

This addendum is added to and is to be considered part of the subject contract.

**ADDENDUM 1 TO
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH, INC.
RESULTING FROM SOLICITATION NO. 0900000417**

This Addendum 1 (“Addendum”) is an Amendment to the Contract awarded to Spatial Data Research, Inc. in connection with Solicitation 0900000417 (“Solicitation”) and is effective June 8, 2020 (“Effective Date”).

Recitals

Whereas, the State issued a Solicitation for proposals to provide for creating and maintaining GIS data that will be used to provide location and routing data for Next Generation 9-1-1 services in Oklahoma, as more particularly described in the Solicitation;

Whereas, Spatial Data Research, Inc. submitted a proposal which contained various other Contract Documents; and

Whereas, the State and Spatial Data Research, Inc. have negotiated the final terms under Spatial Data Research, Inc. will perform the Services under the Contract.

Now, therefore, in consideration of the foregoing and the mutual promises set forth herein, the receipt and sufficiency of which are hereby acknowledged the parties agree as follows:

1. Addendum Purpose.

This Addendum memorializes the agreement of the parties with respect to negotiated terms of the Contract that is being awarded to Spatial Data Research, Inc. as of even date with execution of this Addendum. The parties agree that Supplier has not yet begun performance of work contemplated by the Solicitation.

2. Negotiated Documents of the Contract.

2.1. The parties have negotiated certain terms of the Contract as follows:

- i. Incorporation of the Software License Agreement as contained in Attachment A to this Addendum;
- ii. Incorporation of the Professional Services Contract as contained in Attachment B to this Addendum;
- iii. Incorporation of the Statement of Work as contained in Attachment C to this Addendum;
- iv. Incorporation of the 9-1-1 and GIS Data Assessment as contained in Attachment D to this Addendum;
- v. Incorporation of the Maintenance Services Agreement as contained in Attachment E to this Addendum;
- vi. Incorporation of the SDR Annual Software Maintenance & Support Options as contained in Attachment F to this Addendum;
- vii. Incorporation of the Proposed Schedule Sample as contained in Attachment G to this Addendum; and
- viii. Incorporation of the Hosting Agreement as contained in Attachment H to this Addendum.

2.2. Accordingly, any reference to a Contract Document refers to such Contract Document as it may have been amended. If and to the extent any provision is in multiple documents and addresses the same or substantially the same subject matter but does not create an actual conflict, the more recent provision is deemed to supersede earlier versions.

3. Spatial Data Research, Inc. affirmatively acknowledges it takes no exception to the Solicitation and that it will not ask the State or any Customer to execute additional documents not listed above in connection with this Contract.

State of Oklahoma

By: D. Jerry Moore

Name: D. Jerry Moore

Title: Chief Information Officer

Date: 6/23/2020

Spatial Data Research, Inc.

By: Susan M. Cunningham

Name: Susan M. Cunningham

Title: President

Date: June 19, 2020



Spatial Data Research (SDR) *Software License Agreement*

Attachment A to Addendum 1 to STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH RESULTING FROM STATE-WIDE NUMBER SW 1177

The End User License Agreement is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research, or discussed by the parties. The parties agree to use this End User License Agreement or a document substantially similar in the form of this End User License Agreement.

The License Agreement (“License or AddressIt”), is between the State of Oklahoma, by and through the Office of Management and Enterprise Services (“State”) and Spatial Data Research (“Licensor”) and is a Contract Document stemming from Oklahoma State-Wide Number 1177 (“SW 1177”). Licensee shall mean any Authorized User. Any terms not defined herein, shall be defined in SW 1177.

1. License Grant

- 1.1. **Software License.** The licensee is defined as the individual or company using the software (AddressIt). Spatial Data Research hereby grants the licensee a nonexclusive license authorizing the licensee to use the software on one operating system at a time.
- 1.2. **No Other Rights.** Spatial Data Research reserves for itself all other rights and interest not explicitly granted under this agreement.
- 1.3. **Software.** “Software” refers to AddressIt.
- 1.4. **Termination.** The Software License Agreement will terminate with notification in the case that the licensee counterfeits, or otherwise fabricates, a software serial number in order to perform multiple installations of the software on multiple computers.

2. Restricted Uses. Failure to comply with any of the following terms will be considered a material breach of this agreement. The licensee may not:

- 2.1. distribute, rent, sub-license, or otherwise make available to others the software or documentation or copies thereof, except as expressly permitted in this software license agreement
- 2.2. modify, alter, or create any derivative works of the software
- 2.3. reverse engineer, decompile, decode, decrypt, disassemble, translate, or derive any source code from the software
- 2.4. remove, alter, or obscure any copyright, trademark, or other proprietary rights notices in the software
- 2.5. use the software without first obtaining the software serial number with Spatial Data Research.

3. Permitted Uses. The licensee may install and use the software solely for internal administrative and business purposes.

Software Licensing

4. **US Government Restricted Rights.** Use, duplication or disclosure by the United States Government is subject to restrictions as set forth under DFARS 252.227-7013 or in FARS 52.227-19 Commercial Computer Software - Restricted Rights
5. **Limited Warranty.** These software tools are warranted to be functional on the operating system and in the configuration in which they were installed by SDR and shown to be functional at the time of software installation and training.
6. **Limited Liability.** Upon installation of licensed software and data supplied by and/or accepted by client, the licensee is responsible for the continuing accuracy and completeness of GIS data used in conjunction with software supplied by the licensor"

Notwithstanding anything to the contrary in this license, the foregoing provisions of this Section shall not apply to or limit damages, expenses, costs, actions, claims, and liabilities arising from or related to property damage, bodily injury or death caused by Licensor; the Licensor's indemnity obligations under this license; Licensor's confidentiality obligations under this license; the bad faith, gross negligence or intentional misconduct of the Licensor or its employees, agents and subcontractors; or other acts for which applicable law does not allow exemption from liability.

7. **Execution of Software Agreement.** This license agreement will be deemed to have been executed upon the licensee's successful installation and subsequent registration of the software.
8. **Acceptance.** All terms and conditions of this license agreement will be deemed to be accepted by the licensee upon the license agreement's execution.
9. **Term.** The term of this agreement has the same term as stipulated in SW1177.-
10. **Termination.** This license will terminate if the licensee fails to materially comply with any of its terms and conditions and proper written notice of the compliance failure has been provided to licensee and licensee fails to cure non-compliance within 30 days of said notice. Notwithstanding anything contained herein, licensee is to be provided all of its data in a useable format that was delivered to licensor. The licensee may voluntarily terminate the license at any time by destroying all copies of the software and software documentation.
11. **Authorized Transfer.** In the case of an authorized transfer, the transferee agrees to be bound by the terms and conditions established by this license agreement upon its execution.
12. **Support.** Software support is provided for twelve months following purchase of this software license as outlined in the accompanying software support and maintenance agreement. Following this twelve-month period, software support is available for purchase in additional twelve-month increments.
13. **Updates and Maintenance Services.** Updates and Maintenance services are provided for twelve months following purchase of this software license within the limits and constraints described in the accompanying Software and Maintenance Services Agreement. Following this twelve-month period, software support is available for purchase in additional twelve-month increments.

Intellectual Property. Spatial Data Research will retain exclusive interest in and ownership of its intellectual property rights in and to the software, unless the intellectual property was developed specifically for the licensee and expressly reserves all rights not expressly granted under this agreement.



Attachment B to
Addendum 1 to
**STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177
PROFESSIONAL SERVICES CONTRACT**

Between

Oklahoma 9-1-1 Client Name
Street Address
City, State, Zip Code

Spatial Data Research, Inc.
PO Box 684
Olathe, KS 66051

ATTN: Contact Name
Contact Title
e-mail address

ATTN: Susan Cunningham
President

scunningham@sdrmaps.com

The Professional Services Contract is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research. or discussed by the parties. The parties agree to use this Professional Services Contract or a document substantially similar in the form of this Professional Services Contract.

Project: This Contract for Professional Services ("Contract") is entered into between Spatial Data Research, Inc., located at P.O. Box 684, Olathe, KS 66051 ("SDR"), and Sample County, Oklahoma ("Client") and is a Contract Document stemming from SW 1177. SDR shall provide the services for the Project as described in accordance with this Contract and the attached Schedule, being Attachment G of the Addendum.

For SDR:

For Sample County:

Signature

Susan M. Cunningham
President
Spatial Data Research, Inc.

[Authorized Signature]

[Print Name and Title]

Effective Date

Term, Modification & Extra Work

This Contract becomes effective on the last date of signature indicated on the face hereof. This Contract shall control all transactions by and between the parties within the scope of this Contract, unless and until the parties provide otherwise in a written document signed by both parties. The obligation of SDR to provide deliverables specified in this Contract shall terminate upon Final Delivery and acceptance by Client. After Final Delivery and payment in full for all deliverables under this Contract, this Contract may be terminated and expires on the date specified. If no expiration date is specified, this Contract will continue in effect until canceled by either party upon thirty (30) days written notice.

No modification of this Contract (including any additional or different terms of Client) shall be binding upon either party unless agreed to in writing.

Obligations of SDR

SDR shall render the services and deliver the products as it is obligated under the Schedule(s) attached to this Contract. SDR shall generate invoices according to the Schedule(s) attached to this Contract.

Project Planning & Governance

SDR will utilize project planning and administration methodologies including work forecasting, determining appropriate resource assignment and level of effort requirements, preparation of contingency plans, establishing repeatable processes and management of all relevant aspects within a project.

Obligations of Client

The Client shall provide all information as reasonably required by the attached Schedule(s) including information that may come into the possession of Client that has relevance in Client's determination to the accuracy and/or completeness of SDR's services. Client shall pay all invoices upon 45 days from invoice date. Client acknowledges that software, data, maps and other products of work done by SDR may be proprietary in which case the Client acknowledges that the implied license to make use of and benefit from such items does not extend to third parties. Client shall appoint a representative to work with SDR who has the authority to make timely decisions related to the project.

Project Delay/Demobilization/Remobilization

The Client acknowledges that the delivery of services, as provided by SDR, is dependent on cooperation of the Parties. This cooperation requires an exchange of information between the Parties including, but not limited to, databases, maps, telephone databases, and road information. This cooperation includes project intermediate steps, such as the approval of project plans, maps, reports, and databases. SDR is responsible for apprising Client of its responsibilities that pertain to the content, work output, schedules, and maintenance of the budget.

In the event that there is a delay of delivery of critical information, work or other deliverable service caused solely by Client that exceeds 15 business days, SDR will send a Notice of

Project Delay to Client. Upon receipt of a Notice of Project Delay, Client has 15 business days to respond to the situation noted by SDR. Should Client fail to respond to the situation causing the Project Delay, SDR will issue a Project Demobilization Notice and breach of agreement.

Invoices and Payment

SDR will invoice Client for services provided. Invoices will be issued monthly upon completion of services at the rates and fees specified. Client agrees to pay for all services provided by SDR under this Contract at the rates and fees specified. Invoices will be sent to the Client's preference of the address specified on the face of this Contract, via email. Terms are net cash payable within forty-five (45) days of the invoice date. Failure to make payment of the amounts owing under this Contract when due shall result, at the option of SDR, in the suspension of performance by SDR until such past due amounts are paid in full.

SDR will invoice on a monthly basis for the services completed for the project. Additionally, SDR will invoice the final project payment upon completion of the project and acceptance by Client of services provided under this Contract. This will be due within forty-five (45) days. If any Software, Hardware, Training and Maintenance is ordered under this agreement it will be invoiced upon being delivered and accepted by Client and is due within forty-five (45) days of invoice date.

Notices

Notices are required to be given in writing and shall either be hand delivered, sent by mail, or transmitted by telefax. Notices shall be effective upon verified receipt. All notices shall be sent to the address or fax phone number on the signature page of this Contract. Either party may change their address for receipt of notices by notice in writing to the other party.

Default – LEFT INTENTIONALLY BLANK.

Indemnity

Licensor shall fully indemnify and hold harmless Licensee from and against all liabilities, claims, suits or damages (including, but not limited to, legal fees, costs, judgments and reasonable expenses incurred) resulting from a third-party claim(s). SDR hereby indemnifies the Client, its officers, agents, and employees, against any and all claims for injury to persons or damage to property arising out of performance of this Contract and which results from the neglect from the negligent or deliberate acts of SDR's officers, agents, or employees. The remedies stated herein are exclusive and in lieu of all other remedies.

The defense shall be coordinated by licensor with the Office of the Attorney General when Oklahoma state agencies are named defendants in any lawsuit and licensor may not agree to any settlement without first obtaining the concurrence from the office of the attorney general. Licensor and the licensee agree to furnish timely written notice to each other of any such claim.

