIFICATION AND INSURANCE.

13.1 INDEMNIFICATION. Contractor shall indemnify, defend and hold harmless County, its Special Districts, elected and appointed officers, employees, agents and volunteers (“County Indemnitees”) from and against any and all liability, including but not limited to demands, claims, actions, fees, costs and expenses (including attorney and expert witness fees), arising from and/or relating to this Agreement, except for such loss or damage arising from the sole negligence or willful misconduct of the County Indemnitees. Any legal defense pursuant to Contractor's indemnification obligations under this Paragraph 13 shall be conducted by Contractor and performed by counsel selected by Contractor.

13.2 INSURANCE.

13.2.1 General Insurance Requirements. Without limiting Contractor’s indemnification of County, and in the performance of this Agreement and until all of its obligations pursuant

to this Agreement have been met, Contractor shall provide and maintain at its own expense insurance coverage satisfying the requirements specified in this Paragraph 13. These minimum insurance coverage terms, types and limits (hereinafter "Required Insurance") also are in addition to and separate from any other contractual obligation imposed upon Contractor pursuant to this Agreement. County in no way warrants that the Required Insurance is sufficient to protect Contractor for liabilities which may arise from or relate to this Agreement.

13.2.1.1 Evidence of Coverage and Notice to County.

1. Certificate(s) of insurance coverage (Certificate) satisfactory to County, and a copy of an Additional Insured endorsement confirming County and its Agents (defined below) has been given Insured status under the Contractor's General Liability policy, shall be delivered to County at the address shown below and provided prior to commencing services under this Agreement.
2. Renewal Certificates shall be provided to County not less than ten (10) days after renewal of Contractor's policy. County reserves the right to obtain copies of relevant sections of any required Contractor and/or subcontractor insurance policies at any time.
3. Certificates shall identify all Required Insurance coverage types and limits specified herein, reference this Agreement by name or number, and be signed by an authorized representative of the insurer(s). The Insured party named on the Certificate shall match the name of Contractor identified as the contracting party in this Agreement. Certificates shall provide the full name of each insurer providing coverage, its NAIC (National Association of Insurance Commissioners) identification number, its financial rating, the amounts of any policy deductibles or self-insured retentions exceeding fifty thousand (\$50,000.00) dollars, and list any County required endorsement forms.
4. Neither County's failure to obtain, nor County's receipt of, or failure to object to a non-complying insurance certificate or endorsement, or any other insurance documentation or information provided by the Contractor, its insurance broker(s) and/or insurer(s), shall be construed as a waiver of any of the Required Insurance provisions.

Certificates and copies of any required endorsements shall be sent to:

Chief Information Office
County of Los Angeles
350 S Figueroa Street, Suite 188
Los Angeles, CA 90071
Attention: Mark Greninger, GIO
Facsimile: (213) 633-4732
E-mail: mgreninger@cio.lacounty.gov

- 13.2.1.2 Additional Insured Status and Scope of Coverage. The County of Los Angeles, its Special Districts, Elected Officials, Officers, Agents, and Employees and Volunteers (collectively County and its Agents) shall be provided additional insured status under Contractor's General Liability policy with respect to liability arising out of Contractor's ongoing and completed operations performed on behalf of the County. County and its Agents additional insured status shall apply with respect to liability and defense of suits arising out of

Contractor's acts or omissions, whether such liability is attributable to Contractor or to County. The full policy limits and scope of protection also shall apply to County and its Agents as an additional insured, even if they exceed the County's minimum Required Insurance specifications herein. Use of an automatic additional insured endorsement form is acceptable providing it satisfies the Required Insurance provisions herein.

