CAECD Board of Managers | Agenda

10:30 a.m., or upon adjournment of the Executive Committee
Wednesday, October 11, 2023
CAPCOG Lantana Room
6800 Burleson Road, Bld. 310, Ste. 155
Austin, Texas 78744

Judge James Oakley, Burnet County, **Chair**
Mayor Lew White, City of Lockhart, **First Vice Chair**
Commissioner Debbie Ingalsbe, Hays County, **Second Vice Chair**
Mayor Pro Tem Matthew Baker, City of Round Rock, **Secretary**
Mayor Jane Hughson, City of San Marcos, **Parliamentarian**
Mayor Brandt Rydell, City of Taylor, **Immediate Past Chair**
Council Member Mackenzie Kelly, City of Austin
Commissioner Clara Beckett, Bastrop County
Ms. Connie Schroeder, City of Bastrop
Council Member Kevin Hight, City of Bee Cave
Judge Brett Bray, Blanco County
Commissioner Joe Don Dockery, Burnet County

Judge Hoppy Haden, Caldwell County
Judge Dan Mueller, Fayette County
Council Member Ron Garland, City of Georgetown
Mayor Pro Tem Esmeralda Mattke Longoria, City of Leander
Commissioner Steven Knobloch, Lee County
Judge Ron Cunningham, Llano County
Mayor Pro Tem Doug Weiss, City of Pflugerville
Council Member Janice Bruno, City of Smithville
Judge Andy Brown, Travis County
Commissioner Ann Howard, Travis County
Commissioner Russ Boles, Williamson County
Commissioner Cynthia Long, Williamson County
Senator Pete Flores
Representative Stan Gerdes
Representative Terry Wilson

1. **Call to Order and opening remarks by the Chair**

2. **Consider Approving Minutes for the July 12, 2023 CAECD Board of Managers Meeting**

3. **Consider Accepting the Financial Report for the Period October 1, 2022 to August 31, 2023**
   Silvia Alvarado, Director of Finance

4. **Consider Amending FY 2024 Budget to Carry Forward Incomplete FY 2023 Projects and Update Operating Costs**
   Andrew Hoekzema, Deputy Executive Director

5. **Consider Approving Contract with Juvare for WebEOC Subscription**
   Dee Harrison, Homeland Security Program Manager

6. **Consider Approving Purchase of Aerial Imagery**
   Rob Buckhouse, GIS Program Manager
   Charles Simon, Director of Regional Planning & Services

7. **Consider Approving Appointments for Advisory Committee**
   Betty Voights, Executive Director

8. **Staff Reports**
   Betty Voights, Executive Director

9. **Adjourn**

A closed executive session may be held on any of the above agenda items when legally justified pursuant to Subchapter D of the Texas Open Meetings Act (Texas Government Code Chapter 551).

CAECD Board of Managers | Summary Minutes

10:30 a.m. or upon adjournment of the Executive Committee, Wednesday, July 12, 2023
6800 Burleson Road
Building 310, Suite 165
Austin, Texas 78744

Present (17)

Judge James Oakley, Burnet County, **Chair**	Commissioner Clara Beckett, Bastrop County
Mayor Lew White, City of Lockhart, **1st Vice Chair**	Council Member Kevin Hight, City of Bee Cave
Commissioner Debbie Ingalsbe, Hays County, **2nd Vice Chair**	Judge Brett Bray, Blanco County
	Commissioner Joe Don Dockery, Burnet County
Council Member Matthew Baker, City of Round Rock, **Secretary**	Judge Hoppy Haden, Caldwell County
	Mayor Pro Tem Esme Mattke Longoria, City of Leander
Mayor Jane Hughson, City of San Marcos, **Parliamentarian**	Commissioner Steven Knobloch, Lee County
	Judge Ron Cunningham, Llano County
Mayor Brandt Rydell, City of Taylor, **Immediate Past Chair**	Council Member Janice Bruno, City of Smithville
	Commissioner Russ Boles, Williamson County
Council Member Mackenzie Kelly, City of Austin	

Absent (7)

Ms. Connie Schroeder, City of Bastrop	Judge Andy Brown, Travis County
Judge Dan Mueller, Fayette County	Commissioner Ann Howard, Travis County
Council Member Ron Garland, City of Georgetown	Commissioner Cynthia Long, Williamson County
Mayor Pro Tem Doug Weiss, City of Pflugerville	

1. **Call to Order and opening remarks by the Chair**
   Judge Oakley called the meeting to order at 11:07 a.m.

2. **Consider Approving Minutes for the June 14, 2023 Meeting**
   Judge Oakley asked the board to approve the June 14, 2023, meeting minutes. Judge Cunningham made the motion. Commissioner Dockery seconded the motion. It passed unanimously.

3. **Consider Accepting the Financial Report for the Period October 1, 2022 to May 31, 2023**
   Silvia Alvarado, Director of Finance
   Ms. Alvarado said the financial report is for the eight months from Oct. 1, 2022, to May 31, 2023, and shows a fund balance of $30.8 million, which represents funds for upcoming capital projects, existing budget obligations, and operational and equipment reserves. She said revenues of $11.5 million was slightly higher than projected, and expenditures of $10.4 million were slightly lower than projected, which was due to the timing of accruing expenses.

   Commissioner Boles made a motion to accept the financial report for the period from Oct. 1, 2022, to May 31, 2023. Council Member Bruno seconded the motion.

   Judge Bray asked if the expenditures in the budget were at about 53 percent of the expected budget compared to being 80 percent completed with the year. Ms. Alvarado said most of the unspent expenditures are allocated to capital projects, which will rollover to the next fiscal year if projects are not completed.

   Judge Oakley called for a vote. The motion passed unanimously.

4. **Consider Adopting Resolution Setting the 9-1-1 Service Fee for FY2024**
   Richard Morales Jr., Director of Emergency Communications
   Mr. Morales said every year the board must set the 9-1-1 services fee on landline phones, and it has stayed at 50 cents. He noted revenue from the fee has been decreasing as the number of landline phones dwindle; however, more revenue is being made from cellphone service fees set by the state. He said he is recommending to keep the 50 cent rate, and if an increase is needed, CAPCOG would request one during a year when a public hearing on the fee is required.

   Commissioner Ingalsbe made a motion to set the 9-1-1 service fee for FY 2024 at 50 cents. Mayor White seconded the motion. It passed unanimously.

5. **Consider Approving an Amendment to FY 2023 CAECD Budget**
   Andrew Hoekzema, Deputy Executive Director
   Mr. Hoekzema said the proposed budget amendment would add the Senate Bill 8 funds of $8.5 million for call-handling equipment and funds related to the Kyle PSAP relocation. He said it also shifts funds from a Hays County secondary connectivity project to the new call-handling system project. Mr. Hoekzema said the amendment allocates fund balance/unassigned monies for the purchases of a Burnet County recorder, PSAP operation mapping services and a new backup generator at CAPCOG. Mr. Hoekzema noted the CAECD has received more than $800,000 in interest from investments this year. The budget amendment would make the fund balance about $30 million with $5 million for equipment reserves, $12 million for operating reserves, and money to cover capital projects and the initial purchase of the call-handling system.

   Judge Bray asked if the fund balance would be lowering. Ms. Voights clarified the funds will be moved from the unassigned fund balance, leaving the total fund balance at about $22 million.

