



Procurement Contracting & Payment Services
 One Waterfront Place / 3rd Floor / Don Knotts Blvd
 PO Box 6024
 Morgantown WV 26506
 Ph: 304-293-5711

Visit WVU PCPS on the internet: <http://pcps.wvu.edu>

Number:

U19ATLAS

Please show this number on all packages and documents related to this Order.

Vendor: Atlas Geographic Data, Inc. 215 Racine Drive, Suite 201 Wilmington, NC 28403		Ship To: Department of Geology & Geography 431 Brooks Hall Morgantown, WV 26505-6064		Invoice To: West Virginia University Payment Services One Waterfront Pl / 3rd Fl / Don Knotts Blvd PO Box 6024 Morgantown WV 26506-6024 Ph: 304-293-5711 Itemize Invoices According to Purchase Order One (1) original invoice required	
Date of Order / Buyer: 1/14/19 J. Farner	Payment Terms: 30 Net	Ship Via: N/A	FOB: N/A	Freight Terms: N/A	Delivery Date: Per Agreement

AGREEMENT

This Agreement constitutes acceptance of contract by and between West Virginia University Board of Governors on behalf of West Virginia University and Atlas Geographic Data, Inc.

for: E-911 addressing and mapping & full-tax map conversion or parcel re-mapping activities for various West Virginia counties

Services beginning Start Date: January 1, 2019 and extending through End Date: December 31, 2021

All products/services shall be provided/performed in accordance with the standard form of agreement attached hereto as a part hereof.

Service performed under this Agreement is to be continued in the succeeding fiscal year contingent upon funds being appropriated by the Legislature for this service. In the event funds are not appropriated for these services, this contract becomes of no effect and is null and void after June 30.

If 'Open-End' is stated in lieu of total purchase order amount - it is due to indefinite quantity or length of service required; but, only to the extent the services remain within the intended scope of work.

Total Amount of this Order:

Open End

Authorized Purchasing Agent Signature: _____



AGREEMENT FOR SERVICES
Between
WEST VIRGINIA UNIVERSITY
And
ATLAS GEOGRAPHIC DATA, INC.

This Service Agreement ("Agreement") made this 1st day of January 2019, by and between the West Virginia University Board of Governors on behalf of West Virginia University and its Department of Procurement, Contracting and Payment Services located in Morgantown, WV 26506, ("University"), and Atlas Geographic Data, Inc., located at 215 Racine Drive, Suite 201, Wilmington, NC 28403, ("Vendor").

WHEREAS, the University desires to have the Vendor perform certain professional services;

WHEREAS, the Vendor represents that he/she is qualified, ready, willing and able to perform such professional services; and

THEREFORE, in consideration of the mutual covenants and promises herein contained and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, the parties to this Agreement agree as follows:

1. **Scope of Work.**

Vendor shall provide the labor, supervision, equipment, materials, supplies and other necessary items to perform the professional services set forth in Exhibit A & B, with the standard of professional care and skill customarily provided in the performance of such Services and to the satisfaction of the University.

2. **Agreement Term.**

This Agreement shall commence on January 1, 2019, and will terminate on December 31, 2021, or as otherwise stated in this Agreement. The University reserves the right to alter the starting and ending dates according to the needs of the University.

3. **Compensation.**

- A. The University will pay Vendor for the Services performed hereunder on the following basis (specify rates or flat fixed fee) set forth in Exhibit A & B; all expenses agreed to by the parties, including travel, shall be included in the daily rate or fixed fee compensation. University will not reimburse or otherwise be responsible for fees not contained therein. Any terms or conditions contained in an invoice or rate schedule which are different from, in addition to, or which vary the terms and conditions of this Agreement, shall not be binding upon University and University objects thereto.
- B. Payment will be made upon submission of detailed invoices and any other documentation required for such payment based upon Section 3 A., above. Payment will only be made in the name of the Vendor as specifically identified and set forth in this Agreement. Invoices shall contain, or be attached to, supporting documentation that is satisfactory to the University which, at a minimum, shall state the Service rendered in detail, dates of Service, Contract Identification, and any additional information facilitating the proper allocation and payment of such invoice. Payment Terms shall be Net 30.
- C. If applicable, Vendor must be registered with the State of West Virginia pursuant to W. Va. Code §18B-5-5 before the Vendor is eligible to render services to the University. To be eligible to render services hereunder, Vendor must have on file with the West Virginia Purchasing Division a completed Vendor Registration and Disclosure Statement. By execution of this Agreement, Vendor warrants that it is a registered vendor with the State of West Virginia and in good standing.
- D. Upon request from University and upon execution of this Agreement, Vendor shall provide University with a completed original Department of the Treasury, Internal Revenue Service, Form W9 "Request for Taxpayer Identification Number and Certification."
- E. University shall not directly or indirectly be liable for taxes of any kind. To the extent allowed by law, University shall provide, upon the request of Vendor, all applicable tax exemption certificates.

- F. All invoices for Services shall be paid in arrears within thirty (30) days after the submission by Vendor of a valid invoice for Services rendered. Pursuant to W. Va. Code § 12-3-10, payments may only be made after the services have been performed. No deposit or prepayment may be requested by Vendor or paid by University.
- G. If performance of this Agreement extends beyond the current fiscal year (ending June 30), Vendor acknowledges that financial obligations of University payable after the current fiscal year are contingent upon funds for that purpose being appropriated, budgeted and or otherwise made available. In the event funds are not appropriated, budgeted or otherwise available for these Services, this Agreement becomes void and of no effect after June 30.

4. Reporting.

In rendering the Services performed hereunder, the Vendor shall communicate with West Virginia University through its Department of Geology and Geography to the attention of Kurt Donaldson.

University shall have the right, but not the duty or obligation, to inspect the work at any time to ensure compliance with the terms and provisions of this Agreement.

5. Method of Operations.

- A. Vendor shall promptly commence and diligently prosecute the Services in a safe, careful, skillful, efficient and workmanlike manner in accordance with recognized methods and practices, in compliance with all lawful policies of the University, and in compliance with all federal, state and local laws, rules and regulations, orders and permits, now existing or hereinafter enacted with respect to the Services and the Vendor, including but not limited to, laws relating to equal employment opportunity, as well as all generally accepted standards applicable to such work.
- B. Vendor certifies that it does not owe any debt or delinquent taxes to the State of West Virginia at the time of execution of this Agreement pursuant to W. Va. Code § 5A-3-10a.
- C. Vendor submits that to its knowledge, no officer or employee of the State of West Virginia or University has participated in any decision relating to this Agreement which affects his/her personal interest or the interest of any corporation, partnership, or association in which (s)he is directly or indirectly interested, as set forth in W. Va. Code § 6B-1-2, *et seq.* (2010).
- D. Vendor certifies that it (a) has full power and authority to enter into this Agreement and (b) will not hereafter enter into any agreement or understanding with anyone else that might conflict with this Agreement.
- E. Unless otherwise directed by University in writing, Vendor shall secure all necessary permits, licenses, bonds (if applicable) and identification numbers required to perform the Services and shall pay all fees in connection therewith. Vendor shall be fully responsible for compliance with same and shall fulfill all obligations in relation thereto. If requested, Vendor shall provide University with copies of all permits, licenses, bonds and identification numbers required to perform the Services.
- F. Vendor shall provide to University all documentation necessary and required to show proof of insurance and proof of Workers' Compensation coverage prior to University executing this Agreement. Vendor further agrees and understands that failure to maintain the required insurance as stated in Section 14 may lead to termination of this Agreement pursuant to Section 14 below, in the sole discretion of University.
- G. Vendor shall annually perform the necessary, complete and thorough background and any other applicable checks prior to assigning any person or persons to provide Services to WVU, and, upon WVU's request, shall provide evidence to WVU that such person(s) have successfully completed such checks. Vendor will not permit any person to perform Services if such person has not successfully completed a background and any other applicable check. The documentation for these checks should be available for inspection by WVU within twenty-four (24) hours of such request.



H. All persons performing work for WVU must follow WVU employee policies, <http://employeerelations.hr.wvu.edu/wvu-handbooks>. Failure to comply with WVU employee policies may result in the removal of said individual from WVU campuses.

6. **Relationship of the Parties.**

Vendor shall perform the Services as an independent contractor. University is interested only in the results to be achieved and compliance by Vendor with the terms and conditions of this Agreement and all applicable laws. The conduct and control of the Services shall lie solely and exclusively with Vendor. Neither Vendor nor any of its agents, employees, subcontractors, servants or invitees (collectively "Vendor's Employees") shall be considered an agent or employee of University, nor shall anything in this Agreement be construed as creating a single enterprise or joint venture, for any purpose. Vendor's Employees are not entitled to any benefits provided by University for its employees. However, the work is subject to the right of inspection and approval by University and all applicable governmental authorities. Vendor shall be solely responsible for the acts of Vendor and Vendor's Employees during the performance of the Services.