- 13.2.1.3 Cancellation of or Changes in Insurance. Contractor shall provide County, or Contractor's insurance policies shall contain, a provision that County shall receive written notice of cancellation or any substantive change in Required Insurance, including insurer, limits of coverage, term of coverage or policy period. The written notice shall be provided to County not less than ten (10) days in advance of cancellation for non-payment of premium and thirty (30) days in advance of any other cancellation or substantive policy change. Failure to provide written notice of cancellation or any substantive change in Required Insurance may constitute a material breach of this Agreement, in the sole discretion of County, upon which County may suspend or terminate this Agreement.
- 13.2.1.4 Insurer Financial Rating. Coverage shall be placed with insurers acceptable to the County with A.M. Best ratings of not less than A:VII, unless otherwise approved by County.
- 13.2.1.5 Contractor's Insurance Shall Be Primary. Contractor's insurance policies with respect to any claims related to this Agreement shall be primary with respect to all sources of coverage available to Contractor. Any County maintained insurance or self-insurance coverage shall be in excess of and not contribute to any Contractor coverage.
- 13.2.1.6 Subcontractor Insurance Coverage Requirements. Contractor shall include all subcontractors as insureds under Contractor's own policies, or shall provide County with each subcontractor's separate evidence of insurance coverage. Contractor shall be responsible for verifying each subcontractor complies with the Required Insurance provisions herein, and shall require that each subcontractor name the County and Contractor as additional insureds on the subcontractor's General Liability policy. Contractor shall obtain County's prior review and approval of any subcontractor request for modification of the Required Insurance.
- 13.2.1.7 Deductibles and Self-Insured Retentions (SIRs). Contractor's policies shall not obligate County to pay any portion of any Contractor deductible or SIR. County retains the right to require Contractor to reduce policy deductibles and SIRs as respects County.
- 13.2.1.8 Claims Made Coverage. If any part of the Required Insurance is written on a claims made basis, any policy retroactive date shall precede the effective date of this Agreement. Contractor understands and agrees it shall maintain such coverage for a period of not less than three (3) years following Agreement expiration, termination or cancellation.
- 13.2.1.9 Application of Excess Liability Coverage. Contractor may use a combination of primary, and excess insurance policies which provide coverage as broad as ("follow form" over) the underlying primary policies, to satisfy the Required Insurance provisions.
- 13.2.1.10 Separation of Insureds. All liability policies shall provide cross-liability coverage as would be afforded by the standard ISO (Insurance Services Office, Inc.) separation of insureds provision with no insured versus insured exclusions or limitations.
- 13.2.1.11 Alternative Risk Financing Programs. County reserves the right to review, and then approve, Contractor use of self-insurance, risk retention groups, risk purchasing groups, pooling arrangements and captive insurance to satisfy the Required Insurance provisions. County and its Agents shall be designated as an Additional covered Party under any

approved program.

13.2.1.12 County Review and Approval of Insurance Requirements. The County reserves the right to review and adjust the required Insurance provisions, conditioned upon County's determination of changes in risk exposures.

13.2.2 Insurance Coverage.

13.2.2.1 Commercial General Liability Insurance. Providing scope of coverage equivalent to ISO policy form CG 00 01, naming County and its Agents as an additional insured, with limits of not less than:

General Aggregate	\$2 million
Products/Completed Operations Aggregate	\$1 million
Personal and Advertising Injury	\$1 million
Each Occurrence	\$1 million

13.2.2.2 Automobile Liability Insurance. Providing scope of coverage equivalent to ISO policy form CA 00 01 with limits of not less than \$1 million for bodily injury and property damage, in combined or equivalent split limits, for each single accident. Insurance shall cover liability arising out of Contractor's use of autos pursuant to this Agreement, including owned, leased, hired, and/or non-owned autos, as each may be applicable.

13.2.2.3 Workers' Compensation and Employers' Insurance. Insurance or qualified self-insurance satisfying statutory requirements, which includes Employers' Liability coverage with limits of not less than \$1 million per accident. If Contractor will provide leased employees, or, is an employee leasing or temporary staffing firm or a professional employer organization (PEO), coverage also shall include an Alternate Employer Endorsement (providing scope of coverage equivalent to ISO policy form WC 00 03 01 A) naming County as the Alternate Employer, and the endorsement form shall be modified to provide that County will receive not less than thirty (30) days advance written notice of cancellation of this coverage provision. If applicable to Contractor's operations, coverage also shall be arranged to satisfy the requirements of any federal workers or workmen's compensation law or any federal occupational disease law.

13.2.2.4 Professional Liability/Errors and Omissions. Insurance covering Contractor's liability arising from or related to this Agreement, with limits of not less than \$1 million per claim and \$3 million aggregate. Further, Contractor understands and agrees it shall maintain such coverage for a period of not less than three (3) years following this Agreement's expiration, termination or cancellation.

13.2.3 Failure to Maintain Coverage. Contractor's failure to maintain or to provide acceptable evidence that it maintains the Required Insurance shall constitute a material breach of the Agreement, upon which County immediately may withhold payments due to Contractor and/or suspend or terminate this Agreement. County, at its sole discretion, may obtain damages from Contractor resulting from such breach. Alternatively, County may purchase the required insurance coverage and, without further notice to Contractor, deduct from sums due to Contractor any premium costs advanced by County for such insurance.