Warranty

SDR warrants that all service under this Contract shall be performed in accordance with applicable professional standards recognized in the trade. Client recognizes that all services, products and materials created by SDR are subject to a search and utilization of existing records and references provided by Client. There is no assurance that the record information as provided by Client is accurate and it is the Client's responsibility to determine the quality and fitness for purpose of the materials provided to SDR. SDR warrants that it will make modification and changes to Client's provided database(s) and produce products as indicated by the attached Description of Services (as found in Attachments A, C, D, E, F of the Addendum). SDR will provide to Client materials to assess the quality of work performed by SDR, and Client will have thirty (30) days to determine whether the products created have been constructed in accordance with the terms described in the attached Description of Services. If within the Client's thirty (30) day examination period, should errors or omissions caused by SDR in the resultant products be found, Client may require SDR's re-performance of services for the affected portions of the products. SDR makes no other warranties, express or implied, with respect to any services or goods provided pursuant to this Contract, including but not limited to any implied warranty of merchantability or fitness for a particular purpose. The warranties stated herein are exclusive and in lieu of all other warranties.

Additional Warranty, State of Oklahoma NG9-1-1

In addition to any representation, warranty and covenant set out elsewhere in this contract or in the referenced Statement of Work (SOW), Spatial Data Research, Inc. warrants that the deliverables created, developed or improved under the Statement of Work will meet and comply with the specifications set forth by the State of Oklahoma 9-1-1 Management Authority for NG9-1-1 and Addressing and will be appropriate for the purposes described in the documentation adopted, as evidenced by a zero-error score using the validation toolset made available by the 9-1-1 Authority. Deliverables not subject to validation using the NG9-1-1 GIS toolset made available by the State of Oklahoma 9-1-1 Authority are warranted by Spatial Data Research, Inc. as described in the Warranty section of this contract.

Notwithstanding anything to the contrary in this license, the foregoing provisions of this Section shall not apply to or limit damages, expenses, costs, actions, claims, and liabilities arising from or related to property damage, bodily injury or death caused by Licensor; the Licensor's indemnity obligations under this license; Licensor's confidentiality obligations under this license; the bad faith, gross negligence or intentional misconduct of the Licensor or its employees, agents and subcontractors; or other acts for which applicable law does not allow exemption from liability.

Severability & Waiver

If any provision of this Contract is or becomes void or unenforceable by law, the other provisions shall remain valid and enforceable. No course of dealing or failure by SDR to strictly enforce any term, right, or condition of this Contract shall be construed as a waiver of such term, right, or condition.

Force Majeure

Neither party to this Contract shall be considered to be in default of its obligations under this Contract to the extent that failure to perform any such obligation arises from causes beyond the control and without the fault or negligence of the affected party.

Assignment

Neither party shall make any assignment of this Contract or monies due or to become due hereunder without the prior written permission of the other party. However, nothing in here will prohibit SDR from assigning monies due or to become due to a bank, trust company, or other accredited financial institution, in which event a copy of each such assignment will be filed with the Client.

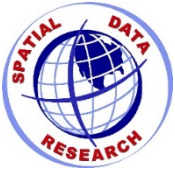
Data Ownership, Proprietary Information & Software Licensing

Proprietary and Confidential information disclosed by either party to the other for the purposes of this Contract, which is in tangible form and is clearly marked as such, shall be protected by the recipient, unless allowed by law, in the same manner and to the same degree that the recipient protects its own proprietary and confidential information, except that each party may use or disclose information that is or becomes publicly available, is already lawfully in its possession, is independently developed by it, or is lawfully obtained from third parties.

Information shall not be considered Confidential Information to the extent such information (i) is or becomes generally known or available to the public through no fault of the Client; (ii) was in the Client's possession before receipt from the [Vendor]; (iii) is lawfully obtained from a third party who has the right to make such disclosure; or (iv) has been independently developed by Client without reference to any Confidential Information.

By virtue of the Agreement, Client may be exposed to or be provided with certain confidential and proprietary information of the SDR. SDR shall clearly mark any such information as confidential. ("Confidential Information"). Client is a state agency and subject to the Oklahoma Open Records Act and SDR acknowledges information marked Confidential Information will be disclosed to the extent permitted under Client's Open Records Act and in accordance with this section. Client agrees to use the same degree of care that each such party uses to protect its own confidential information, but in no event less than a reasonable amount of care. Client will not use SDR Confidential Information for purposes other than those necessary to directly further the purposes of the Agreement.

Statement of Work, being Attachment C of the Addendum, included below as an Attachment to Agreement.



**Attachment C to
Addendum 1 to
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177**

The Statement of Work is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research, or discussed by the parties. The parties agree to use this Statement of Work or a document substantially similar in the form of this Statement of Work.

**Statement of Work
*NG9-1-1 GIS and 9-1-1 Database Improvement for (Client/Agency Name)***

Project Background

ABC County 9-1-1 has analyzed its GIS and 9-1-1 Databases and has identified errors and inconsistencies that present potential risks to emergency location. Databases considered include GIS address points and road centerlines, other GIS layers such as Emergency Service Zones, the CenturyLink Master Street Addressing Guide (MSAG) and the CAD MSAG used in the Caliber Public Safety CAD and Mapping system. GIS sources include GIS data in use currently with 9-1-1/CAD and newer, 2017-vintage GIS data developed by the Assessor's office using recently flown Pictometry imagery.

ABC County 9-1-1 and the local governments in the jurisdiction understand that any or all of the following exist in the county and its cities:

1. Out-of-Sequence addresses (i.e. 1100 – 1135 – **1217** – 1195 - 1350)
2. Addresses with bad parity (even/odd discrepancies such as 201, 207, **210**, 215 all on the same side of the street)
3. Out of range addresses: (such as 1201 at the dead end of the 1100 block)
4. Addresses with the incorrect road name: (a structure on the corner of CR 10 & Highway B that has the appropriate house number for CR 10 but uses Highway B as a road name; or any house assigned a road name to an inaccessible or nonexistent road)
5. Roads with incorrect (non-grid centric) ranges: A road segment that by the grid should be ranged 21000 – 21999 but instead is ranged 23000 – 23999. Houses on the road may have appropriate addresses for the current range, but the current range is incorrect)
6. Roads with illogical ranges in incorporated areas – (i.e. the 300 block between 5th and 6th St)
7. Address points placed on properties where no development has occurred.
8. Homes in cities that are built on more than one lot (i.e. 101-103-105) that use one address (i.e. 101) in the city utility records but another (i.e. 103) for mail delivery and 9-1-1.

Given the potential for incorrect addresses to result in a failure-to-locate situation, or in incorrect location during a crisis, ABC County 9-1-1 requests deliverables that will ensure that:

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1. Every given address, whether it is correct or problematic or accurate as is, is plottable in the county's 9-1-1 system.
2. Problem addresses are identified in the GIS with flag codes noting specific issues. The responsible entities can then make decisions over time about change/correction while being assured that in the data delivered at project's end, the address is plottable as is.
3. GIS addressing sources are synchronized (road names in roads match road names in address points)
4. GIS data is compliant with NG9-1-1 requirements
5. CenturyTel and CAD MSAGs are synchronized with the GIS.
6. Project is approached as a turn-key project where the vendor is responsible for all work to create the final deliverables.

Deliverables:

1. GIS Layers:
 - a. Road Centerlines –
 - Synchronized with address points
 - Containing road names & ranges that allow every GIS address points to be plotted to current location.
 - Formatted for NG9-1-1 Standard NENA-STA-006.1-2018
 - b. Address Points –
 - Synchronized with road centerlines
 - Placed on actual structure location
 - Flagged with error code if applicable
 - Formatted for NG9-1-1 Standard NENA-STA-006.1-2018
 - c. Emergency Service Zones (ESZs) -
 - Updated from current data to reflect boundary changes provided by ABC County 9-1-1
 - d. Addressing Grid
 - Quadrant-based
 - Section-line based
 - Reflecting overall county addressing plan
2. GIS-Based MSAG –
 - Master Street Guide derived from the GIS and used as control document for required MSAG updates
3. 9-1-1 Databases/MSAGs
 - a. CenturyLink MSAG
 - Updated via Add/Change/Delete process or Special Project to match the GIS-based MSAG
 - b. Caliber Public Safety CAD MSAG
 - Updated via spreadsheet or Caliber-specified process to match the GIS-based MSAG. (May contain additional data not in CenturyLink MSAG)

Project Management and Project Initiation/Kick-Off

After contract award and upon finalization of project contract, SDR will schedule an on-site meeting in Clinton with ABC County 9-1-1 and other project stakeholders to review the project timeline, methodology and deliverables. SDR will provide a project contact matrix as well as escalation contacts. ABC County will appoint a project liaison who will function as SDR's primary point of contact during the project. A draft project schedule will be presented at this meeting, with a final schedule to follow within one week of on-site project kick-off.

Topics of discussion at the kick-off meeting include:

1. Development and changes during the life of the project – how will new addresses, roads and road name changes be transmitted to SDR during the project so that data stays current while it is being updated and corrected by SDR?
2. Who has the authority to make a decision on the correct name of a specific road if GIS sources do not agree?
3. Establishing contacts at ABC County 9-1-1 and Caliber Public Safety that can assist with an understanding of how the CAD MSAG can be changed – one by one changes within the CAD software vs. a spreadsheet provided with all changes highlighted.
4. Establishing contacts with CenturyLink MSAG personnel to discuss the best way of making large-scale changes to the MSAG (on-line MSAG portal, individual e-mailed changes, project with all changes submitted on a spreadsheet)
5. Escalation contacts at SDR and at ABC County 9-1-1 for technical, project management and invoicing/payment issues.
6. Detail of any client responsibilities such as providing on-site meeting places, providing decisions on road naming and other questions in a timely manner, etc.
7. Discussion of known problem areas – client's input on specific roads, sections of roads, or neighborhoods where addressing issues are known to exist.

Proposed Methodology

1. Data Acquisition & Analysis
 - a. SDR will request new copies of all GIS and MSAG data and will verify that each item is the most current available.
 - b. SDR will create a data matrix to track each dataset. The matrix will include the name of the data source (i.e. County Assessor), number of features, data format, etc.
 - c. SDR will analyze the GIS data using tools we have developed for this process. These tools will mark the following issues in the GIS data:
 - i. Address points with names that do not exactly match the GIS road names
 - ii. Address points with addresses that do not fall within the road ranges
 - iii. Road segments with missing ranges
 - iv. Road segments with ranges that overlap other segments
 - v. Road segments that are missing ESN or Community designations
 - vi. Road segments with reversed direction – road is drawn in the opposite direction of low to high addressing. Correct anomalies – roads drawn in backward where the addressing direction is correct and follows the grid.
 - d. SDR will create a road name matrix utilizing the Address Points, Road Centerlines, CAD MSAG and CenturyLink MSAG. SDR will organize the matrix to list like-sounding roads together to enable more efficient analysis.
 - e. SDR will prepare PDF maps showing named county roads and highways, section lines, corporate boundaries, county boundary and ESZs (Fire/Law/EMS). These maps will be delivered to ABC County 9-1-1 by e-mail for correction/approval. Corrections should be made on printed copies of the map or on provided GIS layers and returned to SDR. These maps will be review quality, not production quality.

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- f. SDR will create a community boundary to reflect the 9-1-1 MSAG (CenturyLink) communities in use by ABC County 9-1-1.
- g. SDR will create the addressing grid using the PLSS (survey sections) and the quadrant-style grid addressing scheme in place in the county. Assure that grid lines follow addressing direction in each quadrant and add address range attribution to each grid line.
- h. SDR will back up all addressing information within each data layer so that a backup of the original Assessor-designated address, road name and address range exists for each road centerline segment (represented by one record in the GIS table) and address point.