7. **Written Notice/Delivery.** Any notice required or permitted to be given under this Agreement shall be in writing and shall be sent either by registered or certified mail with return receipt requested, facsimile transmission with confirmation of receipt, or by national overnight courier, addressed to the receiving party at the address below:

Atlas Geographic Data, Inc.
c/o Larry Kirkpatrick
215 Racine Drive, Suite 201
Wilmington, NC 28403
Phone: 910 256 9892

Email: lkirkpatrick@atlasgeodata.com

West Virginia University:
c/o Kurt Donaldson
431 Brooks Hall
Morgantown, WV 26505-6064
Phone: (304) 293-9467

Email: kurt.donaldson@mail.wvu.edu

8. **Examination of Records and Vendors Progress.** The University shall have access to and the right to examine any pertinent books, documents, papers, and records of Vendor involving transactions related to this Agreement until the expiration of three years after final payment hereunder. In the performance of the Services, Vendor has the authority to control and direct the performance of the details of the work, the University being interested only in the results obtained. However, the work contemplated herein must meet the University's standards and approval and shall be subject to the University's general right of inspection and supervision to secure the satisfactory completion thereof.

9. **Publicity.** It is also agreed that no advertising publicity matter having or containing any reference to West Virginia University, or in which the name is mentioned, shall be made use of by the Vendor or anyone on the Vendor's behalf unless and until the same shall have first been submitted to, and received the written approval of, an authorized representative of the University.

10. **Non-Discrimination.** The Vendor agrees: (a) not to discriminate in any manner against an employee or applicant for employment because of race, color, religion, creed, age, sex, marital status, national origin, ancestry, sexual orientation, or physical or mental handicap unrelated in nature and extent so as reasonably to preclude the performance of such employment; (b) to include a provision similar to that contained in subsection (a), above, in any subcontract except a subcontract for standard commercial supplies or raw materials; and (c) to post and to cause subcontractors to post in conspicuous places available to

employees and applicants for employment, notices setting forth the substance of this clause.

11. **Intellectual Property.** All of the materials developed by Vendor and all materials prepared for and delivered to the University by Vendor under this Agreement shall belong exclusively to the University and shall be deemed to be **works made for hire** and the University shall be the sole owner of all copyright and other proprietary rights (both tangible and intangible), title and interest therein, including the right to revise, edit, and distribute same. Notwithstanding the foregoing, nothing herein conveys or transfers ownership of or rights to Vendor's Intellectual Property. For the purpose of this Agreement, Vendor's Intellectual Property shall mean and include those tools, templates, reporting formats and other items or artifacts that Vendor employs as part of its normal business. In the event Services resulting from this Agreement include such Vendor's Intellectual Property, then Vendor hereby grants an limited, royalty free, exclusive right to University to use such Vendor's Intellectual Property as it deems fit to carry out the purposes contemplated by this Agreement.

Notwithstanding the foregoing, for research collaboration pursuant to subcontracts under sponsored research agreements administered by the West Virginia University Office of Sponsored Programs, intellectual property rights will be governed by the terms of the grant or contract to University to the extent such grant or contract requires intellectual property terms to apply to subcontractors.

12. **Patent Rights.** The Vendor agrees that any discovery or invention, whether or not subject to patent, developed as a direct result of work done under this Agreement, shall be the sole property of the University and the University shall have the exclusive right to any patent derived therefrom.

Vendor further agrees to report promptly in writing to the University any discovery or invention developed under this Agreement.

13. **Indemnification.** Vendor agrees to indemnify, defend, and hold whole and harmless the University, its affiliates, and their respective Board of Governors, officers, employees and agents (collectively, the "Indemnified Parties") from and against all claims, demands, causes of action, losses, costs and expenses, including without limitation reasonable attorneys' fees and costs of defense (collectively, "Losses"), arising out of or incident to (a) Vendor's performance hereunder, (b) the presence of Vendor, its employees, agents or invitees on University premises, (c) any breach of any warranty of Vendor contained herein, and (d) any claim of patent, trademark, copyright, franchise or other intellectual property infringement by goods and/or service provided by Vendor hereunder; provided that Vendor shall not be liable for Losses to the extent caused by the negligence or willful misconduct of any Indemnified Party. W. Va. Const. Art. VI § 35 and Art. X § 6 do not allow University to hold harmless or indemnify Vendor.

14. **Insurance.** During the term of the Agreement, Vendor shall procure, at its own expense, and maintain for the duration of the Agreement, the following insurance coverage from insurers licensed or registered to do business in the State of West Virginia: (a) Commercial general liability insurance of not less than \$1,000,000 per occurrence and \$2,000,000 general aggregate; (b) Worker's Compensation insurance in accordance with applicable statutory limits (c) Commercial Automobile insurance in the amount of \$1,000,000 per occurrence for all owned, non-owned, hired, leased, rented, and employee non-owned vehicles, (d) where applicable, professional liability insurance of \$1,000,000 per claim/loss and \$2,000,000 annual aggregate, with proof that coverage shall remain in effect for a minimum of three years from the date of completion of the project, Vendor shall provide such other insurance as may be required by law. All insurance carried by Vendor in connection with the Services shall list University as an additional insured and such insurance shall be primary and not contributory as to any other insurance the University may have in effect. The Vendor shall provide a certificate of insurance to the University evidencing required coverage prior to commencement of the Services. All policies shall provide a minimum of thirty (30) calendar day's written notice prior to cancellation or material change. The insurance company(ies) providing the above described coverage shall have an AM Best Rating of no less than (A-) excellent.

University does not express any opinion as to the sufficiency of the liability limits set forth above. The insurance required hereunder is not a limitation of any liability of Vendor.

15. **FERPA.** Vendor agrees to abide by the Family Education Rights and Privacy Act of 1974 ("FERPA") and University's FERPA Policy found at <http://ferpa.wvu.edu/policy> including FERPA's limitations on re-disclosure as set forth in 34 C.F.R § 99.33(a)(2).

16. **HIPAA.** Vendor shall, if applicable, meet the requirements of the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191 (the "Act"), the privacy standards adopted by the U.S. Department of Health and Human Services ("HHS"), 45 C.F.R. parts 160 and 164, subparts A and E (the "Privacy Rule"), the security standards adopted by HHS, 45 C.F.R. parts 160, 162, and 164, subpart C (the "Security Rule"), and the Privacy provisions (Subtitle D) of the Health Information Technology for Economic Clinical Health Act, Division A, Title XIII of Pub. L. 111-5 and its implementing regulations (the "HITECH Act"), due to their status as a "Covered Entity" or a "Business Associate" under the Act. The Act, the Privacy Rule, the Security Rule, and the HITECH Act are collectively referred to as "HIPAA" for the purposes of this Agreement.

17. **Confidentiality of Information.** In order for the Vendor to effectively provide the Services required under this Agreement, it may be necessary or desirable for the University to disclose to the Vendor confidential and proprietary information and trade secrets pertaining to the University's past, present and future activities. The Vendor hereby agrees to treat information which has been designated to the Vendor by the University in writing as being confidential and proprietary information or trade secrets in a confidential manner. The Vendor further agrees that it will not disclose any such information so designated to anyone outside of the University during the period of this Agreement or thereafter without the prior written consent of the University, unless the Vendor is required to disclose any such information for the following reasons: 1) To comply with a legal or court order, 2) to defend itself or pursue its legal rights in a legal proceeding, or 3) to protect the health, safety, or welfare of others.

18. **Termination.** University reserves the right, in its sole discretion, to terminate this Agreement, in whole or in part, without penalty, upon written notice to Vendor. Such notice shall be delivered pursuant to Section 7, above. Upon receipt of such notice, the Vendor shall, as notice directs: 1) discontinue all services affected; and 2) deliver to the University all data, reports, summaries, and such other information and materials as may have been prepared for and/or accumulated by the Vendor in performing this Agreement, whether completed or in progress. Vendor will be compensated for Services provided pursuant to this Agreement to the effective date of termination only.