7. Paragraph 56 (Non-Exclusivity) is added to Exhibit A (Additional Terms and Conditions) of the Agreement to read as follows:
 56. **NON-EXCLUSIVITY.** Nothing herein is intended nor shall be construed as creating any exclusive arrangement with Contractor. This Agreement shall not restrict County from acquiring similar, equal or like goods and/or services from other entities or sources.
8. Paragraph 57 (Defaulted Property Tax Reduction Program) is added to Exhibit A (Additional Terms and Conditions) of the Agreement to read as follows:
 57. **DEFAULTED PROPERTY TAX REDUCTION PROGRAM.**
 - 57.1 CONTRACTOR’S WARRANTY OF COMPLIANCE WITH COUNTY’S DEFAULTED PROPERTY TAX REDUCTION PROGRAM. Contractor acknowledges that County has established a goal of ensuring that all individuals and businesses who benefit financially from County through contract are current in paying their property tax obligations (secured and unsecured roll) in order to mitigate the economic burden otherwise imposed upon County and its taxpayers.

Unless Contractor qualifies for an exemption or exclusion, Contractor warrants and certifies that to the best of its knowledge it is now in compliance, and during the term of this Agreement will maintain compliance, with Los Angeles County Code Chapter 2.206.
 - 57.2 TERMINATION FOR BREACH OF WARRANTY TO MAINTAIN COMPLIANCE WITH COUNTY’S DEFAULTED PROPERTY TAX REDUCTION PROGRAM. Failure of Contractor to maintain compliance with the requirements set forth in Paragraph 57.2 (Contractor’s Warranty of Compliance with County’s Defaulted Property Tax Reduction Program) shall constitute default under this Agreement. Without limiting the rights and remedies available to County under any other provision of this Agreement, failure of Contractor to cure such default within ten (10) days of notice shall be grounds upon which County may terminate this Agreement and/or pursue debarment of Contractor pursuant to County Code Chapter 2.206.
9. Exhibit B (Statement of Work) of the Agreement is deleted in its entirety and replaced with revised Exhibit B (Statement of Work), attached hereto as Attachment 1 and incorporated herein by reference.
10. Exhibit C (Price and Schedule of Payments) of the Agreement is deleted in its entirety and replaced with revised Exhibit C (Price and Schedule of Payments), attached hereto as Attachment 2 and incorporated herein by reference.
11. Except as provided in this Amendment Number Four, all other terms and conditions of the Agreement shall remain unchanged and in full force and effect.

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IN WITNESS WHEREOF, Contractor has executed this Amendment Number or caused it to be duly executed, and the County of Los Angeles, by order of its Board of Supervisors has caused this Amendment Number Four to be executed on its behalf by the Chairman of said Board and attested by the Executive Officer-Clerk of the Board of Supervisors thereof, the day and year first above written.

**CONTRACTOR: Dewberry & Davis Services
Operations, Inc.**

By: _____
Signature

Print Name

Title

ATTEST:

COUNTY OF LOS ANGELES

SACHI A. HAMAI
Executive Officer-Clerk
of the Board of Supervisors

By: _____
Chairman, Board of Supervisors

By: _____
Deputy

APPROVED AS TO FORM:

JOHN F. KRATTLI
County Counsel

By _____
VICTORIA MANSOURIAN
Principal Deputy County Counsel

EXHIBIT B — STATEMENT OF WORK

All deliverables shall be in digital media format such as .pdf file format.

1. Major QA/QC Management Tasks

Contractor shall develop a *Quality Plan* that outlines the project, and delivered during a kick-off meeting for LAR-IAC.

Task 1a: Develop a *Quality Plan* for the Los Angeles Region Imagery Acquisition Consortium (LAR-IAC) Program, including Acceptance Criteria for: digital orthophotos at two image resolutions (4" and 1"); aerial triangulation (AT); digital terrain model (DTM) suitable for orthorectification for "spot updates" only (areas of significant grading).

Task 1b: Attend a QA/QC kick-off meeting as well as one additional meeting in Los Angeles or via teleconference to be scheduled by the LAR-IAC Project Manager, and document key activities and decisions.

Task 1c: Develop a LAR-IAC QA/QC project tracking spreadsheet that shows the status of all Pictometry International Corp. and/or The Sanborn Map Company, Inc. (Pictometry/Sanborn) product tiles by delivery area: (a) delivered to Contractor, (b) reviewed by Contractor with edit calls provided to Pictometry/Sanborn, (c) corrected by Pictometry/Sanborn and delivered to Dewberry & Davis Services Operations, Inc. (Dewberry) and (d) delivered by Contractor to LAR-IAC and/or its stakeholders and communities. Incorporate the project tracking spreadsheet into Weekly Progress Reports that report on all significant activities each week.