2. Data Improvement

- a. **Road Names:** Resolve road name inconsistencies between GIS address points and GIS centerlines so that every address point is accessed from a road with the same name – spelling, abbreviations, directional and street types. Present questions to ABC County E9-1-1 liaison as needed for decisions on correct name where multiple name variants exist.
- b. **Overlaps:** Resolve overlapping road centerline address ranges so that no overlaps exist on any single road.
- c. **Out-of-Range:** Resolve out of range addresses where the error is caused by an inaccurate or missing address range.
- d. **Divided Highways:** Redraw divided highways (such as MO 13) so that individual divided sections are represented in the GIS as per industry standard. Range segments appropriately. SDR will keep the existing single centerlines as a backup in case there are programs in use that require the single centerlines as currently drawn.
- e. **ESZs:** Make any improvements required to the Emergency Service Zone (ESZ) boundaries using mark-ups provided by ABC County 9-1-1.
- f. **NG9-1-1 Fields:** Using NENA standard documentation, add fields to the centerline and address point data that are required by NG9-1-1 and populate
- g. **CAD Fields:** Using documentation from Caliber Public Safety, add fields to the centerlines and address point data that are required by CAD and populate.
- h. **Road Splits:** With corrected ESZs and Community boundaries (MSAG boundaries), split road centerlines at all MSAG boundaries. Range each segment appropriately according to its length and position in the grid network. At this point, ranges should be actual grid ranges as per the addressing plan. Use the addressing grid for reference as splits and ranging decisions are made.
- i. **Flag Errors:** Using a visual analysis method, scan address points to check addressing logic on each road. Flag any addresses that have sequence, logic or parity (even/odd) issues or which are assigned a road name that is not logical for the location of the structure and/or its access point. If an entire road segment or road has been assigned illogical addressing as per the grid, flag the road segment and the address points.
- j. **Point Placement:** During the scan process, move any point that is clearly not placed properly as per the 2017 imagery.
- k. **Flag Suspect Points:** During the scan process, flag any point that appears to be on an undeveloped parcel. Sometimes, Assessors or other entities assign addresses to parcels with no structures for other reasons but these points typically should not appear in a 9-1-1 system.
- l. **Add New Points:** During the scan process, add points for structures that are residences, businesses or other addressed structures that are not represented by a point. If the situs address is given in the parcel, add the address information. If it is not, mark the address as “0” and present to ABC County 9-1-1 for resolution.

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- m. **Flag Road Name Logic Issues:** During the scan process, flag inconsistent road names – road name changes along the course of the road at illogical locations.
 - n. **Adjustments for Anomalies:** Based on addressing anomalies identified, adjust address ranges so that address points will plot in the 9-1-1 mapping system at their true location with their non-standard address. This process will require additional road segmentation so that adjusting the range for the segment or block where the structure exists doesn't throw off the geo-location of other structures on the block. This process may also include:
 - i. Renaming or making a slight adjustment to the road name of a small segment of a given road to accommodate a single address
 - ii. Creating a new road segment beside or on top of an existing road segment to accommodate the address anomaly.
 - iii. Creating a road segment for a road that isn't developed. This sometimes happens when a home is addressed off of a platted road that was never developed and currently has driveway access to a different road.
 - iv. Not correcting the address range of a road segment that is not properly addressed as per the addressing grid but maintain the error flag code for client action later.
3. Quality Assurance – Simulations
- a. Extract complete address list from corrected address point data and geo-locate addresses to the centerlines to create an addressing layer showing how each address will plot against the centerlines.
 - b. Resolve errors – points that did not plot.
 - c. Visually inspect point placement to identify points that place but do not place close to true location.
 - d. Make corrections
4. MSAG and 9-1-1 Database
- a. Using corrected ESZ boundaries and Community Boundaries, code all roads with required boundary information (ESN and ZIP code community data for right and left sides of the road)
 - b. Create CenturyLink style MSAG from the GIS centerline tabular data. The resulting MSAG is the standard to which existing MSAGs will be corrected.
 - c. Using SDR's custom tools, compare the CenturyLink MSAG to the GIS MSAG and create an add/change/delete database which will be used to correct and update the CenturyLink MSAG so that it is synchronized with the GIS MSAG.
 - d. Initiate project with CenturyLink to make corrections and monitor the correction process with CenturyLink – answering questions and resolving load issues as they arise.
 - e. Using SDR's custom tools, compare the GIS MSAG with the CAD MSAG and create an add/change/delete database which will be used to correct and update the Caliber Public Safety Mapping MSAG so that it is synchronized with the GIS MSAG.
 - f. Initiate project with Caliber Public Safety to make corrections and monitor progress until all changes are made.
5. Additional Data Acquisition
- a. Acquire publicly available data from sources such as Conservation Department, DOT, Corps of Engineers, SEMA as available to integrate into mapping.
 - b. Acquire data from local sources, as available, such as fire hydrant locations.
 - c. Create or improve GIS layers from acquired data.
 - d. Integrate layers into final GIS dataset.
6. Process changes since project launch

Contract Attachments/Addendums

- a. Procure new centerlines and address points from Assessor and/or Addressor along with supporting change records
- b. Compare new data with old and extract change list
- c. Update new data with changes.

7. Data Delivery

Visit client on-site to deliver data and ensure it is set up so that it can be maintained going forward as a single active dataset that complies with the needs to Assessment and 9-1-1. Provide a detailed training on the content of the new GIS data layers, specifically which fields are required by CAD and must be maintained even though they are not utilized for addressing or by the Assessor.

Tasks and Deliverables

Project Task	Description	Deliverable
Project Management	Project Initiation, Kick-off, Administration, Invoicing, Reporting, Status	Monthly Status reports & invoices, Project Contact Matrix, Escalation Contacts, Final Project Report
Data Set Up & Analysis	Intensive analysis of GIS to identify, flag and describe all issues that could affect accurate 9-1-1 call location	Address point flags, Road Centerline Flags, Data Matrix (1a, 1b)
GIS Data Correction	Correction and improvement of key GIS layers so that all addresses are plottable and all remaining issues are coded and flagged.	Address Points, Road Centerlines & ESZs updated with NG9-1-1 attribution, improved to project specifications & with all addressing errors flagged and coded (1a, 1b, 1c)
GIS Layer Creation	Create any GIS layers indicated in project specifications including Addressing Grid	GIS Addressing Grid (1d)
GIS-Based MSAG	Produce NENA-Standard MSAG from corrected GIS layers and use it as a standard for CAD & CenturyLink MSAG corrections	GIS-Based MSAG (2)
GIS to MSAG Synchronization	Use the GIS-Based MSAG and compare to the 9-1-1/CAD MSAGs. Make changes to the 9-1-1/CAD MSAGs so they synchronize with the GIS-Based	Updated CenturyLink MSAG/ Updated Caliber CAD MSAG (3a, 3b)

Contract Attachments/Addendums

	MSAG, which synchronizes with the GIS.	
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Price Table

Project Management, Consulting and Oversight	\$0.00
Technical/GIS Tasks	\$0.00
MSAG Updates (CAD/9-1-1)	\$0.00
Travel (Four on site meetings)	\$0.00
Total Project Pricing	\$0.00

Options Not Included in Contracted Services

The following activities represent options not included in the proposed contract and pricing. Optional activities may enhance the final product but are not project requirements. Each option can be negotiated separately and the contract amended.

1. **Additional Data Development:** Under this option, SDR will develop additional layers from data provided by the client. For example, SDR can produce a GIS layer of fire hydrants from a spreadsheet detailing the coordinates of each hydrant. Any spreadsheet containing information tied to a specific address, intersection or coordinate can be converted to a GIS layer which can be used in dispatch or in other GIS applications.
2. **Additional Data Development/Visual Scan:** Under this option, SDR will develop additional layers during the visual scan process (Methodology: Section 2h). Features discernable on imagery include bridges, lower water bridges, larger culverts, ball fields and parks, most cemeteries, farm complexes without residences, docks, campgrounds, boat ramps, cell towers, communication towers, water towers, fire lookout towers, runways, grain silos, electric substations and more. Identification and mapping of these features is priced at \$.50/point.

Campgrounds and other complexes can be further improved by working with paper or digital (PDF) maps provided by the campground owner, Corps of Engineers, Dept. of Parks & Recreation, etc. In this option, points are dropped for each lot or space with lot or space number, campground name, etc., and centerlines drawn for access roads to individual lots/spaces.

3. **GPS Field Data Collection:** SDR will drive the county or any of its cities with GPS to locate and map landmarks such as bridges, fire hydrants, large culverts, road signs, cemeteries, parks, RV larks, campgrounds, etc. Cost is per point collected and price per point is dependent on the density and location of the desired features.
4. **Spot GPS Field Verification of Address Points and/or Roads:** To verify that the GIS information provided by the Assessor matches what is posted on the homes or on road signs, SDR will use GPS to verify this information. Areas checked can be random or areas determined by SDR or the client.
5. **Monthly CAD Update:** SDR will request data from the County Assessor once a month and will then prep the data for the Caliber Public Safety CAD system. Using a remote log-in process, SDR will update the CAD mapping with new GIS data so that it remains current.
6. SDR has analyzed the data provided by ABC County 9-1-1 from its Caliber Public Safety mapping system. We have familiarity with this program through Dade County, Oklahoma, and currently perform quarterly CAD mapping updates for Dade 9-1-1. As per our analysis, we believe that the initial CAD load with the improved data will require the assistance of Caliber Public Safety to index and set up the new road ranges and other required elements. SDR will begin CAD updates/maintenance following this initial load by Caliber.
7. **MSAG Maintenance:** SDR will maintain the CenturyLink MSAG using the web interface provided by CenturyLink. To do MSAG maintenance, SDR will need to be advised of new or changed roads or emergency service boundaries. To that end, SDR will establish a relationship with the Assessor and a process of sharing information. SDR will also provide all MSAG

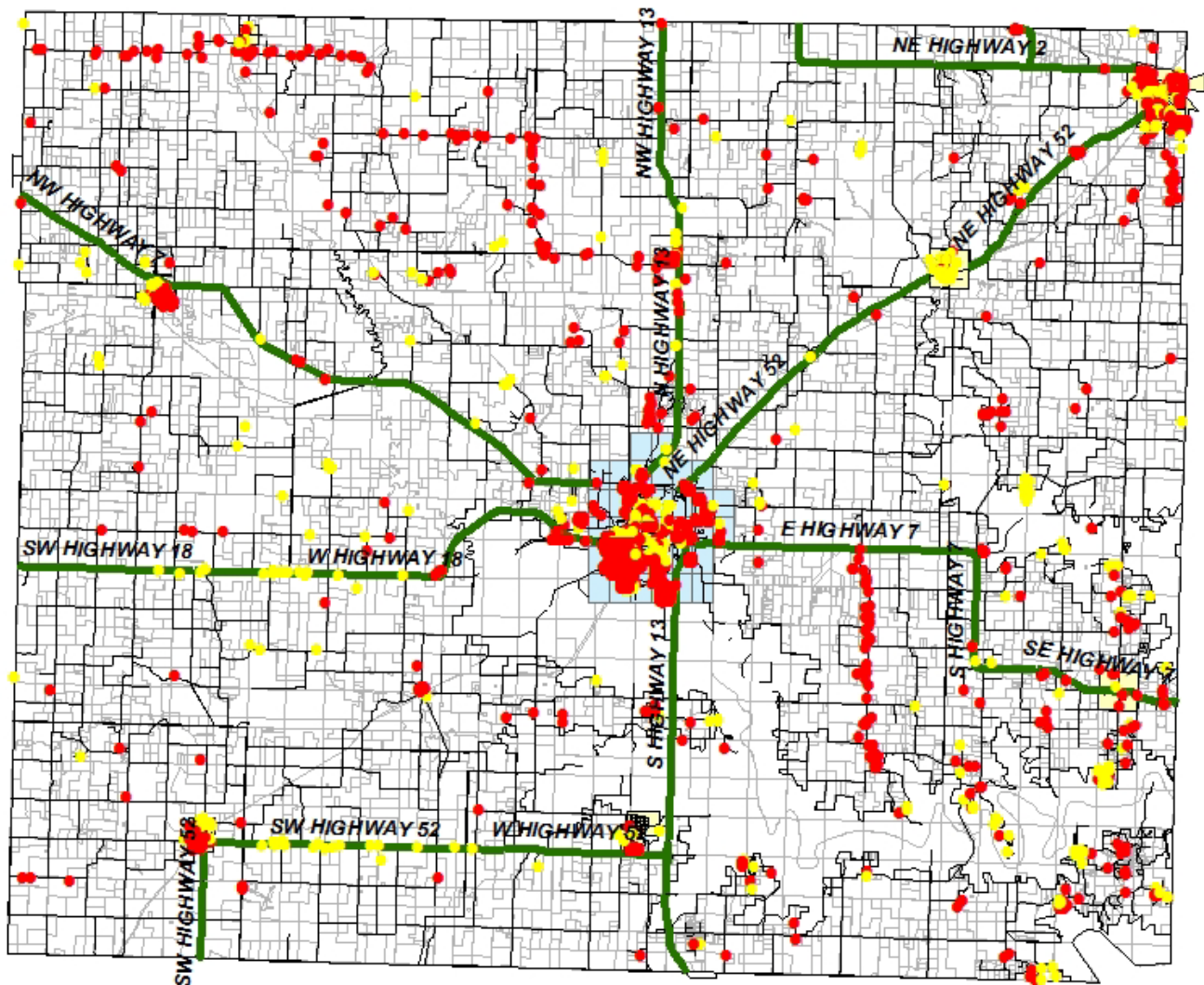
changes to dispatch so they can be incorporated into the Caliber Public Safety CAD or will make these changes during the monthly data update process.