19. **Force Majeure.** Neither Vendor nor University shall be liable for any failure or delay in its performance of this Agreement if such failure or delay is directly or indirectly occasioned by an event of Force Majeure. For purposes hereof, "Force Majeure" means any event beyond the control of either party and which is relied upon by either party as justification for delay in, or as excuse from complying with, any obligation required of the party under this Agreement, including, but not limited to: (i) an act of God, war, terrorism, landslide, lightning, earthquake, fire, explosion, storm, flood or similar occurrence; (ii) any act of any federal, state, county or local court, administrative agency or governmental office or body that stays, invalidates or otherwise affects this Agreement, the operation of, or any permits or licenses associated with or related to, the Services; (iii) the adoption or change (including a change in interpretation or enforcement) of any federal, state, county or local law, rule, permit, regulation or ordinance after the date of execution of this Agreement, applicable to the obligations hereunder, including, without limitation, such changes that have a substantial or material adverse effect on the cost of performing the obligations herein; (iv) any work stoppages, strikes, picketing, labor

dispute, or similar activities at the Premises; (v) the institution of a legal or administrative action or similar proceeding by any person or entity that delays or prevents any aspect of the Services. In the event of Force Majeure, and during the continuance thereof, the obligations under this Agreement shall be suspended and neither party shall have any liability to the other due to such event of Force Majeure or such suspension. If the Force Majeure continues unabated for a period of sixty (60) days and renders either party unable, wholly or in part, to carry out any material part of its obligations under this Agreement, then either party shall have the right to terminate this Agreement and shall not have any liability to the other party other than any monetary obligations to the other which has become due prior to the date of such termination.

20. **Changes.** The University may, from time to time, require changes in the scope of the Services of the Vendor to be performed hereunder. Such changes, including any increase or decrease in the amount of the Vendor's compensation, which are mutually agreed upon by the parties, shall be incorporated by written amendment to this Agreement.

21. **Jurisdiction; Governing Law.** The laws of the State of West Virginia shall govern the interpretation and enforcement of the Agreement. All disputes arising out of related to this Agreement shall be filed by Vendor in the West Virginia Court of Claims in Kanawha County or filed by University in a court of competent jurisdiction.

22. **Successors and Assigns.** This Agreement binds and benefits the parties and their respective heirs, executors, administrators, legal representatives, successors and assigns. The personal skill, judgment and abilities of the Vendor are an essential element of this Agreement. Therefore, although the parties recognize that the Vendor may employ qualified personnel to provide Consulting Services under the Vendor's supervision, the Vendor shall not assign, transfer or subcontract any portion of the Consulting Services to another party without the prior written consent of the University.

23. **Headings.** The headings of the herein are inserted for convenience only, and shall not control or affect the meaning or construction of any of the provisions of this Agreement.

24. **Non-Waiver Provision.** The failure of either party to enforce any of the provisions of this Agreement or to require performance of the other party of any of the provisions hereof shall not be construed to be a waiver of such provisions, nor shall it affect the validity of this Agreement or any part thereof, or the right of either party to thereafter enforce each and every provision.

25. **Severability.** Each provision of this Agreement is to be interpreted in such a way as to be valid under applicable law. If any provision is invalid under applicable law, it is to be considered ineffective only to the extent of such invalidity and the remainder of the provision and the other provisions of this Agreement remain valid.

26. **Survival.** The provisions of this Agreement which by their nature are intended to survive the termination, cancellation, completion or expiration of the Agreement, including, but not limited to, indemnifies, certifications, warranties, and any expressed limitation of or releases from liability, shall continue as valid and enforceable obligations of the parties notwithstanding any such termination, cancellation, completion or expiration.

27. **Authorized/Electronic Signatory.** If the Agreement is signed by someone other than the Vendor, the person signing expressly warrants that he/she is the authorized person/entity to execute this Agreement for the Vendor. Any signed document transmitted by fax or other electronic means shall be considered an original document and shall have the binding and legal effect of an original document.

28. **Entire Agreement.** This Agreement and any attachments hereto, represent the entire agreement between the parties and supersedes any prior oral or written understandings.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed this day, month, and year first written above.

Atlas Geographic Data, Inc.

West Virginia University Board of Governors
On behalf of West Virginia University

By: Hayes Lambert

By: Joshua W. Farner

Print: Hayes Lambert

Print: Joshua W Farner

Its: President

Its: Category Analyst

Date: 1/11/2019

Date: 1/14/19

Approved as to form prior to acknowledgment thereof

this 11th day of May, 2016.

Patrick Morrissey, Attorney General

By: Robert H. Ashie Chief Counsel

This statement of work ("SOW") dated January 1, 2019 is issued pursuant to the terms and conditions of Agreement for Services number U19ATLAS with an effective date of January 1, 2019 by and between West Virginia University Board of Governors on behalf of West Virginia University ("University") and Atlas Geographic Data, Inc. ("Vendor").

EXHIBIT A

STATEMENT OF WORK - GIS E-911 ADDRESSES

I. Scope of Work

- a. Vendor will be responsible for completing concurrent E-911 addressing and mapping activities for multiple jurisdictions in West Virginia.
- b. Vendor will be responsible to:
 - i. Acquire and organize all databases, documents, etc. related to addressing. Develop and consolidate all gathered source data into ESRI database format and prepare for evaluation.
 - ii. Evaluate and analyze all project data on a structure-by-structure and parcel-by-parcel basis to determine addressable structures in accordance with the county or municipal address ordinance. Results will be recorded and stored in geodatabase format for use in field verification of all addressable structures.
 - iii. Review and revise road centerlines as necessary. Identify and correct any attribute discrepancies such as road name or address range. Verify centerline geometry accuracy according to field verification and the latest available aerial photography. Centerline geometry and attributes should meet local addressing ordinance and NENA standards.
 - iv. Assist local community officials with and technically support as required and directed by WVU GIS Technical Center staff for the field verification of countywide structure addresses. Addresses will be field verified for confirmation of the current address assigned to each structure. Verification will be "windshield survey" with field crews looking for addresses posted on mailboxes, driveways, homes and businesses, and any other posting within view from the vehicle.
 - v. Complete reconciliation of field address points to Telco ALI database.
 - vi. Update ESN and box boundaries to reflect updated geometry of new centerlines. Adjust ESN, Fire Box, and EMS box boundaries if needed and directed to do so by county emergency management.
 - vii. Load deliverables within E-911 addressing workstations. Provide and assist with data to be loaded into E-911 CAD dispatch system. Provide onsite training for county addressing personal. Provide custom addressing tool to allow for quick and accurate addressing within address database.

c. Deliverables:

i. Vendor will be responsible for the following:

1. SITE Addresses

a. Development of a complete, accurate and reliable database of structure address points. Then subsequent reconciliation to, and synchronization with appropriate Telco for update and correction of an ANI/ALI database for landline telephones for E-911 Computer Aided Dispatch (CAD) application. Address point data will be delivered as ArcGIS shapefiles formatted for direct loading and operation within the county's computer-aided dispatch (CAD). Develop and deliver new MSAG to Frontier. Site addresses should be located in the geometric center or centroid of the structure.

b. Developed to near 100% completion and accuracy.

2. STREET Addresses

a. Development of an accurate and complete ArcGIS road centerline file that is topologically structured for E-911 CAD applications to include road name and linear calculated address ranges between intersections, bridges and railroad crossings. The road centerline file is to be formatted as ArcGIS shapefiles for direct loading and operation within the county's CAD, and be fully reconciled to the address point database, referenced above. This road centerline file will become a critical part of a GIS-CAD base map for ultimate Phase II wireless implementation and interactive mapping of wireless calls on the county's CAD system.

b. Developed to 98% completion and accuracy.

3. Master Street Address Guide (MSAG)

a. Update and redevelopment of an accurate and complete Master Street Address Guide (MSAG) that is formatted per NENA specifications for all E-911 named roads in the county to include all Emergency Service Zones (ESZ) and attendant unique polygons of Emergency Service Numbers (ESNs) address breaks along named roads. ESZ and ESN polygons are also to be mapped out fully countywide as ArcGIS attributed polygons for direct loading and operation within the county's CAD.