Schedule: The draft *Quality Plan*, incorporating feedback and guidance received during the QA/QC kick-off meeting will be submitted by Contractor to LAR-IAC within two weeks of the QA/QC kick-off meeting, and it will be updated continuously thereafter as new guidance is received from LAR-IAC. Attend meetings in Los Angeles and/or telecons as scheduled by the LAR-IAC Project Manager and document key activities/decisions in a report to the LAR-IAC Project Manager within one week thereafter. Establish the tracking spreadsheet as of the end of the first week in which products are received from Pictometry/Sanborn the image provider to be quality assured by Contractor; update weekly thereafter.

Deliverables:

Deliverable 1a: *Quality Plan for the Los Angeles Region Imagery Acquisition Consortium (LAR-IAC).*

Deliverable 1b: *Report that documents key activities and/or decisions made during meetings and telecons.*

Deliverable 1c: *Project tracking spreadsheet and weekly progress reports that document key activities for the prior week, including information that shows tiles received from Pictometry/Sanborn, QC'd by Contractor, corrected by Pictometry/Sanborn and submitted to Subcontractor, and delivered by Subcontractor to LAR-IAC.*

2. Aerial Triangulation (AT) Reports

Task 2: Prepare a report for each Pictometry/Sanborn AT block that documents control used by Pictometry/Sanborn, and results of AT adjustment statistics, compared with the AT Acceptance Criteria D1 through D8 documented in the *Quality Plan*.

Schedule: Submit individual AT reports to LAR-IAC within 30 days of receipt of all required AT documentation from Pictometry/Sanborn for each AT block as completed.

Deliverables:

Deliverable 2: *AT Report in for each AT block, signed and sealed by an ASPRS Certified Photogrammetrist.*

3. QA/QC of 4" Digital Orthophotos in Urban Areas (Project Area 1)

Task 3a: Using horizontal photo-identifiable QA/QC checkpoints from LAR-IAC (2006), LAR-IAC 2 (2008), and/or LAR-IAC 3 (2011), measure ground coordinates of these checkpoints on the 4" orthophoto tiles, and prepare Horizontal Accuracy Assessment Reports for each 4" AT block consistent with requirements of the National Standard for Spatial Data Accuracy (NSSDA) and Acceptance Criteria C3 and C4 of the *Quality Plan*. Each Horizontal Accuracy Assessment Report will be signed and sealed by an ASPRS Certified Photogrammetrist.

Task 3b: Review all 4" orthophoto tiles [using QC software selected by Contractor] and compare aesthetics of each 4" digital orthophoto GeoTIFF image with Acceptance Criteria A1 through A27, C1, C2, C5 and C6 (use Sanborn QC website if applicable). The aesthetic review should identify color and tone imbalance as well as radiometry, artifacts, smears, warping, distortions, seam lines, mosaicking, and processing errors using commonly accepted professional standards. Contractor will submit a QC report each week to Pictometry/Sanborn and LAR-IAC, including a Microsoft Word document with project information, geodatabase that shows the location of edit calls made, and an associated Excel file that lists edit calls by major edit call categories, using codes coordinated with Pictometry/Sanborn and LAR-IAC.

Task 3c: Perform completeness reviews of all 4" orthophoto tiles for countywide datasets and subsets to be used for each of the spatially-limited dataset (SLDS) areas. Contractor shall ensure proper geographic coverage, check file-naming convention, verify that there are no gaps or overlap, ensure that previously rejected tiles have been corrected by Pictometry/Sanborn and verify that all datasets are complete and include metadata.

Task 3d: Generate all 4" orthophoto products required for countywide and spatially-limited datasets.