MSAG maintenance includes changes to the MSAG required by routine boundary changes such as a law enforcement change due to an annexation by a city or a boundary change between two existing fire departments or districts. A large-scale boundary change is considered a special project, as are changes required by a re-addressing project after completion of the initial clean-up and correction project specified in this proposal.

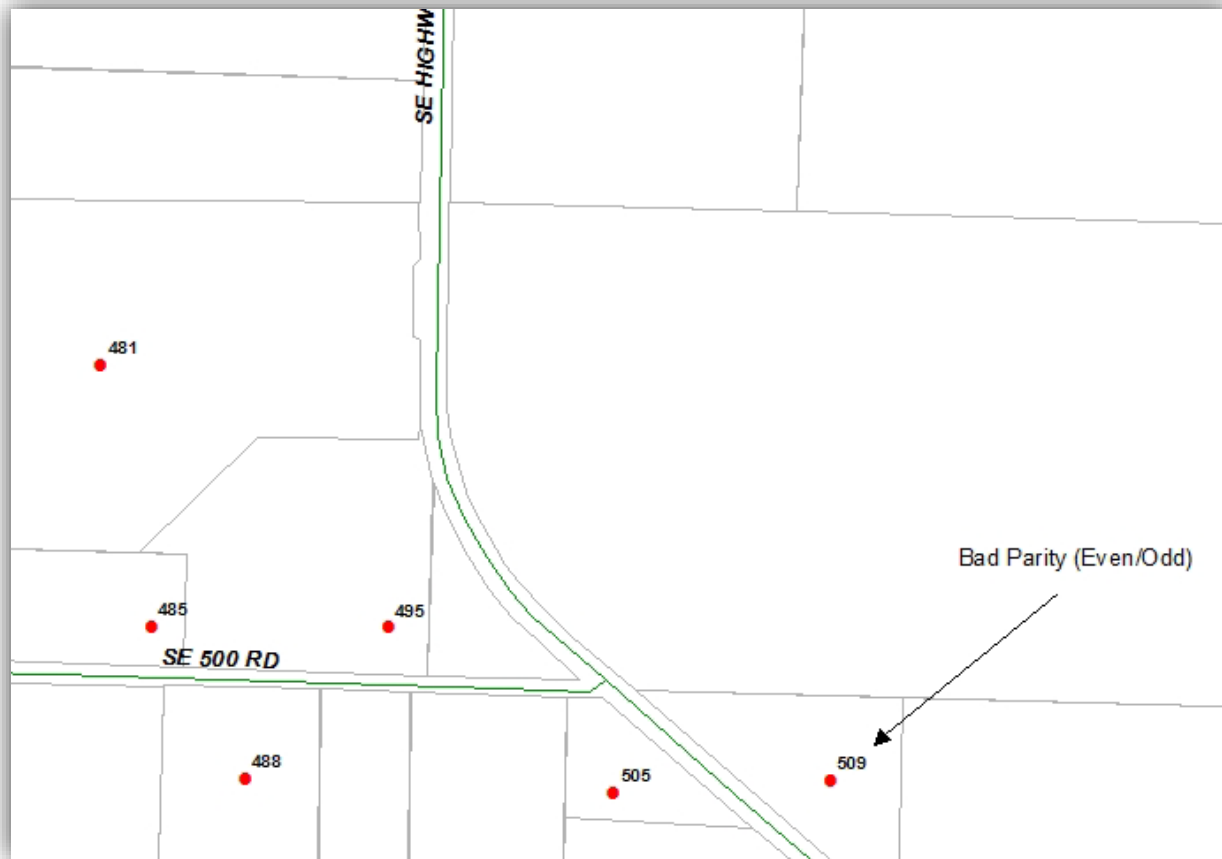
ATTACHMENTS

Addressing Issues – From Assessor's GIS Data

1. Overall Map showing Address Point to GIS Synchronization Errors. RED represents a road name sync issue and yellow represents an address/out of range issue



2. Sample Parity (Even/Odd) Issue:



Contract Attachments/Addendums

3. Sample Sequence Error:



Contract Attachments/Addendums

4. Identification from Imagery: Bridge, Cemetery, Substation, Campground, Docks/Boat Ramp



Attachment D to Addendum 1 to
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177



**9-1-1 and GIS Data Assessment and Recommended Tasks
For (Agency Name)
(Date)**

The 9-1-1 and GIS Data Assessment and Recommended Tasks is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research. or discussed by the parties. The parties agree to use this 9-1-1 and GIS Data Assessment and Recommended Tasks or a document substantially similar in the form of this 9-1-1 and GIS Data Assessment and Recommended Tasks.

The information and quotation provided in this document are based on GIS and 9-1-1 data provided by Sample County 9-1-1 and on the GIS, requirements set forth by the State of Oklahoma for NG9-1-1 as well as GIS and 9-1-1 industry standards. SDR utilized the GIS data provided as well as the Oklahoma standards documentation and our twenty-six years' experience in GIS for public safety and 9-1-1 to prepare the methodology, deliverables and pricing that follows.

Spatial Data Research, Inc.

SDR, Inc. was founded in 1993 and has been solidly centered in Addressing and GIS for 9-1-1 and Public Safety since. SDR supports Public Safety agencies across many states. However, a vast majority of our clients are local government and public safety agencies in the Midwest and Southwest, including Oklahoma, Missouri, Arkansas, Texas, Arizona, New Mexico, Illinois, Indiana and Kansas. SDR did the original on-the-ground mapping and 9-1-1 addressing in numerous Oklahoma counties, has web map clients in much of eastern Oklahoma, and is familiar with the demographics and geography of the area.

As the 9-1-1 and geospatial industries have developed and grown, the 9-1-1/Public Safety agencies rely more and more on geospatial solutions. SDR has provided these solutions for more than 25 years and stays abreast of the latest GIS and industry requirements for Next Generation 9-1-1 (NG9-1-1) and geospatial routing. SDR was an early innovator in location technologies and has been using GPS technology in our field verification process since 1995. SDR specializes in the needs of dispatch centers and addressing authorities and targets our GIS development in these specialty areas.

SDR is independently owned and operated out of Lawrence, Kansas.

GIS Data Requirements

While different CAD and mapping providers have varying requirements for GIS data used for incident mapping, routing and other purposes, these companies generally follow current NENA (National Emergency Number Association) standards. These standards are industry-accepted and routinely updated and have been adopted, in whole or in part, by the State of Oklahoma for its GIS requirements for NG9-1-1. NG9-1-1 GIS data will be used for an important function that it isn't currently serving in Oklahoma – the caller's location will be determined before the call is routed to the 9-1-1 Center/PSAP. The GIS data will thus route the call, by the location of the caller, to the correct 9-1-1 center. Currently, most wireless 9-1-1 calls are routed according to the cellular tower antenna that received the call, even though calls to that tower face could be made from different counties.

GIS data for NG9-1-1, in general, must be complete, spatially accurate, edge-matched with surrounding GIS datasets, exhibit good topology, and the addressing information – road naming, address ranging, and specific house numbers assigned – must be synchronized among the various layers and with MSAG. Address point, road centerlines, PSAP, County, GIS Provisioning, Municipal and Emergency Service Boundaries are required layers. Every address point must be plottable against the centerlines and should reflect on-the-ground signage and posted address numbers and placards. In addition, the addressing itself should follow the system chosen by the county with all addressing displaying correct parity (evens on one side, odds on the other), sequence (addresses increasing consistently and predictably in the same direction), interval (so many addresses per linear or grid mile or feet) and logic. Additional data fields are required for NG9-1-1, as well as more granular road name parsing, change tracking and unique ID designations.

In addition, in traditionally routed 9-1-1 (which is in place now but will eventually be replaced by NG9-1-1 location-based routing), the key 9-1-1 database, the MSAG (Master Street Addressing Guide), must also reflect true addressing, road naming and responder data. This database, maintained by AT&T in Sample County, has the function of helping to maintain standardized addressing while it routes calls. Synchronization of MSAG data to the GIS is provided through this proposal, as is adherence to the mandatory minimum requirements for GIS data remediation as set forth by the State of Oklahoma 9-1-1 office.

The Sample County 9-1-1/GIS Data

SDR performed a number of checks on the GIS data provided by Sample County 9-1-1 to assess adherence to existing 9-1-1 GIS standards and GIS standards for NG9-1-1. In general, the data exhibited excellent road name/addressing synchronization. 33,239 address point records of 33,654 (99%) contained road names and house numbers that fit within the parameters of the road centerline data. Address range attribution was also very good, though 391 of 9714 road

Related Documents – Current 9-1-1 GIS Assessment Report

segments were not ranged. The majority of these represent divided highways – instead of zeroing out the middle addresses, an entire directional centerline is zeroed out. This ranging style is a requirement of certain CAD vendors but is not NG9-1-1 compliant. There are also a small number of segments with overlapping ranges, mixed parity and reversed ranges. All road segments are coded with ESN and Community values. However, there are ESN values in the centerlines that do not appear in the ESZ polygon attribution. Both MSAG Community and Postal community values are coded as well, with boundary roads coded with surrounding county name for out-of-county community values.

Spatial Alignment of Road Centerlines & Address Points: From a spatial alignment perspective, the road centerline data is extremely good. Roads are drawn at a good scale, with all roads checked aligning with the 2017 NAIP imagery. Divided highways are drawn, though not ranged, correctly and access roads, crossovers and ramps are present.

Address point placement in Sample County is generally at structure center, though some instances were noted of placement near front door but offset from the structure. The number of points is consistent with what would be expected from census population and housing unit figures, and all apartments, trailer courts and strip malls checked have multiple points placed. We

Multi-unit Address Points: NG9-1-1 also requires a point for every unit in a trailer court, apartment complex, condo, strip mall, etc. More than 2000 units designators or house suffixes (i.e. ½) exist in the data and care has been taken to place them at or near the location of the unit of the structure/building.

Topology: Road topology in Sample County is very good. Approximately 700 errors were noted, most of these intersection (must not touch interior) errors, though there were 30 multipart errors as well. While nearly all roads are segmented and ranged at boundaries, they are not well snapped to these boundaries. Boundary and boundary to road topology needs to be improved.

MSAG to GIS Synchronization: SDR worked with the TN extract, the MSAG and the GIS addressing layers (address points/centerlines). As the TNs must by definition be MSAG valid as they exist in a relational database environment, SDR compared the TNs directly to the GIS centerlines.

There are 12,587 records in the TN database (ALI) and of those, 438 do not exactly code to a road centerline location in the county. These will be recalculated after centerline improvements are made and the remainder resolved individually.

SDR also created a road name matrix showing all road names found in address points, centerlines and the MSAG. There are 1941 unique names in this database, 1750 of which appear in the MSAG. 1508 road names are shared among the three sources. Additionally, there are 139 road names used in the MSAG that don't appear in the GIS at all – not in the centerlines

Related Documents – Current 9-1-1 GIS Assessment Report

or the address points. This generally indicates a problem with road name abbreviations, spellings, street types or directional.

There are 41 separate ESNs in the MSAG, including VoIP, Wireless and a couple community placeholders, but not all the ESNs appear in the GIS ESZs. In fact, at least two ESNs appear valid in the GIS with multiple roads coded with the value, but do not appear in the GIS ESZs or the road ESZs. Inconsistent ESNs include 11, 12, 35, 3 and 5. These discrepancies will need to be analyzed and resolved so that the ESZ layer and the MSAG better synchronize. SDR advises that in this project, we begin by requesting the ELT so that it can be validated. Once validated, the ESZs and ESBs will be reviewed to make sure that the ESNs assigned to each unique set of responders are valid and truly unique. At that point, once the ESZs reflect true response jurisdictions, the roads can be recoded with correct ESNs.

Rural addressing is quadrant based and appears consistent through all areas checked by SDR with proper segment direction and even addresses on the north and east in all four quadrants.

The proposed project includes effort to verify the addressing and the boundaries in the GIS, then create a GIS-based MSAG with accurate road name, range and responder data. That MSAG is then compared to the loaded MSAG, and add/change/delete records created for update through the 911Net on-line system

Project Objectives

The objective of the Sample County 9-1-1 GIS improvement project is to make spatial, topological and attribution corrections and additions to the GIS road centerline, address point and boundary data and to the MSAG to ensure they meet the requirements and standards of the 9-1-1 industry, and specifically, that they meet or exceed the State of Oklahoma's NG9-1-1 standards.