   Mayor Hughson made a motion to amend the FY 2023 CAECD Budget. Judge Cunningham seconded the motion. It was passed unanimously.

6. **Consider Approving the FY 2024 CAECD Budget**
   Andrew Hoekzema, Deputy Executive Director
   Mr. Hoekzema said the proposed FY 2024 CAECD budget includes revenue decreases in landline and prepaid phone card service fees but projects an increase in wireless services fees. He noted that revenue from interest also showed a large increase. Mr. Hoekzema highlighted some expenditures anticipated for FY 2024 to include dual maintenance of call-handling systems as the new system is installed and tested, the Next Generation 9-1-1 (NG 9-1-1) equipment cost, spending increases in the training and public education budget and for operating the regional notification system and WebEOC – both which are paid for by the district but managed by the Homeland Security Division. He noted the largest cost was $11.7 million for purchasing and installing the new call-handling equipment.

   Mr. Hoekzema said the proposed CAECD FY 2024 Budget projects $17 million in revenues and just less than $16 million in expenditures. He said the budget also puts $500,000 into the reserves, which should have a $13 million by 2025.

   Mayor Hughson made a motion to approve the FY 2024 CAECD Budget. Council Member Bruno seconded the motion. It passed unanimously.

7. **Consider Approving 9-1-1 GIS Contracts**
   Charles Simon, Director of Regional Planning & Services
   Mr. Simon said the GIS contracts come before the board every year, and this year they reflect an increase cost of 2.54 percent. He went over the changes to the contract but noted the largest changes are based on

updates to the National Emergency Number Association (NENA) standards for implementing and operating NG 9-1-1. Mr. Simon said directions for following those standards are in documents included with the contract; however, CAPCOG staff also wrote a programing script that would help implement the database changes needed for NG 9-1-1.

Judge Cunningham asked if CAPCOG reviewed the changes with county GIS staff members. Mr. Simon said NENA and CAPCOG presented the changes to the GIS Planning Council and mentioned that CAPCOG would host workshops to implement the changes. Commissioner Beckett asked if approval of contracts could be delayed so county staff could review the changes. Ms. Voights said the only changes were those required by NENA for NG 9-1-1, and they are necessary.

Mayor White motioned to approve the 9-1-1 GIS Contracts. Commissioner Dockery seconded the motion. It passed unanimously with Commissioner Beckett abstaining.

8. **Consider Approving Appointments for Advisory Committee**
   Betty Voights, Executive Director
   Judge Oakley asked if there were any appointments to consider. Hearing none, he noted there was no action to be taken.

9. **Staff Reports**
   Betty Voights, Executive Director
   Ms. Voights said Mr. Morales has created a document about classroom panic buttons that can help school districts evaluate issues related to panic button vendors and best practices for how classroom panic buttons should operate. She noted that some school districts have already requested to become their own PSAP after the legislation related to panic buttons was approved but that is not a realistic approach.

10. **Adjourn**
    Judge Oakley adjourned the meeting at 11:47 a.m.

_____   _____
Mayor Pro Tem Matthew Baker, Secretary   Date
Board of Managers
Capital Area Emergency Communications District

CAPITAL AREA EMERGENCY COMMUNICATIONS DISTRICT
BOARD OF MANAGERS MEETING

MEETING DATE: **October 11, 2023**

AGENDA ITEM: **#3 Consider Accepting the Financial Report for the Period of October 1, 2022 to August 31, 2023**

GENERAL DESCRIPTION OF ITEM:

This is the fiscal year to date financial report for CAECD, for the eight months beginning October 1, 2022, to August 31, 2023. Included in the report is the Balance Sheet indicating total assets, liabilities, and fund equity, and the Statement of Revenues and Expenditures. The fund equity balance of $30,848,660 represents resources planned to be used to support continuing operations, for meeting existing obligations, and for maintaining the reserves set aside to cover contingency emergency operations, and equipment replacement.

Total Revenues as of August 31, 2023,	$ 16,240,841
Total Expenditures as of August 31, 2023,	$ 15,262,014

The financial statements have been prepared in accordance with applicable state and federal requirements and are unaudited.

THIS ITEM REPRESENTS A:
- ☐ New issue, project, or purchase
- ☒ Routine, regularly scheduled item
- ☐ Follow-up to previously discussed item
- ☐ Special item requested by board member
- ☐ Other

PRIMARY CONTACT/STAFF MEMBER: Silvia Alvarado, CAPCOG Director of Finance

BUDGETARY IMPACT OF AGENDA ITEM:
- Total estimated cost: N/A
- Source of funds:
- Is item already included in fiscal year budget? ☐Yes ☐No
- Does item represent a new expenditure? ☐Yes ☐No
- Does item represent a pass-through purchase? ☐Yes ☐No
- If so, for what city/county/etc.? _____

PROCUREMENT: N/A

ACTIONS REQUESTED:
Accept the financial report for the period of October 1, 2022, to May 31, 2023.

BACK-UP DOCUMENTS ATTACHED:
1. Unaudited Balance Sheet as of August 31, 2023.
2. Unaudited Statement of Revenues and Expenditures as of August 31, 2023.

BACK-UP DOCUMENTS __NOT__ ATTACHED (*to be sent prior to meeting* or *will be a handout at the meeting*): None

Capital Area Emergency Communications District

Balance Sheet - **Unaudited**

August 31, 2023

<u>Assets</u>

Cash and Short Term Investments	$	32,092,081.00
Accounts Receivable		1,287,837.00
Total Assets	$	33,379,918.00

<u>Liabilities and Fund Equity</u>

Accounts Payable	$	2,404,761.00
Due to CAPCOG		226,497.00
Total Liabilities	$	2,631,258.00
Beginning Fund Balance	$	29,769,833.00
Change in Fund Balance	$	978,827.00
Total in Fund Equity	$	30,748,660.00
Total Liabilities and Fund Equity	$	33,379,918.00

Capital Area Emergency Communications District

Statement of Revenue and Expenditures - **Unaudited**

For the Eleven Months Ending August 31, 2023

	Fiscal Year to Date Actual	Total Budget	Percent of Total Budget Remaining
Revenue			
911 Wireline Fees	$ 2,536,527.00	$ 2,740,567.00	7%
911 Wireless Fees	11,086,377.00	11,347,332.00	2%
911 Prepaid Wireless Fees	1,160,440.00	1,396,304.00	17%
911 Private Switch	32,029.00	71,783.00	55%
911 Other Revenues	197,934.00	197,934.00	-
Checking Acct Interest	1,341.00	100.00	1241%
Investment Interest	1,226,193.00	20,000.00	(6,031)%
Grants Awarded	0.00	8,835,500.00	100%
Total Revenue	$ 16,240,841.00	$ 24,609,520.00	34%
Expenditures			
911-Program Management	$ 2,164,953.00	$ 3,199,701.00	32 %
911-Network	4,724,041.00	4,503,067.00	(5)%
911-GIS/DB Maintenance	1,962,250.00	2,546,074.00	23 %
911-Equipment Maintenance	780,838.00	1,429,161.00	45 %
911-PSAP Services	721,032.00	1,271,246.00	43 %
911-Training & Education	1,251,632.00	1,520,637.00	18 %
911-Capital Projects	3,120,788.00	17,821,846.00	82 %
Regional Notification System	444,827.00	615,768.00	28 %
WebEOC	91,654.00	197,525.00	54 %
Total Expenditures	$ 15,262,014.00	$ 33,105,025.00	54 %
Net Revenue Over(Under) Expenditures	$ 978,827.00	$ (8,495,505.00)	

CAPITAL AREA EMERGENCY COMMUNICATIONS DISTRICT
BOARD OF MANAGERS MEETING

MEETING DATE: <u>October 11, 2023</u>

AGENDA ITEM: <u>#4 Consider Amending FY 2024 Budget to Carry Forward Incomplete FY 2023 Projects and Update Operating Costs</u>

GENERAL DESCRIPTION OF ITEM:

Each October we include an agenda item for a budget amendment to carry forward incomplete portions of several capital projects that were included in the FY 2023 budget. This basically catches up the revenue with the projects that will be continued or implemented in the new fiscal year.