Task 3e: Survey 160 QA/QC 3D checkpoints for use in testing and reporting the accuracy of the digital orthophotos and/or elevation datasets. Any QA/QC checkpoints generated for this project will be provided as a deliverable to the County and shall comply at a minimum with the following requirements:

1. QA/QC checkpoint acquisition shall be overseen and approved by a California Licensed Surveyor, who shall affix a signature and seal to approve all survey reports.
2. A total of 80 photo-identifiable 3D QA/QC checkpoints, plus 80 additional 3D QA/QC checkpoints suitable for testing LiDAR data, shall be surveyed consistent with Appendix C, Accuracy Testing and Reporting Guidelines, of the draft *ASPRS Accuracy Standards for Digital Geospatial Data*.
3. GPS Surveys shall use Continuously Operating Reference Stations (CORS) or other GPS base stations or high accuracy monuments that have been surveyed by GPS relative to a CORS station so as to provide network accuracy consistent with the National Spatial Reference System (NSRS). Surveys into forested areas may utilize conventional survey equipment (differential levels and/or Total Stations) to extend control from GPS points into vegetated areas where GPS signals may not be clear for direct GPS measurement.
4. All GPS surveys will follow procedures spelled out in NOAA Technical Memorandum NOS NGS-58, Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2 cm and 5 cm), or equivalent, so as to achieve ellipsoid height network accuracies of 5 cm at the 95% confidence level.
5. Vertical datum shall be NAVD88. Horizontal datum shall be NAD83. All QA/QC checkpoints will be tied directly to CORS or NSRS monuments that have been surveyed relative to a CORS station.
6. Units shall be U.S. Survey Feet.
7. All coordinates will conform to the California Coordinate System of 1983 Zone 5.

Schedule: For Task 3a, the Horizontal Accuracy Assessment Report for each 4” AT block will be submitted to LAR-IAC within 30 days of receipt of 4” orthophoto tiles covering all such QA/QC checkpoints for each AT block to be evaluated. For Task 3b, QC reports for aesthetics will be submitted weekly, but never later than 30 days after receipt of 4” orthophotos from Pictometry/Sanborn. For Task 3c, document individual 4” orthophoto datasets as complete in Weekly Progress Reports. For Task 3d, document individual 4” orthophoto datasets as generated and ready for delivery in Weekly Progress Reports. For Task 3e, survey data and reports will be submitted by May 31, 2014.

Deliverables:

Deliverable 3a: *Horizontal Accuracy Assessment Report for each 4” AT block, signed and sealed by an ASPRS Certified Photogrammetrist.*

Deliverable 3b: *Weekly QC report as described above.*

Deliverable 3c and 3d: *Paragraphs and graphics in each Weekly Progress Report that report on the status of tiles that are complete and received by Subcontractor from Pictometry/Sanborn, and datasets that have been generated and ready for delivery.*

Deliverable 3e: *Contractor shall provide the following Deliverables in accordance with Task 3e:*

- 1. Survey Report of all QA/QC checkpoints, signed and sealed by a California Licensed Surveyor, to include 3D survey coordinates and images of each checkpoint suitable for verification of photo-identifiability for horizontal checkpoints and land cover category for vertical checkpoints.*
- 2. ArcGIS shapefiles with QA/QC checkpoints as points (with 3D coordinates as attributes).*
- 3. GPS observation data in RINEX format.*
- 4. ASCII comma-delimited file, Point Number, Northing, Easting, orthometric height, description*
- 5. ASCII comma-delimited file, Point Number, longitude, latitude , ellipsoid height, orthometric height, description*

4. QA/QC of 1' Digital Orthophotos in National Forest Areas (Project Area 2)

The 1' orthophoto tiles in national forest areas will not be reviewed by Contractor for horizontal accuracy.

Task 4a: Review all 1' orthophoto tiles [using QC software selected by Contractor] and compare aesthetics of each 1' digital orthophoto GeoTIFF image with Acceptance Criteria A1 through A27, B1, B2, B5 and C6. Submit a QC report each week to Pictometry/Sanborn and LAR-IAC, including a Microsoft Word document with project information, point shapefiles that show the location of edit calls made, and an associated Excel file that lists edit calls by major edit call categories, using codes coordinated with Pictometry/Sanborn and LAR-IAC.

Task 4b: Perform completeness reviews of all 1' orthophoto tiles in national forest areas for countywide datasets and subsets to be used for each of the spatially-limited areas. Ensure that there are no gaps or overlaps and that all datasets are complete and include metadata.

Task 4c: Generate all 1' orthophoto products in national forest areas required for countywide and spatially-limited datasets.

Schedule: For Task 4a, QC reports for aesthetics will be submitted weekly, but never later than 30 days after receipt of 1' orthophotos from Pictometry/Sanborn. For Task 4b, document individual 1' orthophoto datasets as complete in Weekly Progress Reports. For Task 4c, document individual 1' orthophoto datasets as generated and ready for delivery in Weekly Progress Reports.