4. WV Statewide Addressing and Mapping System (WVSAMS-II)

a. WVSAMS Deliverables

i. Site Address Points

ii. Road Centerlines

iii. ESN zone data

- b. Data will be delivered as ArcGIS Geodatabase, formatted to the SAMS-II data model as provided by STATE.
 - 5. Data quality reports and metadata in accordance with the National Geospatial Data Assets (NGDA) Metadata Guidelines. <https://www.fgdc.gov/metadata/geospatial-metadata-standards> (ISO-19115). Metadata attachments should include address completion and accuracy information for each mapping activity. Metadata and technical documentation regarding the addressing map files should also be included.
- d. Responsibilities:
 - i. VENDOR responsibilities include:
 - 1. VENDOR is defined as Atlas Geographic Data, Inc
 - a. Lead technical unit for coordinating and completing all deliverables
 - b. Conduct necessary research to identify relevant work tasks
 - c. Submit a Statement of Work/Memorandum of Understanding for each mapping activity to include specifications, timelines, budget, and deliverables for each jurisdiction for approval by State and local authorities.
 - d. Coordinate with the State on work tasks, work priorities/schedules, and deliverables
 - e. Onsite start-up and closing meetings for each mapping activity
 - f. Provide technical support and training during mapping activity. Continue technical support to jurisdiction for one year after delivery of product deliverables.
 - g. Warrant data quality and mapping for 18 months after contract completion
 - h. Provide a management plan and timeline on completing requirements for the conversion of 56,818 addresses for multiple jurisdictions before end of performance period
 - ii. STATE responsibilities include:
 - 1. STATE is defined as: WV GIS Technical Center at West Virginia University and the WV Property Tax Division
 - a. Agencies: WV GIS Technical Center at West Virginia University and the WV Division of Homeland Security & Emergency Management (DHSEM)
 - b. Provide map specifications and standards to vendor
 - c. Assist with research in identifying communities with E-911 addressing deficiencies in the State. Provide other in-kind technical support as defined in the Statement of Work.

- d. Provide a Statement of Work template
 - e. Review and approve Statement of Work, specifications, timelines, and deliverables for each jurisdiction.
 - f. Approve notifications to proceed on mapping activity projects
 - g. Review all deliverables prior to releasing payments
- iii. LOCAL responsibilities include:
- 1. LOCAL is defined as: county or incorporated jurisdictions associated with E-911 addressing offices
 - a. Review and approve Statement of Work that includes specifications, timelines, and deliverables for each jurisdiction
 - b. Identify a technical point of contact for the project which are typically E-911 addressing coordinators
 - c. Provide in-kind support. It is anticipated that any field verification or field mapping of addresses or inventorying of roads necessary to achieve the project goals will initially be conducted by county staff.
 - i. The vendor may eventually need to supplement county staff, based upon the extent of fieldwork required and the overall project schedule.
 - ii. The county will take responsibility to develop a tabular file and generalized map of all E-911 named roads in the county as an integral part of an ongoing road signage project.
 - d. Provide best available spatial data to include:
 - i. Address databases and mapping files
 - ii. Leaf-Off Imagery
 - iii. Tax parcels and assessment data
 - iv. Incorporated boundaries
 - e. Maintain digital E-911 addresses
 - i. E-911 address offices shall maintain and submit changes to the Statewide Addressing and Mapping System (SAMS)
 - ii. Submit updated addresses annually to the Statewide Addressing and Mapping System

- iii. Allocate funding for tax map maintenance through internal staffing or outsourcing to a GIS Professional Services company. It is important for communities to maintain digital address and mapping system so the capital investment in the digital conversion is not lost.

II. Technical Approach

- a. All addressed structures within a typical county will be field mapped and inventoried by Vendor.
- b. Vendor will be responsible for placement of a centroid within the structure footprint that has the full address parsed according to NENA specifications.
 - i. Each addressed structure centroid will have a link to its correct address street by way of a unique and logical GIS coding schema.
 - ii. Barns, outbuildings, sheds, etc. and all other structures that should not be assigned an address may sometimes also be mapped (when considered significant) and coded as to the basic type of structure using a County approved database design.
 - iii. All units within all multi-addressed structures will be field verified and mapped and accounted for fully using a database design and schema approved by the Client from deliverables of a Pilot area project.
 - iv. Any structures that must be assigned a new address due to any issues or conflicts found within the field verification will be assigned by new addressed structure points with a database linkage and a direct relationship to the existing "old" address.
- c. The existing County road centerline file will be used as a starting point for road centerline mapping and attribution. The road centerline file will be intersected by Emergency Service Zones (ESZs) such that the Telco can confirm/assign Emergency Service Numbers (ESNs). The existing Master Street Address Guide (MSAG) will be reviewed and reports developed by Vendor for delivery to both the County and Telco for any necessary changes. The MSAG reports will document all changes, additions and deletions that are necessary to bring the MSAG into a full reconciliation and synchronization with the road centerline file and the County's official road registry. Data construction, editing and reconciliation of addressed structures to a GIS road centerline file will be accomplished by Vendor in accordance with the methods, database design and specifications provided by NENA document "NENA Information Document for Synchronizing Geographic Information System Databases with MSAG & ALI (NENA 2-001, version 1, June 6, 2009)". This will require synchronization of MSAG, ALI, Address Point and road centerline datasets within GIS and appropriate exterior database environments. Any new address assignments and road naming will be accomplished in accordance with WVSAMB 911 standards, specifically guidelines provided by the WV9-1-1 Addressing handbook, and the adopted County address ordinance. The County will be requested to approve and participate in judgment for assignment of new addresses, any new road names or any changes to existing addresses or road names.

- d. Vendor will edit, update, correct and complete an ArcGIS road centerline file that is reconciled to the newly field verified and mapped address points and the official County street name file (road register) and an updated MSAG. Feature data sets within the delivered ArcGIS Geodatabase and shapefile deliverable will include, but not be limited to:
 - i. building centroids (located geospatially within the structure footprint) with new numeric addresses (parsed as per NENA as well as listed as line string)
 - ii. any old address (parsed as well as line string)
 - iii. address relationships/linkage to the street centerline
 - iv. an ArcGIS centerline file to include street name, aliases, correct directionality and new accurate address ranges between intersections and ESN boundary intersects

- e. All roads that are named for 911 dispatch purposes (including those that are private roads and drives with multiple addressed structures that are therefore named 911 roads) will be edited or re-digitized as centerlines in an ArcGIS environment as described by NENA specifications for data content and structure as well as by WVSAMB 9-1-1 standards. The road centerline file will include address ranges at apparent break points of road intersections, railroads and bridges as well as Emergency Service Number (ESN) boundaries. Road centerlines will be developed to correctly fit the latest available and best scale digital orthophotography and even by GPS field mapping (or conversion from plats) for any “post” aerial photography dated roads that are deemed critical. The Pictometry dataset from 2010 may occasionally be used as a supplemental basemap source for digital insertion of structures and roads due to the internal oblique imagery. All data will be delivered in an ArcGIS (latest version as operated by the County) format. Structure address data will be developed County-wide for all addressed structures as attribute fields to ArcGIS address points that are mapped within the apparent footprint of each structure based upon the latest version of aerial photography that has been orthophoto correctly rectified. The attribute data will include the existing “old” address that has been previously assigned by a linear distance from the road origin point or zip code boundary using the previous schema address interval (WVSAMB standards). Any “New” addresses will be calculated by digitizing from the latest available digital orthophotography, or by GPS field mapping for structures that are “post” aerial photography. Address point and road centerline data will have GIS data structure as described within “NENA Information Document for Synchronizing Geographic Information System Databases with MSAG &ALI; Version 1, June 6, 2009”.

- f. Existing city-style addresses within larger incorporated towns and cities will be retained, inventoried and mapped using the referenced NENA database development standards and database design. Atlas will take responsibility to develop a complete and precise GIS file and report of any existing City-style addressed areas that need to be re-addressed based upon finding conflicts or confusing existing addresses that preclude development of logical street address ranges.

- g. Vendor agrees to the following scope of services for the County GIS E-911 Address mapping project:
 - i. Development of a complete, accurate and reliable database of addresses for all addressed or addressable structures in the County. Address point data will be delivered as ArcGIS shapefiles and geodatabase formatted for direct loading and operation within the County’s CAD and ArcGIS systems. Address datasets will be provided as ArcGIS and address data fully compliant to standards and required formats of WV Division of Homeland Security and Emergency Management, WVSAMB and the referenced NENA specifications.