Traditionally we have several projects that stretch across several years, most noteworthy being the Motorola project that is still ongoing with Caldwell County and completion of the DSR in the Backup Center. We also needed to work through costs for the 9-1-1 call handling equipment including the maintenance costs. The original cost of the equipment purchase and Years 1-5 maintenance quoted May meeting was $18,806,585; ongoing negotiations resulted in a final amount of $18,745,421. Although we had un updated quote for Years 6-7 that was almost $3 million less than the one in the proposal, negotiations for these costs are not complete at this time. Other carry-forward funds cover the purchase of a new generator and GIS mapping that were added as budget amendments on the July agenda. Finally, we are adding a new project manager position in lieu of using a consulting firm to oversee the two-year process of equipment installation and testing; the cost of this will be approximately $144,000 that will be covered by our fund balance and savings from the consultant contract.

Also, large projects like the new 9-1-1 call handling equipment and maintenance are funded over a five-year period as allowed for when purchasing equipment and services from the AT&T Master Contract, a tool necessary for most COGs and Districts who will not have enough revenue to pay for a project in one year. Even with the SB8 funding of $8.8 million, we would have needed to spread the costs out so that project will be carried forward again on next year's October agenda.

THIS ITEM REPRESENTS A:

- ☐ New issue, project, or purchase
- ☒ Routine, regularly scheduled item
- ☐ Follow-up to previously discussed item
- ☐ Special item requested by board member
- ☐ Other

PRIMARY CONTACT/STAFF MEMBER: **Andrew Hoekzema, Deputy Executive Director**

BUDGETARY IMPACT OF AGENDA ITEM:

Total estimated cost: <u>$12,064,202</u>

Source of funds: <u>FY 2023 year-end fund balance, Commission on State Emergency Communications</u>

Is item already included in fiscal year budget? ☒Yes ☐No

Does item represent a new expenditure? ☐Yes ☒No

Does item represent a pass-through purchase? ☐Yes ☒No

If so, for what city/county/etc.? N/A

PROCUREMENT: N/A

ACTION REQUESTED:

Approve an Amendment to the FY 2024 CAECD Budget as Indicated in Attached Summary

BACK-UP DOCUMENTS ATTACHED:
Proposed FY 2024 Budget Amendment Summary

BACK-UP DOCUMENTS NOT ATTACHED (*to be sent prior to meeting* or *will be a handout at the meeting*): None

Proposed FY 2024 Budget Adjustment				
	FY 2023 Budget	Carry-Forward / Adjustment	FY 2024 Approved 7/12/2023	FY 2024 Adjusted 10/11/2023
Operating Costs				
Operating Costs	**$15,283,180**	**($339,366)**	**$15,543,828**	**$15,204,462**
Equipment and Projects				
Console Replacements and Integration	$11,739,267	$10,894,891	$443,028	$11,337,919
Caldwell County Tower Site	$1,070,748	$384,952	$0	$384,952
Generator Replacement	$300,000	$300,000	$0	$300,000
Solacom Console Replacements and Spares	$225,000	$225,000	$0	$225,000
BUC/RBUC/DSR	$1,930,811	$211,690	$0	$211,690
Contracted Services (Best Practices Study)	$200,000	$200,000	$0	$200,000
Llano County Radio Dispatch and Network Connectivity	$935,175	$187,035	$0	$187,035
Burnet County Dispatch Consoles	$486,912	$0	$0	$0
UPS Host Replacement/PSAP	$895,000	$0	$0	$0
Kyle PSAP Relocation	$177,884	$0	$0	$0
Burnet County Recorder	$61,049	$0	$0	$0
Subtotal - Equipment and Projects	**$18,021,846**	**$12,403,568**	**$443,028**	**$12,846,596**
TOTAL	**$33,305,026**	**$12,064,202**	**$15,986,856**	**$28,051,058**

CAPITAL AREA EMERGENCY COMMUNICATIONS DISTRICT
BOARD OF MANAGERS MEETING

MEETING DATE:　　　　**October 11, 2023**

AGENDA ITEM:　　　　**#5 Consider Approving Contract with Juvare for WebEOC Subscription**

GENERAL DESCRIPTION OF ITEM:
WebEOC is used by the region's Emergency Managers, emergency responders, public health facilities, schools, institutions of higher education, and communications officers as a platform for local and regional situational awareness. This proprietary software helps users identify, request, and track available and deployed resources, and to document operations and activities. There are nearly 2,500 authorized WebEOC users in more than 500 and organizations spanning the CAPCOG 10-county region.

The CAECD board approved a five-year subscription to WebEOC in 2016 and has been annually renewing the service since then. In order to secure longer-term pricing and to align the renewal period with CAPCOG's fiscal year, we are seeking CAECD board approval to extend the subscription from 1/1/2024 – 9/30/2024, and further authorization to renew the subscription in subsequent years out to 9/30/2028 without requiring further approval from this board. The costs for each period are:

1. 1/1/2024 – 9/30/2024:　　　　$53,220.76 ($70,961.01 annualized)
2. 10/1/2024 – 9/30/2025:　　　　$77,347.49
3. 10/1/2025 – 9/30/2026:　　　　$79,667.91
4. 10/1/2026 – 9/30/2027:　　　　$82,057.94
5. 10/1/2027 – 9/30/2028:　　　　$84,519.68

Since WebEOC is a proprietary product offered by Juvare and since CAPCOG and the region have invested a significant amount of time and effort into the system, this is a non-competitive, sole-source procurement under section 3-205 of CAPCOG's procurement policy. CAPCOG considers the costs reasonable in light of the cost for CAPCOG's most recent full 1-year renewal of $70,961 for 6/1/2022 – 5/31/2023. The CAECD budget included $70,000 for a WebEOC subscription with another $1,500 budgeted for contingency expenses, so this price fits within that budgeted amount.