Deliverables:

Deliverable 4a: *Weekly QC report as described above.*

Deliverable 4b and 4c: *Paragraphs and graphics in each Weekly Progress Report that report on the status of tiles that are complete and received by Subcontractor from Pictometry/Sanborn, and datasets that have been generated and ready for delivery.*

5. QA/QC of Photogrammetric Breaklines and LiDAR DTMs in Urban Areas (Project Area 1)

Participants will identify areas of major development for “spot updates”. The County will provide DTM of the first LAR-IAC delivery for these areas.

Task 5a: Perform completeness reviews of all updated urban area DTM tiles. Ensure that there are no gaps and that all datasets are complete and include metadata.

Task 5b: Generate all updated DTM products required for countywide and spatially-limited datasets.

Schedule: For Task 5a, document individual DTM tiles as complete in Weekly Progress Reports. For Task 5b, document individual DTM datasets as generated and ready for delivery in Weekly Progress Reports.

Deliverables:

Deliverables 5a and 5b: *Paragraphs and graphics in each Weekly Progress Report that reports the status of updated DTM tiles that are complete and received by Subcontractor from Pictometry/Sanborn, and datasets that have been generated and ready for delivery.*

6. QA/QC of Oblique Aerial Digital Images (OADI) from Pictometry

The Contractor shall only be responsible for completeness and horizontal and vertical accuracy reporting. No aesthetic QC is to be done for the Oblique Imagery.

Task 6a: Evaluate OADI for complete coverage.

Task 6b: Evaluate horizontal accuracy of OADI imagery.

Task 6c: Evaluate vertical accuracy of OADI imagery.

Task 6d: Generate OADI deliverables.

Schedule: For Task 6a, 6b, and 6c, document tasks as complete in Weekly Progress Reports. For Task 6d, document OADI datasets as generated and ready for delivery in Weekly Progress Reports.

Deliverables:

Deliverables 6a, 6b and 6c: *Paragraphs and graphics in each Weekly Progress Report that reports the status of tasks completed.*

Deliverables 6d: *Paragraphs and graphics in each Weekly Progress Report that documents OADI datasets that have been generated and ready for delivery.*

7. Full Delivery of Countywide and Spatially-Limited Datasets (SLDS)

The Contractor shall be responsible for the delivery of QA/QC accepted products from Pictometry/Sanborn (digital orthophotos, DTMs, and contours) to the County as well as to LAR-IAC participants.

Task 7a: Full delivery to County & SLDS participants. Deliver a countywide and an estimated 40 spatially-limited datasets (SLDS) of all products from Pictometry/Sanborn using transfer methods determined by LAR-IAC. SLDS datasets shall be defined by shapefiles provided by LAR-IAC to define each spatially-limited area to include buffers. “Full delivery” is all data products for the entire County (the entire “data” for the project). All other entities will receive data based on a 1 or 2 mile buffer (based on their jurisdiction and appropriate grid system. These are called “spatially limited dataset participants”. A shapefile for the delivery area for each LAR-IAC Participant will be provided. The average size of the imagery product deliverables for an individual city will be approximately 20 GB (but this does vary widely).

Task 7b: Store all LAR-IAC data for one year. The Contractor shall be responsible for storing the LAR-IAC product deliverables for a period of at least one year after all product deliverables for LAR-IAC’s initial delivery.

Task 7c: Purchase 66 assorted hard drives for data delivery to County & SLDS participants.

Schedule: All deliverables will be provided within 30 days of receipt of all final datasets from Pictometry/Sanborn.

Deliverables:

Deliverable 7a: *Full delivery of the complete countywide datasets of all products to LAR-IAC using transfer methods determined by LAR-IAC.*

Deliverable 7b: *One year storage of all LAR-IAC data.*

Deliverable 7c: *Full delivery of all Countywide and SLDS datasets, using hard drives purchased by Dewberry..*

8. Additional Data Products

Task 8a: Create a complete, seamless, countywide dataset with 1’ pixels, resampled from 4” pixels, delivered in the 4-inch tile scheme.

Task 8b: Create a JPEG2000 dataset of all tiles (1' and 4" resolution) at a 20:1 compression ratio.

Task 8c: Create 40 seamless SDE export format files, file geodatabases (FGDB), or Image Catalogs, for each SLDS (based on shapefiles provided by LAR-IAC), as determined by each SLDS.

Schedule: All deliverables for additional data products will be provided within 30 days of receipt of all final datasets from Pictometry/Sanborn.