- ii. Editing and reports will be provided for all necessary changes to the existing Master Street Address Guide (MSAG) that is formatted per NENA specifications for all E-9-1-1 named roads in the County to include all Emergency Service Zones (ESZ) and attendant unique polygons of Emergency Service Numbers (ESNs) and MSAG required address breaks along named roads. ESZ and ESN polygons will be reviewed with Client staff to a level of street breaks literally between structures and will be mapped fully County-wide as ArcGIS attributed polygons for direct loading and operation within the County's specific CAD system and GIS (ArcGIS) meeting all Frontier Telco requirements and formats.
- iii. Development of an accurate and complete ArcGIS road centerline file that is topologically structured for E-9-1-1 the County's CAD and ArcGIS systems. The road centerline file is to be formatted for direct loading and operation within the County's specific CAD, and be fully reconciled to the new GIS address point database. This road centerline file will become a critical part of a GIS-CAD basemap for continued Phase II wireless functionality and interactive mapping of wireless calls on the County's CAD system.
- iv. Conversion of State of WV supplied (2003) digital orthophoto imagery to a Lizardtech MrSID generation "2" format (as well as any subsequent ortho-imagery) that is compatible with the client's specific CAD. This generally requires several different compression level files to achieve a functional and CAD responsive imagery background. We anticipate an off-line, low compression version that is accessible to 911 dispatch operators and supervisors when a zoomed in image of great detail is required. This would be in addition to the more highly compressed version that is most often loaded onto the CAD map display computers.
- v. Develop all of the above described databases and datasets, as well as all other project datasets (such as Telco report and USPS edit sheets) within the dates and time intervals described within the "Project Schedule" that is included with this Atlas proposal.
- vi. It is oftentimes typical that a significant number of structure addresses within and just adjacent to Cities and larger towns that have been previously assigned on a town block or city style schema will not be re-assigned unless serious conflicts, duplicative or confusing addresses are found from the field verification task. All existing addresses should be field verified and fully mapped as address points (within structure footprints), and street/road centerlines mapped within these areas, even where the address sequencing at first appears to be predictable. The data deliverables for these adequately addressed neighborhoods and subdivisions will be to the same standards and format requirements as the areas that are also to be fully field verified within the rural parts of the County. All multi-addressed structure units will be field verified, accounted for and mapped at their true location within buildings, complexes, office parks, apartment complexes, shopping centers, etc.
- vii. Provide reconciliation and synchronization of the various distinct individual databases that are developed as a part of a typical E-911 address database development project for CAD application. This most generally includes;
 - 1. Address points reconciled to Telco ANI/ALI addresses.
 - 2. Address points reconciled to Road centerline address ranges.
 - 3. ESZs and subsequent ESNs reconciled as consistent in both road centerline and MSAG databases.
 - 4. Road centerlines fully reconciled and synchronized with records of the final project developed MSAG.

- h. Vendor agrees to assist local community officials with and technical support as required and directed by WVU GIS Technical Center staff for the field verification and field mapping of addresses (in a typical countywide contract) necessary to achieve the project goals even where GIS database processing appears to reliably map addresses. This will include documentation if a building is an addressable structure or one that should not be uniquely addressed (such as a barn, shed, etc.). Vendor's field verification work to determine address may involve various degrees of meeting with individual Post Office personnel as well as significant in-field determination of address by riding routes and mapping of structure "addresses from mail box locations, contacting residents, telephone communications, checking electric meter numbers, etc. Vendor takes full responsibility for this fieldwork with completion within the overall project schedule. The County will take responsibility to assist with development of a tabular file and generalized map of all E-911 named roads, assign and provide road names as needed. The County will also take responsibility to work with USPS and other agencies to notify residents of any new addresses based on the results of the project.

III. Schedule

- a. This project's one-time funding from the FEMA Hazard Mitigation Grant Program (HMGP) to the WV Division of Homeland Security and Emergency Management (WVDHSEM) with sub-recipient WV GIS Technical Center at West Virginia University will enable the State to develop a more current and complete address and mapping system that is vital for a wide array of State, Federal and Local Government needs and applications. It is estimated that on the order of 58,818 addresses will require GIS mapping and conversion for this overall program that is to be fully accomplished (technically and administratively) with all deliverables accepted and approved within a time period of 1-1-2019 through 6-4-2021.
- b. This program requires the performance of all work in complete compliance with the project specifications: being, NENA specifications that are most generally accepted as Information Document (Synchronizing Geographic Information System Databases with MSAG & ALI: NENA 2-001, version 1(June 6, 2009), WVSAMS-II 911 standards, specifically guidelines provided by the WV9-1-1 Addressing handbook, the SAMS-II data model and WV address conversion format requirements of the WV Division of Homeland Security & Emergency Management (WVDHSEM).
- c. A detailed project schedule will be developed by Vendor for each County project of this program to be approved by WVU GIS Technical center staff.

IV. Pricing

ADDRESS MAPPING				
Scope	Number of Addresses	Cost per Address	Administrative Fee per Address (10%)	Cost
Site Address	56,818	\$1.00	\$0.10	\$62,500
Street Centerline	56,818	\$0.75	\$0.08	\$47,159
MSAG	56,818	\$0.25	\$0.02	\$15,341
TOTAL	56,818	\$2.00	\$0.20	\$125,000

EXHIBIT B

STATEMENT OF WORK - GIS TAX MAPS

- I. Scope of Work
 - a. Vendor will be responsible for completing concurrent full-tax map conversion or parcel re-mapping activities of select counties in West Virginia.
 - i. Vendor is responsible for the following:
 1. Full Tax Map Conversion: Braxton, Calhoun, Clay (Henry District), Logan, McDowell, Roane
 2. Remapping and Technical Support: Tucker County, etc.
 - b. Parcel Conversion Tasks
 - i. Vendor is responsible for the following:
 1. Geo-rectify current tax maps using the best available orthoimages
 2. Parcel Digital Conversion:
 - a. Map multi-parcel subdivisions by COGO from plats. Retain parcel line dimensions from COGO. Also map selected single parcel acreage type parcels by COGO where plats are available.
 - i. The project must be completed based upon mapping as many of the County's parcels from plats by Coordinate Geometry (COGO) where the plats are available and include suitable metes and bounds information to create COGO plots. Vendors will be responsible for obtaining all recorded plats from the Clerk's office by copying/scanning/imaging of plats on-site. The plat paper copies are available from hanging files kept within plastic sleeves from the Clerk's office. Note that some number of the plats that have been recorded in the County Clerk's office may be at a reduced scale. Platted parcels that are mapped by COGO are then to be edited to comply with current land records activities of splits, takings and combinations as effected by the County's most current tax maps and the IAS database.
 - b. "Best Fit" remainder of parcels using existing tax maps and orthophoto-imagery. Adjust or recreate parcel boundaries where gross adjustments are required
 - c. Road Buffers: Create road buffers to align properly with tax parcels and aerial imagery
 - d. Adjust/recreate parcel boundaries where gross adjustments are required

- e. Parcel File:
 - i. Topologically correct with no overlapping or duplicative errors
 - ii. Conforms to standard parcel identifier format with core IAS attributes
 - f. Full-Version Digital Tax Maps
 - i. Generate text and map annotation required for full-version digital tax maps. Include at a minimum all text from existing maps.
 - ii. Create ArcGIS map-book necessary for map printing to West Virginia requirements
 - iii. Publish digital map in accordance with tax map specifications 189 CSR 3 and tax map exchange specifications file formats set forth by the WV Property Tax Division
 - g. Assessment Record Validation: Reconcile mapping to Integrated Assessment System records with errata reports of mismatch.
 - h. Maintenance: Maintain parcel splits through the contract period. Provide county assessor with options for continual maintenance of digital tax maps beyond contract period.
- c. Deliverables
- i. Vendor will be responsible for the following:
 - 1. Countywide Seamless GIS parcel polygon in Esri geodatabase format
 - a. Current: Matches assessment record count
 - b. Accurate: Parcel lines should be approximate to actual boundaries. For example, obvious parcel geometry errors where parcel lines cross structures should be corrected
 - i. Up to 30% of all parcels shall be mapped by COGO
 - c. Spatial Integrity: Topologically correct (no overlaps, slivers, duplicates, etc.)
 - d. Parcel ID: Full parcel ID: County code, District code, Map number, Parcel Prefix, Parcel Suffix, and Special ID. Two formats:
 - i. Concatenated Full Parcel ID (six elements separated by hyphens)
 - ii. Data fields separated into six elements
 - e. IAS: Core parcel attributes like owner, address, etc.
 - f. Full Version Digital Tax Maps

- h. Provide a project management implementation plan and timeline on completing requirements for the conversion of 136,364 full-version tax map parcels for multiple counties before the end of the performance period

ii. STATE responsibilities include:

1. STATE defined as: WV GIS Technical Center at West Virginia University and the WV Property Tax Division
 - a. Identify which counties should be awarded funding
 - b. Provide map specifications and standards to vendors
 - c. Assist with research in identifying communities with digital tax map deficiencies in the State. Provide other in-kind technical support as defined in the Statement of Work.
 - d. Provide a Statement of Work template
 - e. Review and approve Statement of Work, specifications, timelines, and deliverables for each jurisdiction
 - f. Approve Notifications to Proceed on mapping activity projects
 - g. Receive county GIS files for assembling seamless statewide master parcel file
 - h. Quality check tax map deliverables and successful implementation of county-level digital tax map maintenance programs
 - i. Review all deliverables prior to releasing payments

iii. LOCAL responsibilities include:

1. LOCAL defined as: is defined primarily as the county assessor's offices
 - a. Review and approve Statement of Work that includes specifications, timelines, and deliverables for each jurisdiction
 - b. Identify a technical point of contact for the project from the county assessor's office. Provide in-kind support where necessary.