THIS ITEM REPRESENTS A:
- ☒ New issue, project, or purchase
- ☐ Routine, regularly scheduled item
- ☐ Follow-up to previously discussed item
- ☐ Special item requested by board member
- ☐ Other

PRIMARY CONTACT/STAFF MEMBER:　　　　　　**Dee Harrison, Homeland Security Program Manager**

BUDGETARY IMPACT OF AGENDA ITEM:
　　Total estimated cost: $376,813.78
　　Source of funds: 9-1-1 Service Fees
　　Is item already included in fiscal year budget?　☒Yes　　☐No
　　Does item represent a new expenditure?　　☐Yes　　☒No
　　Does item represent a pass-through purchase?　☐Yes　　☒No
　　If so, for what city/county/etc.?　N/A

PROCUREMENT: Non-Competitive – Sole Source

ACTION REQUESTED:
Authorize a 9-month subscription to WebEOC and authorize the Executive Director to approve up to four 1-year extensions

BACK-UP DOCUMENTS ATTACHED:
1. Quotes for WebEOC for 1/1/2024 – 9/30/2028
2. Sole Source Letter from Juvare
3. Existing Juvare Contract

BACK-UP DOCUMENTS NOT ATTACHED (*to be sent prior to meeting* or *will be a handout at the meeting*): None

When you send in a Purchase Order for the items below,
THE PURCHASE ORDER MUST INCLUDE THE
QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED

Quote Number: Q-12349

Quote Date: 9/20/2023

Quote for: Capital Area Council of Governments (CAPCOG), TX - 9 Month Bridge Renewal - 1/1/2024 - 9/30/2024

Quote Expires: 1/1/2024

Quote To:

Capital Area Council of Governments (CAPCOG), TX
6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Ship To:

Capital Area Council of Governments (CAPCOG), TX
6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Quote Contact:
Martin Ritchey, Director
mritchey@capcog.org | (512) 916-6026

Thank you for your support of Juvare products and services! When you are ready to proceed with a Purchase Order:
- Address all Purchase Orders to **ESi Acquisition, Inc., 235 Peachtree Street NE, Suite 2300, Atlanta, Georgia 30303.**
- The terms and conditions of the master agreement by and between Juvare, LLC (or the above affiliate) and the Client, as set forth in the applicable master agreement, shall govern and control this Quote and all services, products and deliverables provided pursuant to this Quote. Any terms and conditions in the purchase order that attempt to add, change, remove or otherwise modify terms and conditions set forth in such master agreement shall not be effective unless and until signed in a written amendment by and between the parties to the master agreement. Any such modifications via a purchase order shall be deemed null and void.
- Quotes issued in **US Dollars** and are exclusive of applicable taxes and travel expenses. Items not manufactured by Juvare are subject to change. Substitutes will be provided for customer consideration and approval.

Juvare Contact
Oliver Oetterer
(203) 491-8650
oliver.oetterer@juvare.com

Year 1

ITEM NUMBER	DESCRIPTION	SALES PRICE	QTY	TOTAL PRICE
102-T-ENT-NNF	Term - WebEOC Enterprise New without Fusion (5 Admin, 10 Sub-Admin, 750 Users) Maintenance Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$21,225.00	1.00	$21,225.00
102-T-UB-ADMIN	Term - WebEOC User Bundle (10 Sub-Admin) Maintenance Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$577.50	8.00	$4,620.00
102-T-AGIS-1	Term - ArcGIS Extension Maintenance Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$1,485.00	1.00	$1,485.00
102-P-MAP-1	Perpetual - Maps Add-On Maintenance Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$3,217.50	1.00	$3,217.50
103-H-ENT-750	ASP Hosting - WebEOC Enterprise (Up to 750 Users) Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$19,414.51	1.00	$19,414.51
103-H-MAP-1	ASP Hosting - WebEOC Maps Add-On Pro-rated to 9 months: 1/1/2024 - 9/30/2024	$3,258.75	1.00	$3,258.75
			Year 1 Total:	$53,220.76

Contract Total *plus applicable taxes	USD 53,220.76

Additional Disclaimer

Work cannot be started and dates for services cannot be secured until the applicable initial payment or purchase order has been received. Pricing contained herein is based on configuration outlined above. Some items may not be sold separately. Pricing is valid until the expiration date set forth above.

If the "Bill To" entity above is tax-exempt, such entity shall be responsible for providing all necessary documentation to show such tax-exempt status.

Estimated amounts for Pre-Paid Travel Expenses are for informational purposes only; all Travel Expenses incurred by Juvare or its affiliate shall be invoiced to and paid by Client.

When you send in a Purchase Order (PO) for the items above,
THE PURCHASE ORDER MUST INCLUDE THE QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED.

We look forward to working with you and your staff!

ESi Acquisition, Inc., a Juvare Company
235 Peachtree Street NE, Suite 2300, Atlanta, Georgia 30303 | Phone: 866.200.0165
© Juvare, LLC. Proprietary and Confidential.

When you send in a Purchase Order for the items below,
**THE PURCHASE ORDER MUST INCLUDE THE
QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED**

Quote Number: Q-12404   **Quote Date:** 9/20/2023

Quote for: Capital Area Council of Governments **Quote Expires:** 10/1/2024
(CAPCOG), TX - Maintenance Renewal -
10/1/2024 - 9/30/2025

Quote To:

**Capital Area Council of Governments
(CAPCOG), TX**

6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Ship To:

**Capital Area Council of Governments
(CAPCOG), TX**

6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Quote Contact:

Martin Ritchey, Director
mritchey@capcog.org | (512) 916-6026

Thank you for your support of Juvare products and services! When you are ready to proceed
with a Purchase Order:

- Address all Purchase Orders to **ESi Acquisition, Inc., 235 Peachtree Street NE, Suite
2300, Atlanta, Georgia 30303.**
- The terms and conditions of the master agreement by and between Juvare, LLC (or the
above affiliate) and the Client, as set forth in the applicable master agreement, shall
govern and control this Quote and all services, products and deliverables provided
pursuant to this Quote. Any terms and conditions in the purchase order that
attempt to add, change, remove or otherwise modify terms and conditions set
forth in such master agreement shall not be effective unless and until signed in a
written amendment by and between the parties to the master agreement. Any such
modifications via a purchase order shall be deemed null and void.
- Quotes issued in **US Dollars** and are exclusive of applicable taxes and travel expenses.
Items not manufactured by Juvare are subject to change. Substitutes will be provided
for customer consideration and approval.

Year 1

ITEM NUMBER	DESCRIPTION	SALES PRICE	QTY	TOTAL PRICE
102-T-ENT-NNF	Term - WebEOC Enterprise New without Fusion (5 Admin, 10 Sub-Admin, 750 Users) Maintenance 10/1/2024 - 9/30/2025	$30,847.00	1.00	$30,847.00
102-T-UB-ADMIN	Term - WebEOC User Bundle (10 Sub-Admin) Maintenance 10/1/2024 - 9/30/2025	$839.30	8.00	$6,714.40
102-T-AGIS-1	Term - ArcGIS Extension Maintenance 10/1/2024 - 9/30/2025	$2,158.20	1.00	$2,158.20
102-P-MAP-1	Perpetual - Maps Add-On Maintenance 10/1/2024 - 9/30/2025	$4,676.10	1.00	$4,676.10
103-H-ENT-750	ASP Hosting - WebEOC Enterprise (Up to 750 Users) 10/1/2024 - 9/30/2025	$28,215.74	1.00	$28,215.74
103-H-MAP-1	ASP Hosting - WebEOC Maps Add-On 10/1/2024 - 9/30/2025	$4,736.05	1.00	$4,736.05
			Year 1 Total:	$77,347.49

Contract Total *plus applicable taxes	USD 77,347.49

Additional Disclaimer

Work cannot be started and dates for services cannot be secured until the applicable initial payment or purchase order has been received. Pricing contained herein is based on configuration outlined above. Some items may not be sold separately. Pricing is valid until the expiration date set forth above.

If the "Bill To" entity above is tax-exempt, such entity shall be responsible for providing all necessary documentation to show such tax-exempt status.