Deliverables:

Deliverable 8a: *Provide resampled set of imagery tiles from 4" pixels to 1' pixels (keep in GeoTIFF format).*

Deliverable 8b: *Provide JPEG2000 set of imagery tiles (1' and 4" resolutions).*

Deliverable 8d: *Provide 40 SDE, FGDB, or Image Catalog datasets for SLDS participants.*

9. Mosaic Generation

Generate ECW mosaics for color products.

Task 9a: Generate 68 countywide ECW mosaics at a 20:1 compression ratio.

Task 9b: Generate 40 ECW mosaics for SLDS participants at a 50:1 compression ratio.

Schedule: All deliverables will be provided within 30 days of receipt of all final datasets from Pictometry/Sanborn.

Deliverables:

Deliverable 9a: *Generate and deliver 68 countywide ECW mosaics.*

Deliverable 9b: *Generate and deliver 40 ECW mosaics for SLDS.*

10. Production Management

The Contractor's Project Manager will assume some project management duties for project related issues arising during the delivery and QA/QC process. This mechanism could serve as a way to ensure cooperation between all vendors (Pictometry/Sanborn, Dewberry, and LAR-IAC) and also will help identify potential problems before they are bigger problems that lead to project delays. More precise guidelines and scope of this effort to be detailed in the LAR-IAC Quality Plan (deliverable from the Contractor) after all vendors selected for LAR-IAC.

Task 10: Because the aerial triangulation and production of digital orthophotos have not previously been produced to rigorous standards when using Pictometry imagery, Contractor will provide on-call technical support as required by LAR-IAC for management of digital

orthophotos produced from Pictometry imagery, development of acceptance criteria, and resolution of technical issues.

Schedule: Technical support will be on-call and responsive to LAR-IAC requirements.

Deliverables: *Deliverables may be in the form of emailed recommendations or could be verbal as the result of teleconferences, subsequently formalized by written documentation.*

11. QA/QC of Digital Terrain Data

Task 11a: Receive Digital Terrain Data (LIDAR .las point cloud or DTM) from County's product vendor, and perform quantitative, qualitative, and completeness reviews of all data to ensure consistency with requirements of USGS LIDAR Base Specification V1.0, 2012 and all requirements in Exhibit A.4 (Statement of Work – Digital Terrain Data) of the County's Agreement with Pictometry; and prepare a Vertical Accuracy Assessment Report for Los Angeles County. The Vertical Accuracy Assessment Report will be signed and sealed by an ASPRS Certified Photogrammetrist.

Task 11b: Review photogrammetric breaklines from County's vendor and ensure conformance with all requirements in Exhibit A.4 (Statement of Work – Digital Terrain Data) of the County's Agreement with Pictometry.

Task 11c: Review raster Digital Elevation Model (DEM) from County's vendor and ensure conformance with all requirements in Exhibit A.4 (Statement of Work – Digital Terrain Data) of the County's Agreement with Pictometry.

Task 11d: Review Contours from County's vendor and ensure conformance with all requirements in Exhibit A.4 (Statement of Work – Digital Terrain Data) of the County's Agreement with Pictometry.

Task 11e: Provide project oversight and limited project management duties for project related issues arising during the development of the Digital Terrain Data delivery and QA/QC process. This will serve as a way to ensure cooperation between all vendors (Pictometry/Sanborn, Dewberry, and LAR-IAC) and also will help identify potential problems before they are bigger problems that lead to project delays. More precise guidelines and scope of this effort to be detailed in the LAR-IAC Quality Plan (deliverable from the Contractor) after all vendors selected for LAR-IAC.

Deliverables:

Deliverable 11a: *Single Vertical Accuracy Assessment Report for the Los Angeles County urban area DTM, signed and sealed by an ASPRS Certified Photogrammetrist.*

Deliverable 11b: *Paragraphs, documentation, and graphics showing edit call locations and statistics in each Weekly Progress Reports that report on the status of breaklines that are complete and passed QA/QC.*

Deliverable 11c: *Paragraphs, documentation, and graphics showing edit call locations and statistics in each Weekly Progress Reports that report on the status of DEM tiles that are complete and passed QA/QC.*

Deliverable 11d: *Paragraphs, documentation, and graphics showing contour edit call locations and statistics in each Weekly Progress Reports that report on the status of contours that are complete and passed QA/QC.*

Deliverable 11e: *Deliverables may be in the form of emailed recommendations or could be verbal as the result of teleconferences, subsequently formalized by written documentation.*

12. Optional Work

Task 12: As necessary and required by LAR-IAC, a number of optional items can be completed under this task using the mechanisms in Section 6.2 (Change Order) of this Agreement as long as funding remains to complete the optional tasks.