- c. Provide best available spatial data to include:
 - i. Address databases and mapping files
 - ii. Leaf-Off Imagery
 - iii. Tax parcels and assessment data
 - iv. Incorporated boundaries
- d. Continual maintenance of digital tax maps
 - i. County assessors shall maintain and publish tax maps in accordance with state tax map specifications 189 CSR 3 Procedural Rule “Statewide Procedures for the Maintenance and Publishing of Surface Tax Maps”
 - ii. The county assessor and Property Tax Division are co-stewards of the digital tax maps. The assessors are required to submit annually any revised in digital tax map and GIS files to the WV Property Tax Division for the creation of the statewide master tax parcel database.
 - iii. Allocate funding for tax map maintenance through internal staffing or outsourcing to a GIS Professional Services company. It is important for county assessor offices converting from paper to digital parcel map systems to continually maintain their tax map systems so the capital investment in the digital conversion is not lost.
- e. Funding from WV Statute §59-1-10(8). Of the fees collected pursuant to subdivision (1), subsection (a) of this section, \$10 shall be deposited in the county general fund in accordance with section twenty-eight of this article, \$5 shall be deposited in the county reappraisal fund and dedicated to the operation of the assessor’s office mapping division.
- f. SB 588: http://www.wvgis.wvu.edu/data/otherdocs/tax/SB_588_McElwee_20170523.pdf

V. Technical Approach

- a. Tax parcel map development is accomplished by the Vendor by using “the best sources first”. The “initial” source materials to be used for map compilation will likely be road rights of ways from WVDOT plans, rights of ways from subdivision plats and parcels from subdivision plats that can be COGO mapped from survey and design metes and bounds information. Vendor will map by COGO those individual acreage tracts for which plats are registered.
- b. Tax parcels will be digitally converted from existing hard-copy tax maps as well as any existing ArcGIS or AutoCAD files by a process that repositions and reconstructs the parcels to logically “fit” the occupation, and land use lines as interpreted from the best available digital orthophotography. This process must still retain the geometric and positional integrity of the existing maps. The parcels and road rights-of-ways are to be digitally converted as topologically structured polygons that are attributed with the existing tax parcel number and selected data fields from the State Integrated Assessment System (IAS) database.

- c. This project will develop a tax parcel dataset in an ArcGIS Geodatabase format fully in compliance with all aspects of the West Virginia State specifications as outlined in current published State specifications (WV 189CSR3 Statewide Procedures for the Manual Maintenance of Surface Tax Maps” effective 2/27/2009, authority WV Code 11-1C-4(d).) In addition, the standards and specifications provided by the July 2003 publication by IAAO entitled “Standard on Digital Cadastral Maps and Parcel Identifiers” also provides supplemental guidelines to be adhered to for this project. The existing map grid will be retained with 1” =400’ scale maps Countywide, and 1” =100’ (sometimes also 1” =200’ and even 1” =50’) scale maps within incorporated towns, selected subdivisions and more densely developed villages within the County. The final ArcGIS data will be geospatially continuous county-wide; therefore, maps and projects can be extracted with any boundaries and used at any scale defined by the user, taking into consideration that the source data may have been compiled at various scaling base map and original tax map accuracies.
- d. A proper fit of parcel line work to orthophoto imagery and land use occupation features will be achieved by ArcGIS experienced cadastral mappers using ArcGIS version 10x within a Geodatabase format. ESRI Parcel Fabric data may also be provided by Vendor. Adherence to a strict ArcGIS Geodatabase design will ensure that all final data has the integrity and topology for the full GIS capability of queries, sorts and applications anticipated for the Tax, E-911 and Planning offices of the County.
- e. Vendor will develop a tax parcel dataset in an ArcGIS Geodatabase format fully in compliance with all aspects of the West Virginia State specifications as outlined in current published State specifications (WV 189CSR3 Statewide Procedures for the Manual Maintenance of Surface Tax Maps” effective 2/27/2009, authority WV Code 11-1C-4(d).) In addition, the standards and specifications provided by the July 2003 publication by IAAO entitled “Standard on Digital Cadastral Maps and Parcel Identifiers” also provides supplemental guidelines to be adhered to for this project. The existing map grid will be retained with 1” =400’ scale maps Countywide, and 1” =100’ (sometimes also 1” =200’ and even 1” =50’) scale maps within incorporated towns, selected subdivisions and more densely developed villages within the County. The final ArcGIS data will be geospatially continuous county-wide; therefore, maps and projects can be extracted with any boundaries and used at any scale defined by the user, taking into consideration that the source data may have been compiled at various scaling base map and original tax map accuracies.
- f. Platted parcels will be the first parcels mapped into the file by COGO from the metes and bounds survey and design information of the recorded plats. The process will retain the parcel line dimensions as annotation from the COGO file. Selected individual platted acreage parcels will be mapped by COGO from available registered survey plats. Finally, the remaining tax parcel boundaries will be digitally converted from the existing hardcopy maps and digital data as “best fit” with each parcel evaluated and adjusted to “fit” the land occupation lines interpreted from the Orthoimage, all the while keeping the location, geometry and configuration as represented on the existing maps.
- g. All mapping and digital conversion of tax parcels by the Vendor will be accomplished by experienced cadastral mapping staff. In this manner, WV GIS Technical Center can expect that the quality of the tax maps will be significantly improved by our processes, and the digital data will have highest quality spatial topology, attribution, annotation and mathematical integrity.

- h. Attribute-IAS CAMA database reconciliation and interactive link
 - i. Tax Parcel attribute data is to be derived, reconciled and linked by the State Integrated Assessment Systems (IAS) database. The main “links” between the new digital GIS tax parcel data and the comprehensive Oracle based system will be the Tax Parcel Identification Number and the sixteen-digit PARID number. Vendor will provide a map number based, sequential numbering system, which has been maintained in the same basic format and schema within the existing tax maps as within the records of the IAS data. Once a full reconciliation between re-mapped parcels and the IAS CAMA database has been achieved, parcel attributes can be retrieved from within any data fields or records within the IAS data. Specifically, the attribute fields most commonly used day-to-day within GIS tax parcel applications include:
 - 1) Full parcel ID number
 - 2) Tax district
 - 3) Map number
 - 4) Parcel
 - 5) Lot number
 - 6) Subdivision name
 - 7) Parent parcel, if applicable
 - 8) Source-survey-deed and/or plat reference
 - 9) Editing notation of editor
 - 10) Date of change
 - 11) Appraisal
 - 12) Improvements
 - 13) Structure classification
 - 14) Acreage (rural), road frontage (urban) or area in sq. ft. (urban)
- i. The digital mapping and conversion procedures by Vendor will involve a digital linkage of all mapped parcels to the tabular IAS tax database. Thus, a one-to-one relationship will be achieved, thereby accessing all of the tax database and attribute data that may “keyed” upon the tax parcel ID. Vendor’s staff will provide clear and concise errata reports for all instances of “one-to-many” in linking tax parcel map data to IAS records. The errata reports will also include all records from the maps and the IAS database that do not have an apparent “link”.
- j. Vendor will prepare a custom detailed database design specifically for the needs of each WV County of this program using existing documents as an initial draft. Digital data will be structured such that all unique features will be uniquely coded. Vendor’s database design will incorporate appropriate polygon, line, point, and annotation feature classes for tax parcel data. Data capture techniques will be used to ensure that road name text is separately coded from parcel numbers and parcel line dimensions, etc. Road rights-of-ways must be feature coded as both property line and right-of-way lines. Select property lines may also be jurisdictional lines and need to be extracted and separately feature coded, etc.
- k. Digital conversion by Vendor will be accomplished such that all features on the source maps will be captured. Vendors procedures will be to duplicate all features exactly as shown on the source maps. Vendor conversion operators will evaluate parcel line placement and any changes that need to be accomplished as an integral part of the digital conversion process, using “occupation and land use” features interpreted from the new digital orthophoto imagery. En-masse data shifts may be used where a minor linear shift is apparent for a correct fit of parcels to orthophoto imagery. Vendor’s QA/QC processes will include detailed review of all final data by separate cadastral mappers before data is prepared and sent to the County for review.
- l. A Pilot project will be conducted before production digitizing is initiated. This Pilot will test Vendor procedures and the project database design and incorporate the County staff’s input and expectations.