Estimated amounts for Pre-Paid Travel Expenses are for informational purposes only; all Travel Expenses incurred by Juvare or its affiliate shall be invoiced to and paid by Client.

When you send in a Purchase Order (PO) for the items above,
THE PURCHASE ORDER MUST INCLUDE THE QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED.

We look forward to working with you and your staff!

Juvare Contact
Oliver Oetterer
(203) 491-8650
oliver.oetterer@juvare.com

When you send in a Purchase Order for the items below,
THE PURCHASE ORDER MUST INCLUDE THE
QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED

Quote Number: Q-13386   **Quote Date:** 9/20/2023

Quote for: Capital Area Council of Governments **Quote Expires:** 10/1/2025
(CAPCOG), TX - Maintenance Renewal (3Yr) -
10/1/2025 - 9/30/2028

Quote To:

**Capital Area Council of Governments
(CAPCOG), TX**

6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Quote Contact:

Martin Ritchey, Director
mritchey@capcog.org | (512) 916-6026

Ship To:

**Capital Area Council of Governments
(CAPCOG), TX**

6800 Burleson Rd Bldg 310 Suite 165
Austin, Texas 78744

Thank you for your support of Juvare products and services! When you are ready to proceed
with a Purchase Order:

- Address all Purchase Orders to **ESi Acquisition, Inc., 235 Peachtree Street NE, Suite 2300, Atlanta, Georgia 30303.**
- The terms and conditions of the master agreement by and between Juvare, LLC (or the above affiliate) and the Client, as set forth in the applicable master agreement, shall govern and control this Quote and all services, products and deliverables provided pursuant to this Quote. Any terms and conditions in the purchase order that attempt to add, change, remove or otherwise modify terms and conditions set forth in such master agreement shall not be effective unless and until signed in a written amendment by and between the parties to the master agreement. Any such modifications via a purchase order shall be deemed null and void.
- Quotes issued in **US Dollars** and are exclusive of applicable taxes and travel expenses. Items not manufactured by Juvare are subject to change. Substitutes will be provided for customer consideration and approval.

Year 1

ITEM NUMBER	DESCRIPTION	SALES PRICE	QTY	TOTAL PRICE
102-T-ENT-NNF	Term - WebEOC Enterprise New without Fusion (5 Admin, 10 Sub-Admin, 750 Users) Maintenance 10/1/2025 - 9/30/2026	$31,772.41	1.00	$31,772.41
102-T-UB-ADMIN	Term - WebEOC User Bundle (10 Sub-Admin) Maintenance 10/1/2025 - 9/30/2026	$864.48	8.00	$6,915.83
102-T-AGIS-1	Term - ArcGIS Extension Maintenance 10/1/2025 - 9/30/2026	$2,222.95	1.00	$2,222.95
102-P-MAP-1	Perpetual - Maps Add-On Maintenance 10/1/2025 - 9/30/2026	$4,816.38	1.00	$4,816.38
103-H-ENT-750	ASP Hosting - WebEOC Enterprise (Up to 750 Users) 10/1/2025 - 9/30/2026	$29,062.21	1.00	$29,062.21
103-H-MAP-1	ASP Hosting - WebEOC Maps Add-On 10/1/2025 - 9/30/2026	$4,878.13	1.00	$4,878.13
			Year 1 Total:	$79,667.91

Year 2

ITEM NUMBER	DESCRIPTION	SALES PRICE	QTY	TOTAL PRICE
102-T-ENT-NNF	Term - WebEOC Enterprise New without Fusion (5 Admin, 10 Sub-Admin, 750 Users) Maintenance 10/1/2026 - 9/30/2027	$32,725.58	1.00	$32,725.58
102-T-UB-ADMIN	Term - WebEOC User Bundle (10 Sub-Admin) Maintenance 10/1/2026 - 9/30/2027	$890.41	8.00	$7,123.30
102-T-AGIS-1	Term - ArcGIS Extension Maintenance 10/1/2026 - 9/30/2027	$2,289.63	1.00	$2,289.63
102-P-MAP-1	Perpetual - Maps Add-On Maintenance 10/1/2026 - 9/30/2027	$4,960.87	1.00	$4,960.87
103-H-ENT-750	ASP Hosting - WebEOC Enterprise (Up to 750 Users) 10/1/2026 - 9/30/2027	$29,934.08	1.00	$29,934.08
103-H-MAP-1	ASP Hosting - WebEOC Maps Add-On 10/1/2026 - 9/30/2027	$5,024.48	1.00	$5,024.48
			Year 2 Total:	$82,057.94

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Year 3

ITEM NUMBER	DESCRIPTION	SALES PRICE	QTY	TOTAL PRICE
102-T-ENT-NNF	Term - WebEOC Enterprise New without Fusion (5 Admin, 10 Sub-Admin, 750 Users) Maintenance 10/1/2027 - 9/30/2028	$33,707.35	1.00	$33,707.35
102-T-UB-ADMIN	Term - WebEOC User Bundle (10 Sub-Admin) Maintenance 10/1/2027 - 9/30/2028	$917.13	8.00	$7,337.00
102-T-AGIS-1	Term - ArcGIS Extension Maintenance 10/1/2027 - 9/30/2028	$2,358.32	1.00	$2,358.32
102-P-MAP-1	Perpetual - Maps Add-On Maintenance 10/1/2027 - 9/30/2028	$5,109.70	1.00	$5,109.70
103-H-ENT-750	ASP Hosting - WebEOC Enterprise (Up to 750 Users) 10/1/2027 - 9/30/2028	$30,832.10	1.00	$30,832.10
103-H-MAP-1	ASP Hosting - WebEOC Maps Add-On 10/1/2027 - 9/30/2028	$5,175.21	1.00	$5,175.21
			Year 3 Total:	$84,519.68

Contract Total *plus applicable taxes	USD 246,245.53

Additional Disclaimer

Work cannot be started and dates for services cannot be secured until the applicable initial payment or purchase order has been received. Pricing contained herein is based on configuration outlined above. Some items may not be sold separately. Pricing is valid until the expiration date set forth above.

If the "Bill To" entity above is tax-exempt, such entity shall be responsible for providing all necessary documentation to show such tax-exempt status.

Estimated amounts for Pre-Paid Travel Expenses are for informational purposes only; all Travel Expenses incurred by Juvare or its affiliate shall be invoiced to and paid by Client.

When you send in a Purchase Order (PO) for the items above,
THE PURCHASE ORDER MUST INCLUDE THE QUOTE NUMBER & QUOTE DATE TO BE ACCEPTED.

We look forward to working with you and your staff!

JUVARE

September 18, 2023

<u>**Via Email**</u>
6800 Burleson Rd, Bldg 310, Suite 165
Austin, TX 78744
Attn: Martin Ritchey

RE: **Response to Sole Source Inquiry; WebEOC® Software Suite –** Capital Area Council of Governments, TX

Dear Mr. Ritchey:

ESi Acquisition, Inc., a Juvare Company ("ESi"), is the sole developer and licensor of the ESi WebEOC® branded Software. Since its initial development and release in 1999, ESi has maintained control over the source code, the trademark and all other proprietary rights embodied in the ESi WebEOC Software and its companion products.

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Sole source acquisition of the ESi WebEOC Software products and services may be justified under Subpart 6.3 of the Federal Acquisition Regulations ("FAR"). In the case of software products and software maintenance, the FAR allow sole source acquisition of unique items which are available from one or a limited number of sources or for proprietary items where only limited data rights are provided under license. The ESi WebEOC Software meets these requirements. State and local government organizations are encouraged to ask their procurement officer if local laws include similar sole source provisions, or if the federal justifications may be used to support sole source procurement.