Schedule: Each optional item will include a schedule for completion.

Deliverables: *Each optional item will include deliverable(s) as defined in the change order.*

Exhibit C
Price and Schedule of Payments

The following table represents the Contractor's cost bid for Independent QA/QC Services for Los Angeles County; for the LAR-IAC Project.

Task ID	Task/Subtask Description	# Tasks	Unit Costs	Total Costs
Task 1	QA/QC Project Management			
1a	Quality Plan + PM	1	\$41,314.31	\$41,314.31
1b	Meetings in LA	2	\$3,000.00	\$6,000.00
1c	Progress Tracking	1	\$1,728.40	\$1,728.40
	Task 1 Totals			\$49,042.71
Task 2	AT Reports			
2a	AT Reports to review	29	\$850.00	\$24,650.00
	Task 2 Totals			\$24,650.00
Task 3	4" GSD Orthophoto QA/QC			
3a	Horizontal Accuracy/AT Block	29	\$242.61	\$7,035.69
3b	Aesthetics/Tile	12,721	\$12.99	\$165,245.79
3c	Completeness, Countywide	1	\$10,873.20	\$10,873.20
3d	Generate Products, Countywide	1	\$9,594.00	\$9,594.00
3e	Survey QA/QC Checkpoints	160	\$450.00	\$72,000.00
	Task 3 Totals			\$264,748.68
Task 4	1' GSD Orthophoto QA/QC			
4a	Aesthetics/Tile	1,080	\$10.93	\$11,804.40
4b	Completeness, Countywide	1	\$1,599.00	\$1,599.00
4c	Generate Products, Countywide	1	\$1,279.20	\$1,279.20
	Task 4 Totals			\$14,682.60
Task 5	Updated Breaklines/DTMs			
5a	Completeness, est 200 Tiles	1	\$569.25	\$569.25
5b	Generate Products, est 200 Tiles	1	\$90.00	\$90.00
	Task 5 Totals			\$659.25
Task 6	Oblique Imagery QA/QC			
6a	Image Coverage	1	\$2,598.38	\$2,598.38
6b	Horizontal Accuracy	1	\$5,436.60	\$5,436.60
6c	Vertical Accuracy	1	\$4,797.00	\$4,797.00
6d	Deliverables	1	\$16,629.60	\$16,629.60
	Task 6 Totals			\$29,461.58
Task 7	Full Delivery, 2 countywide + 40 SLDS			
7a	Full Delivery	1	\$3,877.58	\$3,877.58
7b	One Year Storage	1	\$3,500.00	\$3,500.00
7c	Hard Drives (Dewberry purchase)	66		\$11,000.00
	Task 7 Totals			\$18,377.58
Task 8	Additional Data Products			
8a	4" to 1' resample	1	\$2,950.35	\$2,950.35
8b	Create JPEG2000	1	\$2,318.55	\$2,318.55
8c	SDE or File GDB for SLDS	40	\$239.85	\$9,594.00
	Task 8 Totals			\$14,862.90
Task 9	Mosaic Generation			

Task ID	Task/Subtask Description	# Tasks	Unit Costs	Total Costs
9a	ECW Countywide	68	\$79.95	\$5,436.60
9b	ECW SLDS	40	\$79.95	\$3,198.00
	Task 9 Totals			\$8,634.60
Task 10	Production Management			
10a	Manage Pictometry-Sanborn/Month	10	\$1,872.00	\$18,720.00
	Task 10 Totals			\$18,720.00
	IMAGERY SUBTOTAL			\$443,839.90
Task 11	LiDAR Products			
11a	LiDAR QA/QC per mi ²	3,954	\$17.03	\$67,336.62
11b	Breaklines QA/QC per mi ²	3,954	\$8.40	\$33,213.60
11c	Raster DEM QA/QC per mi ²	3,954	\$3.50	\$13,839.00
11d	Contours QA/QC per mi ²	3,954	\$4.41	\$17,437.14
11e	LiDAR Project Management	1	\$17,778.76	\$17,778.76
	Task 11 Totals			\$149,605.12
	REQUIRED DELIVERABLES SUBTOTAL			\$593,445.02
Task 12	Optional Items			\$6,554.98
	Task 12 Totals			\$6,554.98
	CONTRACT TOTAL			\$600,000.00