- m. A digital file (ArcGIS) for each existing tax map is sent to the County for the review, QA/QC and approval processes by the County. This submittal includes initial ArcGIS data that is structured according to the project database design and tiled according to the hardcopy tax map index. Vendor's staff will work with County staff to set up digital review processes using existing ArcGIS systems. This will enable County staff to overlay the new GIS parcel data to the orthophotography for a more efficient and extensive on-site review. Reports of parcel numbers, acreages, etc., are also included within the data delivery. Map files are to be sent in full batches of the "Blocks" determined from project layout and planning and are shipped on a monthly basis.
- n. Upon receipt of the County's review, Vendor's operators will digitally insert the edits and any new parcel splits indicated. Final data will be processed and prepared for delivery. Shipments of final data and maps will also be made on the basis of the original "Block" boundaries established for management of the project and product flow.
- o. Vendor will prepare an acreage divergence report for all parcels that are digitized. This will include the "assessed" acreage (that will be extracted from the IAS data), the acreage calculated by ArcGIS (polygon acreage), and any acreage currently shown on the existing source map. These acreage reports will be delivered on a regular basis as well as a delivery with final data. The County Assessor can then evaluate how best to utilize this acreage reporting.
- p. Railroads
 - i. A right of way width for all rail and rail trails will be reviewed with County staff prior to digital conversion of this feature on any map. Railroad rights-of-ways will be constructed by buffering from the centerline file to achieve a precise and consistent width. Line work will be "smoothed" after initial conversion keeping intact the basic geometry and precise width.
- q. The transportation network for WV Counties within this program is to be represented as road rights of ways that are constructed as polygons that are buffered to a consistent and mathematically correct width and are cut (ended as polygons) at district boundaries. Consistent width road rights of ways will generally be constructed by buffering from the centerline file to achieve a precise and consistent width. Line work will be "smoothed" after initial conversion keeping intact the basic geometry and precise width.
 - i. West Virginia Department of Transportation (WVDOT) documents will be used to the most reasonable extent to accurately map and digitize selected road rights of ways.
 - ii. Vendor will confer with County staff regarding the right of way width or configuration for roads prior to digital conversion in any area.
- r. Easements
 - i. All easements will be digitally converted as shown on the existing maps with imagery visible easements mapped and digitized per the actual location (much in the same manner as road rights of ways are handled).

s. Waterways

- i. Vendor will utilize the latest hydrographic layer data as a “base” for parcel compilation and conversion, much in the same manner that roads, railroads and visible occupation features from the orthoimagery will be used as a “base”. That is, parcel boundaries will be conflated to precisely “fit” the WV SAMB data as depicted on the existing tax maps. Vendor will consult with the County on how best to handle water features from the existing files that clearly do not “fit” the water as interpreted from the digital orthophotography.

t. Subdivisions

- i. All platted Subdivisions will be mapped by COGO. Subdivision boundaries will be developed as a “regional type” ArcGIS structure.

u. Cemeteries

- i. Cemeteries will be mapped as parcels referencing the responsible parties as described by the WVSAMB, 911 and tax CAMA databases and programs.

v. Attributes

- i. The tax parcel ID and PARID linkage between the new ArcGIS tax parcels (polygons with attributed centroid) and the IAS datafile will represent the primary means to populate each tax parcel polygon with the County desired attribute data. Each parcel shall be populated within the ArcGIS data with the following specific attribute fields:

- 1) Full parcel ID number (to be used for the IAS link)
- 2) PARID
- 3) Tax District
- 4) Map
- 5) Parcel
- 6) Lot number
- 7) Subdivision Name
- 8) Parent parcel if applicable
- 9) Source – survey or not as identified by color of lines on TIFF files provided
- 10) Initial of person editing
- 11) Date of change

- ii. Some portion of these fields for certain parcels will require additional research to fully populate all records and fields. These will be noted within Vendor’s errata reports and Atlas staff will work with County staff to resolve these instances of missing or conflicting data.

w. Annotation/Labeling

- i. Text annotation will be fully inclusive of all text from the existing maps. This will include parcel numbers, road names, parcel line dimensions, acreages, feature and place names, etc. Text placement must follow basic and accepted rules of traditional cartography such as angle of rotation, read from left to right, line offset, size to map scale, font and line style for uniqueness, not to cross or obscure other features, frequency of placement, etc. Many of these criteria are spelled out within the previously referenced State specifications. The existing tax map scales within most Counties include scales of both 1” =400’ and 1” =100’ maps. The County will be well served to have the ability within the GIS data to change and choose scales for plotting, viewing, etc., depending upon the specific application at hand. Text must therefore be readable at multiple scales in given regions of similar scales. Vendor’s alternative may be to insert selected text within the

Geodatabase as an annotation feature class that is feature-linked. However, within an ArcGIS geodatabase format this can get quite involved with rules and overhead. Another alternative might be to select several most common scales for which text is easily read at similar scales. These text issues will be one of many topics that are extensively reviewed and discussed within the Pilot Area mapping and database design. Vendor's custom developed text placement "tools" and text entry rules will be demonstrated and discussed extensively in the Project Kickoff meetings as well as within the Pilot Area meetings to ensure that this critical task is being handled by Atlas to the full satisfaction and expectation of WV GIS Technical Center and County staff.

x. Training & Technical Support

- i. Client training by Vendor will be accomplished throughout the entire duration of the contract. Three types of training are accomplished:
 - 1) Vendor's technical staff to spend considerable time on-site at the County due to the nature of a tax parcel mapping, digital conversion project. Significant on-site time is required to retrieve and research documents and databases, attend Project Kickoff, Pilot Area and Project wrap-up meetings, etc. Vendor's staff generally utilize these on-site visits as an opportunity to spend time with County staff with informal training sessions.
 - 2) One full week of on-site more formalized training will be accomplished by Vendor. This on-site training will be conducted by Vendor's project manager, Hays Lambert, PLS-GIS assisted by project production manager Tre Penegar and GIS analysts Joe Waple or Dan Hillegass. Vendor's technical staff have previously provided formal training sessions with ArcGIS products in a cadastral environment for numerous North Carolina, Georgia, Mississippi and West Virginia Counties that include all fifteen of the WV Counties that Vendor has completed and delivered since 2009.
- ii. Formal training sessions for WV County staff be divided into multiple separate sessions. The first will be conducted as a part of the Pilot project when we anticipate that some quantity of GIS tax parcel data will be implemented at the County. This session will be of an introductory level to get County staff functional and comfortable with ArcGIS technology, specifically for this project's digital tax parcel data. The second on-site formal training session is to be conducted in the mid stages of the project production schedule. The second formal session will concentrate on more advanced tax parcel maintenance procedures using the software tools provided by Vendor. The third session will involve customization of individual County GIS systems to include ArcGIS Geodatabase and/or ArcGIS Enterprise design and functionality.
- iii. Vendor will continue to provide GIS technical support for WV County staff well after total project completion and delivery. Vendor will continue to provide on-going GIS support for all of the GIS and mapping projects that our staff have completed, or have underway, as evidenced by the attached references of county projects for which we have previously provided digital mapping services.

y. Quality Control

- i. Vendor will incorporate Quality Control at strategic steps within the workflow. Digital operators will utilize a number of specially prepared programs to check for items such as feature coding, duplication of data, overshoots, undershoots, etc. as the data is captured. After initial capture, a separate ArcGIS operator will review each map file and run batch programs to check for data integrity, topological structure, proper attribution, overall cleanliness, etc. An on-line digital edit will be accomplished for each map to correct all data conflicts and problems shown by the ArcGIS QC and processing programs. This edit includes a complete edge match of all digital data on each map against all digital data on adjacent maps (and