On behalf of ESi, we look forward to the opportunity to work with you. If you have any questions, or require additional information, please do not hesitate to contact me at the phone number listed below.

Sincerely,
ESi Acquisition, Inc., a Juvare company

Rajib Roy
President and CEO

1.   *License Agreement.*

This is a license agreement and not an agreement for sale. This License Agreement effective this ____ day of March 2016, is made by and between ESi Acquisition, Inc. ("ESi"), a Delaware Corporation with its principal place of business at 823 Broad Street, Augusta, GA 30901 and Capital Area Council of Governments (CAPCOG) (TX) ("Licensee"), organized under the laws of Texas with principal business location at 6800 Burleson Road, Building 310, Suite 165, Austin, TX 78744 . This License Agreement ("Agreement") gives Licensee certain limited rights to use the proprietary ESi Software, Software Updates, and Documentation including any updates thereto.

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(b)   "Affiliate" means a corporation or limited liability corporation in which (i) ESi owns a majority interest and/or has substantial control over assets, operations and management, or (ii) which owns or has substantial control over the assets, operations and management of ESi, or (iii) is under common control with ESi.

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(k)   "Surge Capacity Plan" means an optional emergency response program which permits Licensee to increase the number of Users to support response to or recovery from an incident declared a disaster by a state or federal government agency.

(l)   "Term" means the period of years for which Licensee has elected to license the Software.

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(a)   Licensee may install and use one (1) Instance of the Software on one (1) Machine. As used herein, Machine means a single laptop, personal computer or web server, or a combined web and database server or multiple load-balanced web servers, configured to point to a single database and database server that is used operationally or "in production" ("Instance").

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License also may install the Software to support "non-production" software development cycle activities as set forth in Exhibit A to this Agreement
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(b)   The Software is licensed on a named and active user baser. Each User shall have a unique user account. User accounts shall not be shared. Licensee may provide access to the number of Administrators and Users set forth in Exhibit A to this Agreement. User counts are based on the average number of unique log-ins each month. ESi shall have the right to conduct regular audits of Licensee compliance with the number of Users permitted under this Agreement. Licensee agrees to provide ESi with the information required to complete such audits. Such audits shall be conducted at ESi expense, except that Licensee shall be responsible for reimbursing ESi for all reasonable audit expenses if Licensee shall be found in violation of the User limits set forth in this Agreement. Licensee shall be in violation of User limits if the average number of Users during any month covered by the audit is greater than the number of Users permitted in Schedule A and such increase in Licensee is not supported by a Surge Capacity Plan.

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Users may not be granted access to any Administration Tools, except that Administrators may grant designated Users rights to create or edit incidents and to add or edit maps in MapTac™.

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(d) Licensee may provide its consultant(s) or independent contractor(s) with access to the Software and Documentation, provided that such consultants or independent contractors are using the Software and Documentation exclusively for the benefit of the Licensee. Licensee shall be responsible for compliance by its consultants and independent contractors with the terms and conditions of this Agreement.

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(g) Permitted uses of WebEOC Fusion vary from the terms set forth in Sections 5(a) through 5(f). Licensee may install and place in production one (1) copy of WebEOC Fusion on one (1) Source and one (1) Target server. Licensee may make one (1) copy of the Software for back-up or archival purposes, or Licensee may install a second copy of the WebEOC Fusion software on a second machine as long as only one (1) copy of the WebEOC Fusion software is in use at any one time. There is no limit to the number of licensed instances of WebEOC® (or number of WebEOC licensees) which may be connected by a single instance of WebEOC Fusion, provided that (i) only the Licensee of the WebEOC Fusion software has administrative privileges and administrative access to the WebEOC Fusion software and (ii) Licensee has paid to ESi all applicable connection fees.

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(a) License fees are due and payable according to the payment schedule set forth in Exhibit C. Additional license fees are required should Licensee elect to: (a) use the Software on more than one (1) Licensed Machine; (b) increase the number of named users who may access the Software; (c) increase the number of non-production instances of the Software; (d) license additional Software; (e) upon renewal; or (f) as otherwise required by this Agreement. Such license fees shall be determined by the price list in effect at the time of the transaction and are due and payable prior to installation of the Software or added capacity.

(b) At least sixty (60) days prior to the expiration of this Agreement, ESi shall notify Licensee of the current fees for Software, software maintenance and technical support, and hosting services and invoice Licensee for an additional term of one (1) year at the stated price.   Licensee shall pay to ESi the invoiced amount on or before the anniversary date of this Agreement.

(c) ESi reserves the right to charge interest equal to one and one-half percent (1.5%) on all amounts past due with interest accruing as of the day after the due date, or the maximum rate allowable by law, whichever is less. Licensee shall reimburse ESi for all costs and expenses incurred by ESi in any actions taken to collect any past due amounts including, without limitation, attorney's fees.

(d) ESi reserves the right to suspend Licensee access to Software and services if Licensee fails to pay all fees owed and due in a timely manner.

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13. *Software Maintenance and Technical Support; Module Care Plans; Hosting Services*

(a)   Licensee shall receive software maintenance, technical support and hosting services set forth in Exhibit B from ESi or its authorized agent during the Term, provided that Licensee is not in violation of this Agreement.

(b)   All Software Updates received by Licensee shall be subject to the terms of this Agreement.

14. *Limited Warranty and Disclaimers.*

(a) ESi warrants that the Software, except Modules, will perform in accordance with the accompanying Documentation for a period of one (1) year from the first day of the month following installation, if ESi or its authorized agent, associate or contractor performs the Software installation, or on the first day of the month after the Software is shipped, if ESi or its authorized agent, associate or contractor ships the

Software to the Licensee. ESi warrants that the Module will perform in accordance with the accompanying Documentation for a period of ninety (90) days from the first day of the month following installation, if ESi or its authorized agent, associate or contractor performs the Software installation, or on the first day of the month after the Software is shipped, if ESi or its authorized agent, associate or contractor ships the Software to the Licensee.

(b) If programming errors or defects do occur during this period and ESi is promptly notified in writing of the nature of the error, ESi will correct the error without charge.

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16. *License Term and Termination.*

(a) The initial term of this Agreement shall be the Term set forth in Exhibit A and its effective date shall be the date set forth in the first paragraph of this Agreement. This Agreement shall automatically renew for successive one (1) year terms unless terminated in writing by either party.

(b) Termination for Cause. Either party may terminate this Agreement, upon thirty (30) days written notice to the other, if a party materially violates any provision of this Agreement and fails to remedy such violation within thirty (30) days after written notice thereof. Failure to pay the fees outlined in this Agreement in a timely manner shall be deemed a material breach. Licensee acknowledges and agrees that ESi may seek equitable relief at any time to remedy a violation or threatened violation of the restrictions set forth herein regarding the use and protection of the Software and Documentation.

(c) Termination for Convenience. After expiration of the initial Term, either party may terminate this agreement without cause upon sixty (60) days written notice.

(d) Upon termination, Licensee shall immediately destroy the original and all copies of the Software and Documentation, or return them to ESi. If Licensee elects to destroy the Software and Documentation, Licensee shall provide a certificate of destruction to ESi within five (5) business days of the termination date.