As required by the State of Oklahoma 9-1-1 office, SDR will also collect and document information regarding addressing, GIS and MSAG responsibilities in Sample County and create a formal GIS and Addressing/GIS process assessment.

While MSAG to GIS Synchronization, edge-matching and NG9-1-1 formatting are the items that most require attention in this county, SDR's proposal covers the following items:

1. Proper Topology among addressing and MSAG layers: Roads must be segmented and snapped correctly at intersections and MSAG and project boundaries. Boundaries must display proper topology with no gaps or overlaps so that individual polygons in each layer snap to each other vertex to vertex. Where boundaries follow roads, road segments should be properly snapped to boundaries. *Proper topology assures proper*

Related Documents – Current 9-1-1 GIS Assessment Report

MSAG coding, enables vehicle routing functions in some mapping and CAD, and is industry-standard good GIS practice.

2. Edge Matching: Roads and boundaries must align with road and boundary extents in surrounding counties. MSAG Boundaries must snap to PSAP boundaries as finalized by the State of Oklahoma, and road centerlines must snap to the edges of the data source boundaries (PSAP, County, Municipal, etc.) *Proper edge matching helps assure proper location-based call routing in a NG9-1-1 system and also helps prevent duplicate address location if road centerlines are submitted for the same location from two different GIS entities. Properly snapped features assure data connectivity for networked solutions.*
3. Road segments must follow addressing direction, with segment start point at the low addressing end and segment endpoint at the high addressing end. *Proper road segment direction enables programs to interpolate addresses and assures accurate automated addressing and vehicle routing.*
4. Road segments must be appropriately named and ranged, with accurate low and high address ranges for the left and right sides of the road. Road names must be parsed into individual components – both for legacy and NG9-1-1 systems. Road centerline segments must be attributed to contain left and right side of the road boundary information (9-1-1 Community, Emergency Service Number/ESN, PSAP or County, State, ZIP Code City, etc.). Address ranges in roads must not overlap. *These requirements ensure consistent addressing and the parsing of road name values (in up to eight fields in the new Oklahoma NG9-1-1 GIS standards) help assure address location even when the road name is not keyed in perfectly. For example, “Lake of the Woods Ln” can be found in the NG system by keying in “Lake Woods.”*
5. Road names in the road centerline and address point GIS layers must be synchronized with the MSAG so that road names properly align in all data sources, with the same spellings, abbreviations and designations. In addition, all address points must contain addresses that are synchronized with the data in the road centerlines and the MSAG so that map queries from incoming ALI data will result in accurate structure identification and location. *Synchronized names assure accurate addressing and 9-1-1 location. They are critical to the success of many current mapping applications.*
6. Emergency Service Boundary data should be accurately represented in the MSAG and in the GIS centerlines with fire, law and EMS response agencies for each potential address, by range and side of the road, coded according to actual response zones. ESZ usage should agree among the varied sources – centerlines, boundaries and MSAG/ELT.

Related Documents – Current 9-1-1 GIS Assessment Report

7. Addresses must not be duplicated and must not be included for areas beyond the GIS jurisdiction of a PSAP. Addresses must be complete, with ZIP community, county and state identifiers. Addresses should be sequential and locatable. *These criteria assure that the correct point will be identified and mapped, and that calls matched to points or map locations will be routed to the correct PSAPs.*
8. **(No problems noted in initial data check with this item)** For NG9-1-1 compliance, address points with correct and synchronized address data must be placed on or at every structure location, including units and subunits in multi-unit buildings or complexes. Address points should not appear in the 9-1-1 GIS for undeveloped property. *Address points for every addressable location including units in complexes assure precise location even to the floor of the building, and assists in NG9-1-1 call routing*
9. **(No problems noted in initial data check for this item)** Road Centerline network must include all named public and private roads as well as access roads, ramps and separated lanes in highways by travel direction and should not contain centerlines that are not developed on the ground. GIS features should match as closely as possible to on-the-ground features. *Assessor's offices sometimes include roads and homes in their GIS that are platted and not yet developed on the ground. While important for planning and permitting, this information should not be given to dispatch as it confuses responders or dispatchers who use the mapping to give directions and may route responders down a road that does not exist*
10. The GIS must contain the NG9-1-1 required fields, with mandatory fields populated with required information and with as much of the recommended but not mandatory information as possible. However, existing data fields should also be maintained for the mapping applications (dispatch mapping/CAD) currently in place at Sample County.
11. Proper reporting, of data assessment and zero percent error compliance, must be produced and reported to the State of Oklahoma 9-1-1 GIS entity. *These requirements assure that all data is fully compliant and that it can be successfully be used in NG9-1-1 call routing and mapping on a regional and statewide basis.*

Limitations

SDR will work with the GIS response boundaries provided and will verify with the client that the GIS boundaries represent actual response zones. Inaccuracies in the boundaries will cause inaccurate MSAG coding and could cause routing issues. The proposal does not include hours

Related Documents – Current 9-1-1 GIS Assessment Report

or deliverables to correct the boundaries if they currently do not represent actual response zones. This proposal represents SDR's professional estimation of the work needed based on current NENA and State of Oklahoma standards and data provided to SDR for analysis. SDR has priced the remediation activities based on its proposed state pricing for the RFP in progress. If the client releases its own RFP, this proposal becomes null and void and SDR will respond directly to that RFP and provide pricing and methodology based on the client's specific requests and specifications.

Deliverables:

1. Improved, topologically sound, edge-matched road centerline GIS layer with access roads, ramps and divided highways correctly rendered. All roads will be properly segmented, snapped, named, ranged, and coded with MSAG boundary information as provided by Sample County 9-1-1.
2. Spatially improved, topologically sound, edge-matched boundaries (ESZ, Fire, Law, EMS, ZIP Community, PSAP) as required by State of Oklahoma 9-1-1. Data will be edge-matched to all contiguous county data provided by A, Sample and B Counties.
3. Address point layer synchronized with centerline layer so that all address points are plottable against the centerlines, with structure numbers that fall within the centerline's range and an exact road name match, with the given address and road name in full synchronization with the MSAG. Any addressing irregularities noted will be flagged and a correction proposed.
4. Error report detailing addresses in the GIS that fail to meet the state's criteria of "Addressing should be sequential and locatable." These may be out of sequence addresses, out of range addresses, off-grid addresses or addresses with bad parity (even/odd).

No issues noted with items 5 and 6/client prefers to resolve these if found.

5. Roads improved spatially so that they follow the chosen imagery source. Problem roads currently occur mainly in unfinished cities.
6. Address points improved spatially so that they are represented on actual building location, using the imagery designated in #4. Address points added for all missing cities and multi-unit complexes. Parcel data and imagery will be used as the primary source, though additional sources will be needed for multi-units.
7. All data synchronized with the MSAG so that road names align among the sources and all address points and TN records are plottable against the centerlines. Responder data will be accurately coded to side of road. MSAG changes delivered in spreadsheet format to 9-1-1 for 9-1-1 to submit via 911Net.

Related Documents – Current 9-1-1 GIS Assessment Report

8. All mandatory attribute data required by Oklahoma NG9-1-1 populated and additional attribute fields added as necessary. All recommended data populated providing sources of said attribution exist and are available to SDR.
9. Assessment report documenting players, roles, responsibilities, contact information, software/systems in use, analysis of data and recommended actions as mandated by the State of Oklahoma 9-1-1 GIS Guidelines.
10. Zero error report using State-Mandated QA/processing tools on improved data and metadata as required by the state.

Methodology Summary:

To identify and code errors before beginning, SDR will run a variety of checks on the GIS & MSAG data. Some of these checks have already been performed in order to put together this proposal and price quotation. The tests include:

1. Addresses that do not fall into a road centerline range.
2. Addresses that do not match a road centerline name.
3. Road segments with inconsistent or missing naming.
4. Road segments with overlapping or reversed range values.
5. Road segments with parity (Even/Odd) problems.
6. Road segments with missing name or range values.
7. Features with null, bad or missing geometry.
8. MSAG to GIS road centerline compare.
9. TN to GIS Centerlines reverse geocoding.
10. MSAG to GIS ESN compare.
11. MSAG to GIS Community compare.
12. MSAG, GIS, Address Point road name matrix.
13. Topology on road centerlines and boundaries.
14. Visual scan of data to assess spatial alignment and completeness.
15. Reverse geocoding and visual analysis to identify addressing errors.

Project Kick off Conference Call: After performing these checks, SDR will schedule a conference call with Sample County 9-1-1/GIS officials to review findings, update the project schedule and discuss ongoing GIS maintenance by Sample County during the SDR project, resulting in a plan for integration of changes made by county 9-1-1/GIS personnel at time of data delivery. SDR will document the update and maintenance practices, tools and providers and the dispatch mapping software currently in use. A project participant list with contact information will be created and distributed to all players. Finally, SDR will discuss and implement a method to share data and information during the project, which will likely involve e-mail and sharing of documents and questions via GoogleDocs.

Related Documents – Current 9-1-1 GIS Assessment Report

Following the kick-off call, SDR will finalize the assessment report, submit it as required to the State, then begin to correct identified errors with the goals of meeting the above-named deliverables and objectives and adhering to the State of Oklahoma NG9-1-1 data standards.

The assessment report will document all information gathered in the initial assessment process, including participants, roles, responsibilities, analysis done and recommended actions.

Road Name Analysis: SDR will seek input from Sample County 9-1-1 personnel to resolve road naming questions when sources differ on road name variations. Some discrepancies can be handled by simply adhering to a standard (i.e. “E 1st St” instead of “E 1”) and applying that standard to all similar roads. Roads range issues including overlaps, missing ranges, short ranges or reversed/parity issues will be corrected.

Road/Boundary Topology: All road centerlines will be segmented, ranged and snapped appropriately to eliminate all topology errors identified. Topology will also be corrected on all relevant boundaries during this same process. All roads and boundaries will be properly edge-matched to available surrounding county data.

Missing or Misdrawn Roads: Concurrent with the Topology and data improvement phase, SDR will use imagery designated by the county to realign any roads in non-incorporated areas that do not follow designated imagery to within map accuracy standards cited in the state requirements. Any missing roads found will be added. All centerline data added will meet 9-1-1 and GIS industry standards.

(Not priced – Client prefers to perform this task) Missing or Spatially Incorrect Address Points:

SDR will perform a visual analysis of the updated and corrected data to identify roads or addressable buildings apparent on the imagery not represented by a point in the GIS. These buildings will be coded with a road name based on building access or frontage and the situs address number given in the GIS parcels, if available. During this process, SDR will also identify GIS centerlines and address points that are not represented by physical roads or buildings and code them for removal before posting to dispatch. SDR will, during this phase, move address points to building location shown on imagery, and will document address points moved. Driveways will be added to show connectivity to the road for longer or complex driveways.

GIS-based MSAG and MSAG Changes: Next, SDR will verify and complete/correct the coding of boundary information in the boundary layers and the road centerlines then produce an MSAG from the completed GIS data and compare the GIS-based MSAG to the 9-1-1 MSAG. A list of suggested additions, changes and deletes will be prepared by SDR and submitted to 9-1-1 for approval to send to AT&T. These changes will be submitted to the client in a format conducive to 911Net update.

Oklahoma NG9-1-1 Formatting: SDR will add the required NG9-1-1 data fields, including domains, to the improved and corrected data, and populate them, retaining existing fields and data so that the data can be used by existing dispatch mapping/CAD applications. Calculations

Related Documents – Current 9-1-1 GIS Assessment Report

will be made to carry verified data over from like fields, and additional calculations made to fully comply with standards. Unique IDs will be generated and populated using the format required. All added fields will be correctly designated by length, type and content.

Final QA and Data Delivery: Finally, SDR will perform a QA of the completed data and will ensure that the data format reflects the State of Oklahoma 9-1-1 GIS requirements and that all required fields are present and content is populated. SDR will finalize the metadata for each data layer and will document methodology used. SDR will then utilize the toolset required by the State of Oklahoma 9-1-1 guidelines and assure a zero-error count as a data suitability guarantee. SDR will convert the data to the state-required projection at time of delivery, though the county dataset will be delivered to the county in the projection requested by the county, which could differ from the state-required projection.

SDR will deliver the data via secure Dropbox or Sharefile download link to the client. The data will be delivered in file geodatabase and/or shapefile format in the projection requested. SDR will host a web meeting with the client to review the delivered data and assure their familiarity with it. We will also create and deliver a data format document with a tab for each delivered and improved layer. This will show the relationship between like fields and sources for data in new fields.