- District to District) to ensure a clean and spatially continuous county-wide data set, without internal interruptions or mismatches along map file boundaries.
- ii. Vendor will use a library of interactive cadastral mapping ArcGIS tools to check, analyze, flag and/or correct digital line work and attributes “on-the-fly” as digital conversion is conducted. These Quality Control programs ensure that topologically structured files are developed, with precise mathematical intersects, without undue internal data points, and totally devoid of undershoots, gaps, overshoots, dangles, etc. These programs and GIS routines will be delivered to WV Counties within the scope of our services.
 - iii. Specific Quality control checks that are incorporated into our production flow include:
 - 1) Vendor will ensure that all adjacent map features are interactively edge matched as an integral part of the data capture.
 - 2) A separate QC step is accomplished for the “line work” and parcel number file developed in the preceding steps. This will be accomplished by a separate GIS operator who displays each data set against the orthophoto backdrop, and checks off that all line work is included against a raster image of original source documents. This QC check includes checking for digital continuity and “cleanliness” as well as ascertaining that the final line work is correctly positioned and curved lines are correctly splined, etc. This QC check also researches for parcel number link-ups to the tax parcel Integrated Assessment Systems database.
 - 3) Finished and QC checked line work files are processed for text annotation data entry along with the required feature attributes. Text annotation is to be controlled by the project digital database design. In close-fit areas, leader lines are to be utilized to enter text, as necessary. This text placement is to be accomplished to achieve a cartographically pleasing and correct map. Atlas has developed a number of programs to interactively place text, which set seed points at the center of lines, specific distances from lines, always reading left to right, etc. These will be used for initial text annotation entry. Operators will then relocate, resize, or leader line text in crowded or overwritten areas to achieve the final result of a cartographic presentation map. The errata file for each map will be used to “flag” problems, questions and exceptions to the project design. Parcel line legal/survey dimensions will be shown fully where they currently exist from the available source of existing tax maps.
 - 4) A separate QC is run against each file after text entry to check-off that all text has been correctly entered, is positioned correctly, is properly feature coded, etc. This QC check literally checks every piece of text and every attribute against the original source documents.
 - iv. Vendor’s GIS mappers and operators will use a standard procedure for errata reporting of issues and concerns. This involves first placing a “flag point” at the location of the parcel, the line, the address, or the point in the file which is problematic. This flag point is an attachment point to an attribute errata database that has two components:
 - 1) Standardized terms and data fields that are prepared to describe the most commonly encountered issues. This is an assemblage of predesigned descriptors that all GIS and mapping staff have familiarity with and use on a regular basis. The standardization of the most common issues helps to clearly convey problems and provides an efficient point and click method to attribute the flag point. One goal of standardizing the descriptors is to make it easy for operators to develop flag points; thereby, giving them an incentive to fully populate a file with all issues encountered.
 - 2) A note field will be provided wherein the operator enters a narrative description for the flag point issue.

z. Maintenance Plan

- i. Vendor will deliver to WV GIS Technical Center and County staff the same set of “tools” to update and maintain the ArcGIS tax parcel database developed from this project that are used by Atlas staff in-house for the update task. This will include on-site training of County staff in the use of these custom software applications and programs.

aa. Map Book Creation

- i. Vendor will provide a map book feature that will permit County staff to easily print updated tax maps and submaps in the final format with the standard map legend, collar, etc. as required by the State of West Virginia tax map specifications.
- ii. Vendor will deliver a digital Map Book to include all maps (all scales). Each page (map) will be fully inclusive of all legend and surround information as per requirements spelled out in WV 189CSR3. The Map Book will be created as an ArcGIS application and will be interactively linked to the main Geodatabase such that as edits, splits and updates are saved to the Geodatabase, then these changes will be reflected fully within the appropriate page of the Map Book. The Map Book will be developed in such a manner that an operator need only display the appropriate page for direct printing to any selected format of full size (E: 36” wide), Tabloid (11”x17” printer), etc. All line styles and symbols will be created as per WV 189CRS3 such that plots or copies in either color or black & white will have individual features that are uniquely distinguishable.

bb. Data Management Plan

- i. Vendor will develop a schedule for completion of all tasks after notification to proceed for each individual County project within this program
- ii. Vendor will assume full responsibility for maintaining parcel splits and keeping the tax parcel data current for the full duration of the contract period.

cc. Other Data features within tax maps required for conversion

- i. The following data features are to be included on WV County tax maps by Vendor and are to be logically included within the ArcGIS and AutoCAD database designs and converted by Vendor as an integral part of the project: Map and submap grid reference layer, Tax district boundary layer, Consistent geospatial representation for parcels without exact boundaries as long as the parcel boundary has a parent parcel reference (floating splits), Clean right of way, easement, and waterway boundaries drawn as polygons cut at district boundaries.

dd. ArcGIS Database Design for Geodatabase format

- i. Vendor will prepare a custom detailed database design specifically for the needs of each WV County within this program using these existing documents as an initial draft. Digital data will be structured such that all unique features will be uniquely coded. Vendor’s database design will incorporate appropriate polygon, line, point, and annotation feature classes for tax parcel data. Data capture techniques will be used to ensure that road name text is separately coded from parcel numbers and parcel line dimensions, etc. Road rights-of-way will feature coded as both property line and right-of-way

lines. Select property lines may also be jurisdictional lines and need to be extracted and separately feature coded, etc. Proper feature coding of all data is crucial for the long-term operation of the data sets within GIS to have the flexibility to accomplish the many queries, sorts and applications that will likely be asked of the data set.

ee. Timelines

- i. A detailed project schedule will be developed by Vendor for each County project of this program to be approved by WVU GIS Technical center staff.

ff. Progress Reports

- i. Vendor will develop and host a secure project management website that will include reports, ArcGIS data, errata reports, an ftp site for posting datasets, correspondence, etc.

gg. Warranties & Fixes

- i. The contract between Atlas Geographic Data and WV GIS Technical Center for this program will include the following language in regard to Warranties and Fixes:
- ii. For a period of not less than eighteen (18) months after the County's acceptance of the final system deliverable, Atlas at no additional cost to the County, shall correct any and all errors and flaws (those resulting from poor methodology, processing errors, data corruption, deficient QA/QC, etc. in the data and software applications (developed by Atlas), within (30) days after Atlas is made aware of the issue; provided, however, that upon request of the County, Atlas shall correct any error reasonably deemed important to the County's continued use of the software applications (developed by Atlas) within ten (10) days after the County has notified Atlas in writing of the error. Atlas shall provide warranties in writing to clarify specific terms for the contract preparation.

hh. Subcontractors

- i. Vendor will provide all required services

VI. Pricing

- ii. Mapping Activity Costs: A per parcel conversion and mapping rate not to exceed \$2.48 per parcel for all the deliverables and responsibilities listed above for digital tax mapping. The per parcel conversion breakdown and maximum price schedule are as follows:
 - i. \$1.50 per parcel re-mapped
 - ii. \$2.48 per full tax map parcel conversion
 - iii. Administrative Costs: Administrative costs are not to exceed \$0.25 per parcel or 10% of the total mapping activity cost. Administrative costs shall include:
 - A. Project management
 - B. Mapping activity research, pilot project setup, database design, etc.
 - C. Technical support and consultations
 - D. Onsite start-up and closing coordination and review meetings
 - E. On-site or webinar training
 - F. Data delivery submissions to WV Property Tax Division
- b. Cost Reimbursements: Cost reimbursements are paid after project deliverables are approved by the state and county

- c. Maintenance Costs: Continual maintenance costs are the responsibility of the county assessor's office after submitting the deliverables and project close-out meeting

TAX PARCELS				
County	Number of Parcels	Cost per Parcel	Administrative Fee per Parcel (10%)	Cost
Braxton	18,145	\$2.48	\$0.25	\$49,536
Calhoun	11,666	\$2.48	\$0.25	\$31,848
Logan	30,000	\$2.48	\$0.25	\$81,900
McDowell	32,481	\$2.48	\$0.25	\$88,673
Roane	15,984	\$2.48	\$0.25	\$43,636
Clay (Henry District)	4,000	\$2.48	\$0.25	\$10,920
Miscellaneous Parcel Mapping/Re-Mapping	24,088	\$2.48	\$0.25	\$65,759
TOTAL COST	136,364			\$372,272

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

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

DEFINITIONS:

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

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Atlas Geographic Data, Inc.

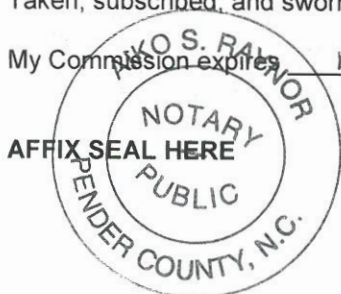
Authorized Signature: Larry E. Kutzlink Date: 12-11-2018

State of North Carolina

County of New Hanover, to-wit:

Taken, subscribed, and sworn to before me this 11 day of December, 2018.

My Commission expires 10 April, 2022.



NOTARY PUBLIC O. S. Raynor

**ADDITIONAL REMARKS SCHEDULE**

AGENCY James E. Moore Insurance Agency, Inc.		NAMED INSURED Atlas Geographic Data, Inc 657 Tanbridge Rd. Wilmington, NC 28405	
POLICY NUMBER SEE PAGE 1			
CARRIER SEE PAGE 1	NAIC CODE SEE P 1	EFFECTIVE DATE: SEE PAGE 1	

ADDITIONAL REMARKS

**THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance**

Description of Operations/Locations/Vehicles:

All policies, with the exception of the professional liability policy, provide a 30 day notice of cancellation.

Axis Insurance, the Professional Liability carrier, will not provide a waiver of subrogation nor the 30 day notice of cancellation.