(e) If Licensee receives Hosting Services from ESi, the following termination provisions also apply upon termination of this Agreement for any reason:

Licensee access to Software and Hosting Services shall be suspended;

Licensee shall immediately surrender to ESi any Internet protocol numbers, addresses or ESi-owned domain names assigned to Licensee in connection with the Hosting Services delivered hereunder;

ESi shall copy Licensee data to a portable storage medium and ship to Licensee via courier or other traceable delivery service within ten (10) days of termination date unless other arrangements are requested by Customer within five (5) days of the termination date;

Any and all Licensee data shall be overwritten, erased, encrypted or otherwise rendered unrecognizable upon confirmation from Licensee that Licensee data has been received in machine-readable format; and

Any Licensee requesting restoration of Hosting Services post-termination shall pay a $2,400 reinstatement fee and all applicable fees for requested services including data restoration, and shall be liable to pay any outstanding, undisputed amounts due ESi prior to such restoration of services.

In the event of early termination of the Agreement, Licensee may request a rebate for services purchased and not performed. The unit of measure for calculating any rebate shall be weeks and shall be calculating using the following formula: (contract price/52 weeks) x number of weeks of service Customer would have received if the Agreement had been fully performed. In the event that ESi terminates the agreement for cause, ESi shall retain the balance as liquidated damages.

17. *Infringement of Patent and Other Proprietary Rights.*

(a) ESi represents to Licensee that it has no knowledge of any existing or potential claims that the Software or Documentation violates or infringes upon any patent, copyright, trade secret or other proprietary right of a third party.

(b) ESi shall indemnify, defend and hold harmless Licensee from and against all claims, damages, losses, liabilities and expenses, including reasonable attorneys' fees, arising out of any claim by a third party asserting that the Software, Documentation, services or any use thereof, infringes such third party's patent, copyright, trademark, trade secret, confidentiality or other right, provided that Licensee notifies ESi in writing within a reasonable time after Licensee first receives written notice of the claim and gives ESi reasonable assistance, at ESi's cost, in the defense or settlement of the claim. If any such infringement, claim or action is brought or threatened, ESi will, at its sole option and expense: (a) procure for Licensee the right to continue using the Software; or (b) modify or amend the Software, provided that such modified Software will have substantially the same or comparable capabilities, or replace the Software with other software having substantially the same or comparable capabilities; or (c) if neither of the foregoing is commercially practicable, terminate this Agreement and repay Licensee a portion, if any, of any license fees for the Software, on a pro rata basis. If terminated, the parties will be released from any further obligation under this Agreement, except for obligations that survive termination.

18. *No Disabling Codes, Timers, Counters, or Other Limitations*.

Except for technology controls designed to monitor or enforce the terms of this Agreement, the Software shall not include or contain any disabling code, timer, clock, counter or other limiting design or routine which causes the Software to be erased, inoperable or otherwise incapable of being used in the full manner for which it was designed and licensed pursuant to this Agreement.

19. *General Conditions*.

(a) Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Texas (United States of America) regardless of application of choice of law rules or principles. This Agreement expressly excludes the United Nations Convention on Contracts for the International Sale of Goods. Unless otherwise elected by ESi at its option and in writing for a particular instance, the sole jurisdiction and venue for actions related to the subject matter hereof shall be the state or United States District Court having within its jurisdiction the location of the Capital Area Council of Governments' principal place of business in Austin, Texas. Both parties consent to the jurisdiction of such courts and agree that process may be served in any manner allowed by the laws of the State of Texas or of the United States. If Licensee acquires this License in a country other than the United States or its territories, local law may apply. The original language of this Agreement is English. In case of any discrepancies or conflicts between the English text version of this Agreement and any translation, the English version shall prevail.

(b) Entire Agreement. This Agreement sets forth the entire understanding and agreement between Licensee and ESi and may be amended only in a writing signed by both parties. This Agreement supersedes any and all other Software license agreements, including without limitation, any License previously granted for any prior version of the Software. In the event of any inconsistency between the terms and conditions of this Agreement and the terms and conditions of the Documentation or other licenses delivered with the Software, the terms and conditions of this Agreement shall govern and control. NO VENDOR, DISTRIBUTOR, DEALER, RETAILER, SALES PERSON, OR OTHER PERSON IS AUTHORIZED TO MODIFY THIS AGREEMENT OR TO MAKE ANY WARRANTY, REPRESENTATION OR PROMISE WHICH IS DIFFERENT THAN, OR IN ADDITION TO, THE TERMS OF THIS AGREEMENT.

(c) Waiver. No waiver of any right under this Agreement shall be effective unless in a writing, signed by a duly authorized representative of ESi. No waiver of any past or present right arising from any breach or failure to perform shall be deemed to be a waiver of any future right arising under this Agreement.

(d) Severability. If any provision of this Agreement is held by a court of competent jurisdiction to be void or unenforceable for any reason, that provision shall be reformed to the extent necessary to make the language enforceable. All other provisions of this Agreement shall remain in full force and effect.

Export Controls.

(a) Licensee acknowledges that the Software and Documentation are subject to United States export laws. Licensee shall not, nor shall Licensee authorize or permit its directors, employees, consultants, independent contractors or other persons, to export, re-export, disclose or otherwise provide the Software and/or Documentation to any country unless an appropriate license, exemption or authorization has been obtained from the U.S. Government.

(b) Licensee expressly agrees that Licensee shall not export, re-export, barter, or otherwise provide or disclose the Software and Documentation, in whole or in part, to: (a) any country covered by any United States trade embargo; (b) any person listed on the United States Department of Treasury's list of Specially Designated Nationals; (3) any person or entity listed on the United States Department of Commerce Denied Persons List; (4) any person or entity listed on the United States Department of Commerce Unverified or Entity Lists; (5) any person or entity listed on the United States Department of State Debarred List; or (6) any person or entity where such export, re-export, barter, disclosure or provision violates United State export control law or regulation. Licensee represents and warrants that neither it nor its directors, employees, consultants, nor any other persons or entities who may gain access to the Software and Documentation through the Licensee, are persons or entities subject to such U.S. export controls.

(c) Licensee agrees to defend, indemnify, and hold harmless ESi from and against any claim, loss, liability, damage or expense, including fines or legal fees incurred by ESi with respect to any of Licensee's export or re-export activities contrary to the foregoing instructions

21. *U.S. Government Rights.*

(a) If Licensee is an agency, department, or other entity of the United States Government ("Government"), or funded by the United States Government, Licensee's use, duplication, reproduction, release, modification, disclosure or transfer of the Software, Documentation, technical specifications, or any related materials of any kind, including technical data, is restricted in accordance with Federal Acquisition Regulation ("FAR") 12.212 for civilian agencies, Defense Federal Acquisition Regulation Supplement ("DFARS") 227.7202 for military agencies and the equivalent regulations for the Department of Energy. The use of the Software and Documentation is further restricted in accordance with the terms of this Agreement, or any modification thereto.
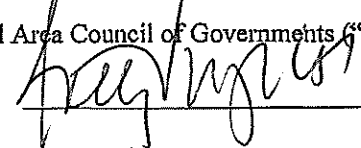
(b) The Software and Documentation are commercial computer software and commercial computer software documentation. Licensee shall ensure that each copy used or possessed by or for the Government is labeled with the following: "Manufacturer is ESi Acquisition, Inc., 823 Broad Street, Augusta, GA 30901. ALL RIGHTS RESERVED. PROPRIETARY PRODUCTS." For the purpose of any federal, state or local law, Licensee agrees that the Software and Documentation are trade secrets and proprietary commercial products of ESi and/or its third party licensors and are not subject to disclosure.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate originals by their duly authorized representatives as of the day and year set forth above.