To meet the proposed timeline, the client must provide consistent, quick turn-around of questions submitted to SDR to clear up road name variances among the data sources. These issues might refer to spelling, street types, directional or abbreviations as well as to road extent. Address numbers missing from parcel data will be validated by Sample County 9-1-1.

Schedule:

All work will be delivered within four months of project kick-off. Project kick-off will be decided after an approved agreement is submitted to SDR, as SDR will evaluate current workload to determine when project can be kicked off with Sample County, OK. This timeline requires regular response from Sample County 9-1-1 and/or GIS personnel regarding resolving added addresses and road name issues and providing requested materials.

Related Documents – Current 9-1-1 GIS Assessment Report

State of Oklahoma Pricing and Categories:

\$00.00 Initial Assessment of GIS data and capabilities

\$00.00 Mandatory Minimum Requirements for GIS Data Remediation

\$00.00 Validation of Final Data

Total Project: \$XX.XX

Sample County, Oklahoma 9-1-1

Agency Approval: _____

Date Approved: _____

Attachment E to
Addendum 1 to
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177



Maintenance Services Agreement and Scope of Work
NG9-1-1 GIS and 9-1-1 Database Maintenance for (Client/Agency Name)

The Maintenance Services Agreement and Scope of Work is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research. or discussed by the parties. The parties agree to use this Maintenance Services Agreement and Scope of Work or a document substantially similar in the form of this Maintenance Services Agreement and Scope of Work.

Spatial Data Research, Inc (SDR)., agrees to offer the following services and deliverables to [Authorized User] for a one-year period beginning on [start date] and ending on [end date]. This services agreement is renewable for additional one-year periods. Notice of pending contract end date and renewal period and costs will be made by e-mail to primary liaison at [Authorized User] eight (8) weeks before contract renewal date. At the time of notification, SDR will review scope of services with to [Authorized User] and negotiate any requested or recommended modifications.

Scope of Work

1. Covered GIS Layers
 - a. Under this agreement, SDR will be responsible for updating the following existing GIS Layers:
 - i. Address Points
 - ii. Road Centerlines
 - iii. MSAG Boundaries
 1. Fire
 2. Law
 3. EMS
 4. ESZ
 5. MSAG Community
 6. Provisioning Boundary
2. New Address Assignment:

Contract Attachments/Addendums

- a. SDR will assign MSAG-valid addresses in unincorporated (rural) and incorporated areas of [Authorized User], OK for new addressable locations and newly placed (moved) structures such as mobile homes.
 - b. New addresses will follow the addressing schematic of the area, as documented by SDR and [Authorized User] during project initiation and will align with surrounding addresses on existing properties and with the specific rural or incorporated addressing scheme.
 - c. New addresses will align with State of Oklahoma 9-1-1 Management Authority's posted Addressing Standards and will be sequential and locatable.
 - d. State 9-1-1 GIS required attribution will be included with GIS changes provided the data has been migrated first to the state format. This services agreement does not include data improvement and format update to adhere to State of Oklahoma 9-1-1 Management Authority NG9-1-1 requirements.
3. Road Name and Range Review:
 - a. SDR will review the left/right, low/high address range and the road name/designation in the GIS centerline when each new address is assigned.
 - b. SDR will correct any problems found with the address range or the road name/designation on the road segment to ensure consistent and accurate addressing.
4. MSAG Verification
 - a. SDR will validate the new address against the MSAG to verify that the address is MSAG compliant and that the GIS data is synchronized with the MSAG. Any addresses that fall out of the MSAG will be vetted through [Authorized User] 9-1-1 and a determination made as to whether an MSAG update is required or the address needs to be re-evaluated. Any variances between road name designation, including abbreviations, spelling and street types, will be resolved with existing database and county 9-1-1 resources.
5. Point of Contact:
 - a. [Authorized User] will appoint an official Point of Contact (POC), which may be an individual, an office or a job title.
 - b. [Authorized User] will notify SDR if and when the official Point of Contact changes and will provide new contact information promptly.
 - c. Post offices, residents and other county or city offices will not contact SDR directly, thereby assuring that [Authorized User] is the central authority for all address assignment and is supported by SDR in this effort.
6. Address Notification;
 - a. SDR will notify the [Authorized User] Point of Contact of every address assigned. The specific method of notification will be jointly determined by SDR and the PoC at time of contract initiation. Usual methods are e-mail or common document on secure shared cloud drive.

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- b. Address notification to the resident, business or other entities such as the post office, city or utilities is not included with these services.
- c. SDR will, in cooperation with the client, create an address notification letter template and provide a single notification letter in Word or PDF format via e-mail or shared cloud drive location for each new or changed address.
- d. The client will be responsible for forwarding this letter to other parties as needed such as the USPS, utilities, the resident or business and other county or city offices.
- e. As the only entity authorized to officially assign ZIP code is the USPS, SDR will provide the Post Office name and ZIP Code where the closest addresses to the newly addressed location receive mail. SDR does not guarantee that this is the delivery ZIP code as mail routes can be complex and sometimes change. This caveat will be noted on the notification letter.

7. Locating the New Address:

- a. The client will be responsible for providing SDR the location of the new or moved addressable location. The following are acceptable methods to provide this location. The addressing system in use (quadrant/grid/interval/city block) will influence the information needed below.
 - i. The latitude and longitude of the structure, the structure's street access location, and the name or number of the road from which the structure should be addressed.
 - ii. The parcel ID plus a description of where the addressable structure is located on the parcel, plus its position relative to any known features visible on imagery such as another structure, water feature, utility cut, etc.
 - iii. A screen capture in JPG or PDF format from Google Maps or similar mapping application with aerial imagery showing the location as it relates to nearby identifiable features.
 - iv. Detailed driving directions to the location from an identifiable start point along with addresses of existing nearby structures.
 - v. SDR's eCOP new address/verify structure tools.
 - vi. An Excel spreadsheet with coordinates and other data that can be imported into ArcGIS.

8. Cell Phone Apps for Data Collection

- a. At **[Authorized User]** request, SDR will provide download links and directions for free or low-cost coordinate collection cellphone apps.

9. Additional Attribute Information

- a. information, if any, provided by the client about the addressable structure or its owners or residents will be entered into the point's attributes by SDR including
 - i. owner name/resident name
 - ii. structure type

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- iii. structure composition
 - iv. subdivision name
 - v. lot number
 - vi. owner contact information.
- b. Date of address assignment is automatically assigned by the addressing program.

10. New Address Turn Around Time:

- a. SDR will make every attempt to return all address requests within 24 hours of the request (on business days)
- b. Three business day are required when further investigation is needed, a new road needs to be confirmed and added, an entire plat is being digitized or an MSAG issue is identified.

11. Dispatch Mapping Address Mapping Error Resolution.

- a. The client will submit dispatch mapping addressing errors to SDR via our shared cloud drive logging system or via e-mail, as established with SDR at project initiation.
- b. SDR will evaluate the GIS data based on error reports from the client when specific addresses fail to map in the dispatch mapping application or fail to map accurately.
- c. SDR will make corrections or changes to the GIS and/or the MSAG so that the address will map accurately in the future.
- d. SDR will load these fixes with regularly scheduled map updates.
- e. Dispatch mapping error resolution applies only to situations where known physical addresses fail to map. SDR cannot resolve wireless call location inaccuracies when coordinate location of the caller did not display properly.

12. Digitization of Subdivision Plats

- a. If an entire plat for a subdivision is provided to SDR, SDR will, upon the client's request, provide an address for each lot before the lots are developed.
- b. Addresses will be determined from the center of the parcel's road frontage.
- c. If the parcel has frontage to more than one road, an address will be assigned for each road, with the appropriate address chosen when the home is constructed.
- d. These addresses are considered provisional addresses and are kept in a provisional address GIS layer so that they are not loaded at dispatch until roads are graded and structures are built. However, the addresses can be made available to builders and residents at the time of property purchase.

13. Mapping New Roads

- a. For new roads, [Authorized User] will provide SDR:
 - i. a digital plat (which can be added to the GIS and displayed in the digital mapping software) or
 - ii. GPS coordinates taken along the road or

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- iii. If a road follows an existing drive, lane or section line or fence line visible on the imagery, a Google Maps screen capture is acceptable, or coordinates indicating where the road which follows a visible feature begins and ends.
- b. [Authorized User] will provide the road name for any new or changed roads. SDR will vet the name to assure it is not duplicated elsewhere or, if a road number, that the number aligns appropriately with the grid.

14. Renamed or Re-Routed Roads

- a. If a road name is changed by state, city or county officials, or a road is re-routed and addresses along said road need to change, SDR will provide these new addresses following the same guidelines as above. This includes situations where the state or county re-aligns a road, closes a bridge or builds a new one, extends a road, converts an existing road to a state, US or Interstate Highway, and other similar situations.

15. GIS and MSAG Synchronization

- a. SDR will make changes to the GIS to reflect all new and changed addresses and roads, keeping the GIS synchronized and MSAG compliant.

16. Industry Standards

- a. All GIS data will be maintained according to best practices for GIS in the 9-1-1 industry, with special focus on NENA and state-recommended or mandated requirements for GIS for addressing and NG9-1-1.
- b. The data will be maintained in the format provided or requested by the client and will remain compliant with the needs of dispatch mapping software deployed at the time of contract award.
- c. Reformatting of data to comply with the requirements of new programs

17. GIS Updates/Data Sharing

- a. SDR will provide updated GIS layers to the client and to any other entities as directed by the client.
- b. SDR will provide quarterly updates to the County Assessor with new and modification dates clearly indicated for each new or modified feature.
- c. These updated layers will be provided in ESRI shapefile or geodatabase format and will be made available by secure download link.

18. Dispatch Mapping Updates

- a. SDR will send quarterly updates of new GIS data to the dispatch mapping provider.
- b. Unless otherwise indicated, the data will be delivered in ESRI file format.
- c. SDR will export the GIS address point and road centerline data into the data format currently in use with the Motorola ECW mapping application.
- d. The dispatch mapping provider will deploy the updated data in the dispatch mapping software.

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- e. Additional modifications of the data format due to changes in the dispatch mapping software may incur a one-time template creation charge from SDR to modify our export scripts.

19. MSAG Maintenance

- a. SDR will provide MSAG changes and updates to [Authorized User] 9-1-1 whenever addressing, road centerline or boundary changes necessitate such changes.
- b. SDR will work directly with the 9-1-1 database provider through its on-line or other interface to make the required MSAG changes.
- c. It is the responsibility of [Authorized User] to secure MSAG access for SDR.

20. Routing Sheet Review

- a. SDR will review wireless routing sheets to verify and/or assign tower addresses.
- b. Routing sheets are provided to [Authorized User] 9-1-1 in Excel format by West or Comtech on behalf of the cellular providers and must be provided to SDR as soon as they are received if address verification is required.

21. GIS MSAG Boundary Updates

- a. SDR will make adjustments to Fire, Law and EMS GIS boundaries that are approved after the date of contract initiation.
- b. The creation or one-time update of outdated Emergency Service Boundary GIS layers to reflect current actual boundaries is not included in this maintenance agreement.
- c. Boundary changes will be delivered to SDR in any accepted digital map format, in digital image formats, or on paper maps. These changes may be necessary if a city expands its corporate limits, or when Fire and Ambulance services change their boundaries.
- d. SDR will update the ESZ layer to reflect individual Emergency Service Boundary changes.
- e. SDR will make all MSAG changes that result from these boundary changes.
- f. Boundary changes will be included with Road Centerline and Address Point updates to dispatch mapping and approved government agencies.

22. eCOP Web Map Subscription

- a. [Authorized User] will, at project initiation, provide all data layers required for 9-1-1 GIS and Addressing maintenance and for the eCOP web mapping system.
- b. Data layers not maintained by SDR will be provided by [Authorized User] for the eCOP web map quarterly.
- c. 9-1-1 GIS layers will be updated in the eCOP web map quarterly.
- d. [Authorized User] is responsible for sharing the eCOP URL with potential users.
- e. SDR will provide an on-line training for interested parties in the use of the eCOP web map at the client's convenience.

23. SDR Project and Technical Resources

- a. SDR will assign a lead addressing/GIS technician and a project manager to this project at project initiation.

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- b. SDR will share all contact and escalation contact information with [Authorized User] at time of project initiation.

Limitations

This project includes the cited GIS layers, and all geographic areas inside [Authorized User] only. Addressing or GIS improvement outside of [Authorized User] is not included in this agreement. Additional services to improve data to NG9-1-1 specifications are not included. On-site services or field data collection services are not included. General improvements to data over time, including correction of existing errors as they are identified is included, but wholesale improvement projects of known errors are excluded from the services agreement.

Yearly Maintenance Service Contract Amount:

For the services described in the Statement of Work:

\$XXXX.XX

Contract is for one full calendar year from date of approved agreement. Fees will be pro-rated and invoiced monthly following the month the services were completed by SDR. Payment terms are net forty-five (45) days from the date of invoice.

Renewal Cost Estimates

During the fourth quarter of service to [Authorized User], SDR will evaluate workload and hours to determine if there will be an increase, decrease or no change in cost for the second year of GIS, Addressing and MSAG Services and Dispatch Mapping updates

This Agreement is made and entered into between the parties and is effective as of date of execution by [Authorized User].

**Attachment F to Addendum 1 to
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177
SDR Annual Software Maintenance & Support Options**



The SDR Annual Software Maintenance & Support Options is hereby amended as set forth below and supersedes all prior documents submitted by Spatial Data Research. or discussed by the parties. The parties agree to use this SDR Annual Software Maintenance & Support Options or a document substantially similar in the form of this SDR Annual Software Maintenance & Support Options.

AddressIt

SDR's AddressIt software is warrantied for 12 (twelve) months from purchase date and premier-level support is provided during this first twelve-month term.

At the end of the warranty period, SDR offers the Annual Standard and Premier Software/Maintenance Support packages described below.

- Support is available to all users of the software on the location where it was installed and set up by SDR.
- Reinstallation of the software on a different PC (hardware changes) is covered as described in the support package descriptions and requires SDR support to deauthorize and reauthorize the AddressIt software license.
- Services to modify, export or format AddressIt GIS data for use in other software applications or by other departments using GIS are not included under the AddressIt Basic or Premier Maintenance/ Support Agreements.
- Please see the Annual Support Contract Document for additional terms and conditions.

AddressIt Support

Support Package	Support Features/Maintenance	AddressIt
Standard	<ul style="list-style-type: none"> ▪ 2 hours per month support for AddressIt and ArcGIS Desktop user questions and data issues via telephone, e-mail or web meeting ▪ Technical support for software functionality ▪ Free version upgrades during maintenance term ▪ (One) software reinstall (hardware change) ▪ Support hours M-F 8:00 - 5:00 CST/CDT 	\$995.00
Premier	<ul style="list-style-type: none"> ▪ 5 hours per month support on full SDR Knowledge base including software, 9-1-1 call location, 9-1-1 database, addressing practices and GIS via telephone, e-mail or web meeting ▪ Technical support for software functionality ▪ Two (2 hour) web training classes ▪ One new user on-line training (for up to two participants) ▪ Two software reinstalls (hardware changes) ▪ Free version upgrades during maintenance term ▪ Support hours M-F 8:00 - 5:00 CST/CDT 	\$1,495.00

Users who do not purchase annual support/maintenance services will be billed at SDR's out-of-contract support services current rate of \$200/hour. Invoices are issued monthly for remote or on-site support in one (1) hour increments. On-site support include portal to portal hourly charges plus travel expenses.

Go2It

SDR's Go2It software is warrantied for 12 (twelve) months from purchase date and full support is provided during this first twelve-month term.

At the end of the warranty period, SDR offers Software/Maintenance Support packages described below for Go2It Core and Go2It Dispatch.

- Support is available to all users of the software on the location where it was installed and set up by SDR.
- Reinstallation of the software on a different PC (hardware changes) is covered as described in the support package descriptions and requires SDR support to deauthorize and reauthorize the Go2It software license and to configure the software.
- Services to modify, export or format GIS data for use in Go2It are not included with these support packages. SDR GIS support for Go2It can be purchased under a data services agreement.
- Please see the Annual Support Contract Document for additional terms and conditions.

Go2It Support

Support Package	Support Features/Maintenance	Go2It
Go2It Core	<ul style="list-style-type: none"> ▪ Unlimited technical and user functionality support by telephone, e-mail and web meeting ▪ Technical support for software functionality and data updates ▪ Free version upgrades during maintenance term ▪ 24/7 support hours. Support outside of 8-5 M-F hours to 800-238-1911 X2 (software support) or to support@sdrmaps.com 	\$300.00
Go2It Dispatch	<ul style="list-style-type: none"> ▪ Unlimited technical and user functionality support by telephone, e-mail and web meeting ▪ On-site support included only if SDR-provided PCs or servers are used and requires additional hardware/systems maintenance agreement ▪ Up to two software reinstalls (hardware changes) per year ▪ Free version upgrades during maintenance term ▪ 24/7 support hours. Support outside of 8-5 M-F hours to 800-238-1911 X2 (software support) or to support@sdrmaps.com 	\$1,295.00

Users who do not purchase annual support/maintenance services will be billed at SDR's out-of-contract support services current rate of \$200/hour. Invoices are issued monthly for remote or on-site support in one (1) hour increments. On-site support include portal to portal hourly charges plus travel expenses.

Spatial Data Research, Inc. Software Warranty and Annual Software Support Contract Information

SDR will install and configure SDR software remotely through remote access, secure web meeting or on-site at client location, as indicated in your purchase agreement. SDR warrants its software on the operating system, system configuration and ArcGIS version on which it was originally installed and proven operable by SDR. Adjustments to SDR software configuration or components after initial setup and installation which are required by changes in third party software, CAD output database format or ALI protocol are not automatically covered under warranty or future year service contracts. If you plan to upgrade or change equipment, operating systems, third-party software with dependencies on GIS data or mapping applications, or data formats please contact SDR during your decision-making period to discuss the implications to your SDR software products. SDR will accommodate and support these changes where possible and with sufficient lead time but may charge additional one-time fees for certain changes and modifications and for jobs without sufficient lead time. Including SDR in your planning process will assure smooth and timely transitions.

Please see the SDR software manual's technical specifications and limitations for more information about your software's set-up requirements and dependencies to understand what system changes may affect the SDR software performance.

Undocumented changes to the client network or environment may reduce or break functionality within the product. As SDR's Go2It Dispatch software reads an ALI or CAD output file stored on your server or on a dispatch PC, and/or communicates via comm port connection to the ALI data feed provided by your 9-1-1 database provider, network and equipment changes may affect Go2It, including but not limited to: server and network PC names, operating systems, firewalls and antivirus software, mapped directories and drives, virtual server creation, ALI or CAD database storage locations, cable adaptors (i.e. CAT to serial or serial to USB) and network and user permissions, especially for new Windows profiles. The repair of errors caused by implementing these changes is considered outside of warranty or maintenance if SDR is not consulted ahead of planned changes or at the time of unplanned changes in the event of equipment failure.

SDR annual software support packages include telephone, remote access, web meeting, and e-mail support, SDR approved software upgrades required by ESRI or by operating system changes, and incremental version releases (i.e. vers 2.0 to 2.1). Full version upgrades are not provided free through support packages but are available to all SDR in-maintenance users at a discounted upgrade price. High-speed internet connectivity is required for effective web meeting and remote access support. Supported browsers include Microsoft Edge, Firefox and Google Chrome.

SDR upgrades or redesigns our tools to stay current with Windows Operating System updates and with ESRI ArcGIS desktop version updates. These SDR software updates are available upon request to customers with active support agreements. Please contact SDR in advance of upgrading Windows or ArcGIS to determine the SDR software upgrade version appropriate for your system. Customers who do not have a current support agreement may purchase the new versions by contacting our Sales Department at 785-842-0477 ext. 3. SDR does not support the Mac OS or Linux operating systems.

The 2019-2020 hourly rate for out-of-maintenance software support is \$200, billable in 1-hour increments. This rate also applies to support not covered by support agreements, such as on-site reinstallation onto new hardware or retraining. Hourly support can be provided by phone, web-meeting or on-site. On-site support requires client pre-approval and portal to portal hours and travel expenses are charged. SDR requires a signed Purchase Order before on-site support is performed. Time, material and expense invoices are due upon receipt. Please contact SDR for a quotation if training of new personnel or retraining of existing personnel is desired or if on-site re-installation onto new equipment is desired.

NOTE: All new software purchases include one year of warranty and maintenance.

**Attachment G to Addendum 1 to
STATE OF OKLAHOMA CONTRACT WITH SPATIAL DATA RESEARCH
RESULTING FROM STATE-WIDE NUMBER SW 1177**

The parties agree to use this Proposed Schedule or a document substantially similar in the form of the Proposed Schedule.

Proposed Schedule-Sample for Informational Purposes

Item	Task	Description	Start	Finish
1.1	Project Administration and Set-Up	Create Project Contacts Matrix	5/2/16	5/2/16
1.2		Establish Client Liaison	5/2/16	5/2/16
1.3		Update Project Schedule based on contract date	5/3/16	5/3/16
1.4		Create Project Directories and Sharefile Links	5/3/16	5/3/16
2.1	Data Acquisition	Acquire ACOG GIS Data	5/4/16	5/4/16
2.2		Acquire Supporting GIS data	5/4/16	5/4/16
2.3		Acquire Paper Maps	5/3/16	5/6/16
2.4		Acquire Utility and other databases	5/3/16	5/6/16
2.5		Create Data Matrix	5/6/16	5/6/16
3.1	Data Analysis and Correction	Check/Correct Road Topology	5/9/16	5/13/16
3.2		Check/Correct Road Name Parsing	5/9/16	5/9/16
3.3		Standardize Road Names	5/9/16	5/9/16
3.4		Address Point to Road Centerline Compare/Correction	5/9/16	5/9/16
3.5		Identify/Add Missing Roads & Address Points from Imagery	5/9/16	5/9/16
4.1	On-site Project Kick-Off	Acquire Additional Map/DB Resources	5/16/16	5/17/16
4.2		Review Project Schedule & Deliverables	5/16/16	5/16/16
4.3		Field Verification Press Release	5/17/16	5/17/16
5.1	GPS Field Data Collection and Verification		5/18/16	6/30/16
6.1	Post-Processing, QA and Database Integration	QA of field data	7/1/16	7/8/16
6.2		Update Corporate Boundary	7/1/16	7/1/16
6.3		Integrate Utility Record Data in Address Points	7/11/16	7/15/16
6.4		Create GIS layer of Infrastructure Points from Coordinate data	7/15/16	7/15/16

6.5		Resolve GIS data flags from field work	7/11/16	7/15/16
6.6		Align roads to imagery/GPS where needed	7/18/16	7/22/16
7.1	Data Delivery and Set-Up	Set up/Install final data on-site	7/25/16	7/29/16
7.2		ArcGIS training	7/25/16	7/29/16
7.3		AddressIt training (optional)	7/25/16	7/29/16



OKLAHOMA
Office of Management
& Enterprise Services

**State of Oklahoma
Template J
Hosting Agreement**

TEMPLATE J – HOSTING AGREEMENT

Title: Hosting Agreement
Use: Include in all contractual vehicles that include a hosted component
Purpose: Ensures appropriate hosting concepts are considered to adequately protect state data

HOSTING AGREEMENT

This Hosting Agreement (“Hosting Agreement”) is a Contract Document in connection with the Contract issued as a result of Solicitation No. 0900000417 (the “Contract”) and entered into between Spatial Data Research, Inc (“Vendor”) and the State of Oklahoma by and through the Office of Management and Enterprise Services (“State” or “Customer”), the terms of which are incorporated herein. This Hosting Agreement is applicable to any Customer Data stored or hosted by Vendor in connection with the Contract. Unless otherwise indicated herein, capitalized terms used in this Hosting Agreement without definition shall have the respective meanings specified in the Contract.

I. Definitions

- a. “Customer Data” shall mean all data supplied by or on behalf of Customer in connection with the Contract, excluding any confidential information of Vendor.
- b. “Data Breach” shall mean the unauthorized access by an unauthorized person that results in the access, use, disclosure or theft of Customer Data.
- c. “Non-Public Data” shall mean Customer Data, other than Personal Data, that is not subject to distribution to the public as public information. It is deemed to be sensitive and confidential by Customer because it contains information that is exempt by statute, ordinance or administrative rule from access by the general public as public information. Non-Public Data includes any data deemed confidential pursuant to the Contract, otherwise identified by Customer as Non-Public Data, or that a reasonable person would deem confidential.
- d. “Personal Data” shall mean Customer Data that contains 1) any combination of an individual’s name, social security numbers, driver’s license, state/federal identification number, account number, credit or debit card number and/or 2) contains electronic protected health information that is subject to the Health Insurance Portability and Accountability Act of 1996, as amended.

II. Customer Data

- a. Customer will be responsible for the accuracy and completeness of all Customer Data provided to Vendor by Customer. Customer shall retain exclusive ownership of all Customer Data. Non-Public Data and Personal Data shall be deemed to be Customer's confidential information. Vendor shall restrict access to Customer Data to their employees with a need to know (and advise such employees of the confidentiality and non-disclosure obligations assumed herein).
- b. Vendor shall promptly notify the Customer upon receipt of any requests from unauthorized third parties which in any way might reasonably require access to Customer Data or Customer's use of the hosted environment. Vendor shall notify the Customer by the fastest means available and also in writing pursuant to Contract notice provisions and the notice provision herein. Except to the extent required by law, Vendor shall not respond to subpoenas, service or process, FOIA requests, and other legal request related to Customer without first notifying the Customer and obtaining the Customer's prior approval, which shall not be unreasonably withheld, of Vendor's proposed responses. Vendor agrees to provide its completed responses to the Customer with adequate time for Customer review, revision and approval.
- c. Vendor will use commercially reasonable efforts to prevent the loss of or damage to Customer Data in its possession and will maintain commercially reasonable back-up procedures and copies to facilitate the reconstruction of any Customer Data that may be lost or damaged by Vendor. Vendor will promptly notify Customer of any loss, damage to, or unauthorized access of Customer Data. Vendor will use commercially reasonable efforts to reconstruct any Customer Data that has been lost or damaged by Vendor as a result of its negligence or willful misconduct. If Customer Data is lost or damaged for reasons other than as a result of Vendor's negligence or willful misconduct, Vendor, at the Customer's expense, will, at the request of the State, use commercially reasonable efforts to reconstruct any Customer Data lost or damaged.

III. Data Security

- a. Vendor will use commercially reasonable efforts, consistent with industry standards, to provide security for the hosted environment and Customer Data and to protect against both unauthorized access to the hosting environment, and unauthorized communications between the hosting environment and the Customer's browser. Vendor shall implement and maintain appropriate administrative, technical and organizational security measures to safeguard against unauthorized access, disclosure or theft of Personal Data and Non-Public Data. Such security measures shall be in accordance with recognized industry practice

and not less stringent than the measures the Vendor applies to its own personal data and non-public data of similar kind.

- b. All Personal Data and Non-public Data shall be encrypted at rest and in transit with controlled access. Unless otherwise stipulated, the Vendor is responsible for encryption of Personal Data.
- c. Vendor represents and warrants to the Customer that the hosting equipment will be routinely checked with a commercially available, industry standard software application with up-to-date virus definitions. Vendor will regularly update the virus definitions to ensure that the definitions are as up-to-date as is commercially reasonable. Vendor will promptly purge all viruses discovered during virus checks. If there is a reasonable basis to believe that a virus may have been transmitted to Customer by Vendor, Vendor will promptly notify Customer of such possibility in a writing that states the nature of the virus, the date on which transmission may have occurred, and the means Vendor has used to remediate the virus. Should the virus propagate to Customer's IT infrastructure, Vendor is responsible for costs incurred by Customer for Customer to remediate the virus.
- d. Vendor shall provide its services to Customer and its users solely from data centers in the U.S. Storage of Customer Data at rest shall be located solely in data centers in the U.S. Vendor shall not allow its personnel or contractors to store Customer Data on portable devices, including personal computers, except for devices that are used and kept only at its U.S. data centers. Vendor shall permit its personnel and contractors to access Customer Data remotely only as required to fulfill Vendor's obligations under the Contract.
- e. Vendor shall allow the Customer to audit conformance to the Contract terms. The Customer may perform this audit or contract with a third party at its discretion and at Customer's expense.
- f. Vendor shall perform an independent audit of its data centers at least annually at its expense, and provide a redacted version of the audit report upon request. Vendor may remove its proprietary information from the redacted version. A Service Organization Control (SOC) 2 audit report or approved equivalent sets the minimum level of a third-party audit.

IV. Security Assessment

- a. The State requires any entity or third-party vendor hosting Oklahoma Customer Data to submit to a State Certification and Accreditation Review process to assess initial security risk. Vendor submitted to the review and met the State's minimum security standards at time the Contract was executed. Failure to maintain the State's

minimum security standards during the term of the Contract, including renewals, constitutes a material breach.

- b. To the extent Vendor requests a different sub-contractor than the third-party hosting vendor already approved by the State, the different sub-contractor is subject to the State's approval. Vendor agrees not to migrate State's data or otherwise utilize a different third-party hosting vendor in connection with key business functions that are Vendor's obligations under the Contract until the State approves the third-party hosting vendor's State Certification and Accreditation Review, which approval shall not be unreasonably withheld or delayed. In the event the third-party hosting vendor does not meet the State's requirements under the State Certification and Accreditation Review, Vendor acknowledges and agrees it may not utilize such third-party vendor in connection with key business functions that are Vendor's obligations under the Contract, until such third party meets such requirements.

V. Security Incident Notification and Responsibilities: Vendor shall inform Customer of any Security Incident or Data Breach

- a. Vendor may need to communicate with outside parties regarding a Security Incident, which may include contacting law enforcement, fielding media inquiries and seeking external expertise as mutually agreed upon, defined by law or contained in the Contract. If a Security Incident involves Customer Data, Vendor will coordinate with Customer prior to making any such communication.
- b. Vendor shall report a Security Incident to the Customer identified contact set forth herein within five (5) days of discovery of the Security Incident or within a shorter notice period required by applicable law or regulation (i.e. HIPAA requires notice to be provided within 24 hours).
- c. Vendor shall: (i) maintain processes and procedures to identify, respond to and analyze Security Incidents; (ii) make summary information regarding such procedures available to Customer at Customer's request, (iii) mitigate, to the extent practicable, harmful effects of Security Incidents that are known to Vendor; and (iv) documents all Security Incidents and their outcomes.

VI. Data Breach Notification and Responsibilities: This section only applies when a Data Breach occurs with respect to Personal Data or Non-Public Data within the possession or control of Vendor.

- a. Vendor, unless stipulated otherwise, shall promptly notify the Customer identified contact within 2 hours or sooner, unless shorter time is required by applicable law, if it confirms that there is, or reasonably believes that there has been a Data Breach.

Vendor shall (1) cooperate with Customer as reasonably requested by Customer to investigate and resolve the Data Breach, (2) promptly implement necessary remedial measures, if necessary, and (3) document responsive actions taken related to the Data Breach, including any post-incident review of events and actions taken to make changes in business practices in providing the services, if necessary.

- b. Unless otherwise stipulated, if a Data Breach is a direct result of Vendor's breach of its obligation to encrypt Personal Data and Non-Public Data or otherwise prevent its release, Vendor shall bear the costs associated with (1) the investigation and resolution of the Data Breach; (2) notifications to individuals, regulators or others required by state law; (3) credit monitoring services required by state or federal law; (4) a website or toll-free numbers and call center for affected individuals required by state law – (2), (3) and (4) not to exceed the agency per record per person cost calculated for data breaches in the United States on the most recent Cost of Data Breach Study: Global Analysis published by the Ponemon Institute at the time of the Data Breach; and (5) complete all corrective actions as reasonably determined by Vendor based on root cause.
- c. If a Data Breach is a direct result of Vendor's breach of its obligations to encrypt Personal Data and Non-Public Data or otherwise prevent its release, Vendor shall indemnify and hold harmless the Customer against all penalties assessed to Indemnified Parties by governmental authorities in connection with the Data Breach.

VII. Notice: Contact information for Customer for notifications pursuant this Hosting Agreement are consistent with the Contract with a copy sent to:

Chief Information Officer
3115 N. Lincoln Blvd
Oklahoma City, OK 73105

And

Chief Information Security Officer
3115 N. Lincoln Blvd
Oklahoma City, OK 73105

And

OMES Information Services General Counsel
3115 N. Lincoln Blvd
Oklahoma City, OK 73105

For immediate notice which does not constitute written notice:

OMES Service Desk

405-521-2444

servicedesk@omes.ok.gov

Attn: Chief Information Security Officer

VIII. Vendor Representations and Warranties: Vendor represents and warrants the following

- a. The product and services provided under this Hosting Agreement do not infringe a third party's patent or copyright or other intellectual property rights.
- b. Vendor will protect Customer's Non-Public Data and Personal Data from unauthorized dissemination and use with the same degree of care that each such party uses to protect its own confidential information and, in any event, will use no less than a reasonable degree of care in protecting such confidential information.
- c. The execution, delivery and performance of the Contract, the Hosting Agreement and any ancillary documents and the consummation of the transactions contemplated by the Contract or any ancillary documents by Vendor will not violate, conflict with, or result in a breach of any provision of, or constitute a default (or an event which, with notice or lapse of time or both, would constitute a default) under, or result in the termination of, any written contract or other instrument between Vendor and any third parties retained or utilized by Vendor to provide goods or services for the benefit of the Customer.
- d. Vendor shall not knowingly upload, store, post, e-mail or otherwise transmit, distribute, publish or disseminate to or through the Hosting Environment any material that contains software viruses, malware or other surreptitious code designed to interrupt, destroy or limit the functionality of any computer software or hardware or telecommunications equipment or circumvent any "copy-protected" devices, or any other harmful or disruptive program.

IX. Indemnity

- a. Vendor's Duty of Indemnification. Vendor agrees to indemnify and shall hold the State of Oklahoma and State, its officers, directors, employees, and agents harmless from all liabilities, claims, damages, losses, costs, expenses, demands, suits and actions of third parties (including without limitation reasonable attorneys' fees) (collectively "Damages") (other than Damages that are the fault of Customer) arising from or in connection with Vendor's breach of its express representations and warranties or other obligations in this Hosting Agreement and the Contract. If a third party claims that any portion of the products or services provided by Vendor

under the terms of the Contract or this Hosting Agreement infringes that party's patent or copyright, Vendor shall defend and indemnify the State of Oklahoma and Customer against the claim at Vendor's expense and pay all related costs, damages, and attorney's fees incurred by or assessed to, the State of Oklahoma and/or Customer. The State of Oklahoma and/or Customer shall promptly notify Vendor of any third party claims and to the extent authorized by the Attorney General of the State, allow Vendor to control the defense and any related settlement negotiations. If the Attorney General of the State of Oklahoma does not authorize sole control of the defense and settlement negotiations to Vendor, Vendor shall be granted authorization to equally participate in any proceeding related to this section but Vendor shall remain responsible to indemnify Customer and the State of Oklahoma for all associated costs, damages and fees incurred by or assessed to the State of Oklahoma and/or Customer. Should the software become, or in Vendor's opinion, be likely to become the subject of a claim or an injunction preventing its use as contemplated under this Hosting Agreement, Vendor may, at its option (i) procure for the State the right to continue using the software or (ii) replace or modify the software with a like or similar product so that it becomes non-infringing.

X. Termination and Suspension of Service:

- a. In the event of a termination of the Contract, Vendor shall implement an orderly return of Customer Data in a mutually agreeable format at a time agreed to by the parties and the subsequent secure disposal of Customer Data.
- b. During any period of service suspension, Vendor shall not take any action to intentionally erase any Customer Data.
- c. In the event of termination of any services or agreement in entirety, Vendor shall not take any action to intentionally erase any Customer Data for a period of:
 - i. 10 days after the effective date of termination, if the termination is in accordance with the contract period
 - ii. 30 days after the effective date of termination, if the termination is for convenience
 - iii. 60 days after the effective date of termination, if the termination is for cause

After such period, Vendor shall have no obligation to maintain or provide any Customer Data and shall thereafter, unless legally prohibited or otherwise stipulated, delete all Customer Data in its systems or otherwise in its possession or under its control.

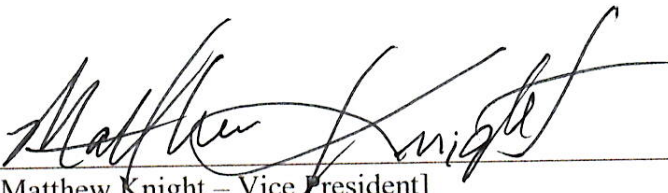
- d. The State shall be entitled to any post termination assistance generally made available with respect to the services.
- e. Vendor shall securely dispose of all requested data in all of its forms, such as disk, CD/DVD, backup tape and paper, when requested by the Customer. Data shall be permanently deleted and shall not be recoverable, according to National Institute of Standards and Technology (NIST)-approved methods. Certificates of destruction shall be provided to Customer.

Signature Block

IN WITNESS WHEREOF, each person executing this Contract below represents that he or she is authorized to enter into this Contract on behalf of such party and each party expressly agrees to the terms and conditions of this Contract.

VENDOR:

[Spatial Data Research, Inc.]


[Matthew Knight – Vice President]

04/10/2020
Date

STATE:

State of Oklahoma by and through the Office of Management and Enterprise Services on behalf of [insert agency name]

[insert printed name and title]

Date