ESi Acquisition, Inc. ("ESi")

By: _____

Name: Michael Wallace

Title: CFO, EVP

Date: March 25, 2016

Capital Area Council of Governments ("Licensee")

By: _____

Name: Betty Voights

Title: Executive Director

Date: 4-1-16

1   *Term*

The initial Term of this Agreement is perpetual.

2.   *Licensed Software*

Licensee has licensed the following Software:

Number of Licensed Machines	Software
1	WebEOC® Professional
	WebEOC® Mapper Professional

Licensee also may install the Software to support "non-production" software development cycle activities:

Number of Licensed Machines	Purpose
1	Development/testing of Software Updates prior to placing in production (internal use only)
	Training (internal use only)
	Disaster Recovery

3.   *Authorized Number of Users*

Licensee may provide access to the following number of Administrators and Users:

Administrators	unlimited
Users	unlimited
Sub-Organization Limited Administrators (Enterprise Only)	

ADDENDUM
WebEOC End User License Agreement

This Addendum, effective this _____ day of March 2016, is made by and between ESi Acquisition, Inc., (hereinafter referred to as "ESi"), a Delaware corporation, having its principal place of business at 823 Broad Street, Augusta, Georgia, 30901 and **Capital Area Council of Governments (CAPCOG), TX,** (hereinafter referred to as "Licensee") which has its principal place of business at 6800 Burleson Rd Bldg. 310 Suite 165 Austin, TX 78744.

1.   *Purpose*

This Addendum addresses the upgrade of the WebEOC Professional Software to the WebEOC Enterprise Software. This Addendum shall supplement or amend, where indicated, the terms of the End User License Agreement ("EULA") entered into by and between Licensor and Licensee, or otherwise accepted by Licensee.

2.   *Definitions.*

The following definitions shall supplement the definitions set forth in Section 2 of the EULA.

"Enterprise" means an optional bundle of product features which includes Sub-Organization, Sub-Organization Limited Administrator, and selected add-on capabilities.

"Sub-Organization" means a collection of users connected through shared supervisors, mission, task or organizational affiliation whose user accounts, roles and permissions are managed by the same Sub-Organization Limited Administrator.

"Sub-Organization Limited Administrator" or "Limited Administrator" means a user who has been granted limited software administration rights by an Administrator.

3.   *Permitted Uses.*

Section 5(c) shall be deleted in its entirety and replaced with the following text:

(c)   Administrators and Users shall have different rights to access the Software:
    (i)   Administrators may access all features of the Software. Certain features of the Software may only be accessed by named users who are granted status as an Administrator ("Administration Tools"). Administration Tools include, but are not limited to: creation and administration of user accounts; creation and subsequent editing of incidents; software configuration; use of the WebEOC® BoardBuilder tool; installation and administration of board sets, plug-ins, modules, interfaces and Software Updates; and access to the Software's Application Programming Interface.
    (ii)   Users may not be granted access to any Administration Tools, except that Administrators may grant designated Users rights to create or edit incidents and to add or edit maps in MapTac™.
    (iii)   If your licensed Software includes Enterprise, Limited Administrator rights also shall be available solely to support management of Sub-Organizations. Limited Administrators may access the following Administration Tools: creation of user accounts; management of user accounts including definition of roles and permissions; and creation and subsequent editing of incidents. Maintenance of Sub-Organizations and Limited

Administrator rights requires purchase of an annual Enterprise Support Plan. If a Licensee elects to discontinue support at this level, access to Sub-Organization and Limited Administrator features and any other benefits of Enterprise which ESi may elect to make available from time to time shall be discontinued.

4. *Maintenance and Support*

Section 13(d) shall be added to Section 13:

(d)   Access to Sub-Organizations and Sub-Organization Limited Administrator functionality requires purchase of an annual Enterprise-level Software Support Plan.

5. *Exhibit A*

A new exhibit, to be labeled Exhibit A, shall be appended to the EULA to document the software capabilities delivered as part of the WebEOC Enterprise Software configuration.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate originals by their duly authorized representatives as of the day and year set forth above.

ESi Acquisition, Inc. ("ESi")   Capital Area   Council of Governments
                                                  ("Licensee")

By: _____   By: _____

Name: Ken Cooke   Name: Betty Voights

Title: COO   Title: Executive Director

Date: March 11, 2016   Date: 4-1-16

EXHIBIT A

1   *Term*

The initial Term of this Agreement is perpetual.

2.   *Licensed Software*

Licensee has licensed the following Software:

Number of Licensed Machines	Software
1	WebEOC® Professional
	WebEOC® Mapper Professional

Licensee also may install the Software to support "non-production" software development cycle activities:

Number of Licensed Machines	Purpose
1	Development/testing of Software Updates prior to placing in production (internal use only)
	Training (internal use only)
	Disaster Recovery

3.   *Authorized Number of Users*

Licensee may provide access to the following number of Administrators and Users:

Administrators	unlimited
Users	unlimited
Sub-Organization Limited Administrators (Enterprise Only)	

EXHIBIT B
Software Maintenance and Technical Support; Hosting Services

1.   Definitions

For the purposes of this Exhibit, the following words have the meaning set forth below:

(a)   "Application Service Provider" means an entity that maintains a shared hardware environment for the purpose of hosting and maintaining software and data on behalf of customers.

(b)   "Availability" means Software site availability, or the capability for the customer's website to access and deliver ".html" formatted pages successfully to any permitted end user through an internet connection exclusive of processes, hardware and software beyond the control of ESi.

(c)   "Hosted System" means the combination of hardware, software and networking components used by the Application Service Provider to deliver the Hosting Services.

(d)   "Hosting Services" means the installation and management of specified software applications by an Application Service Provider in a shared environment on behalf of a customer and exclusively for the benefit of permitted users of the Software.

(e)   All other defined terms in this Exhibit B shall have the same meaning set forth in Section 2 of the Agreement, except where otherwise stated in this Exhibit.

2.   Scope of Services

ESi shall provide the following services to address Licensee's software maintenance, technical support and Software hosting needs:

(a)   ESi, acting as an Application Service Provider, shall provide Hosting Services to Licensee according to the provisions set forth in the Agreement. ESi shall notify Licensee promptly upon creation of Hosting Services account and provide Licensee with all information required to access such account. ESi, at its sole discretion, may provide and maintain such Hosted System and/or deliver such Hosted Services internally or through a qualified subcontractor.

(b)   ESi shall provide and maintain the facilities, hardware, and networking components necessary to operate a high-availability, shared ASP Environment for the benefit of Licensee.

(c)   ESi shall perform, at its convenience and after notice to Licensee, scheduled updates of Software as new releases become available.   Such updates shall be scheduled to enable the simultaneous update of Software licensed to Licensee and all other ESi-hosted customers. Scheduled updates to Software, except for Modules, shall include correction releases (i.e. patches provided to correct software anomalies), point releases (i.e. modifications to current generation of software including enhancement and improvements), and level releases (i.e. new releases or new generation of software). ESi also shall install updates and security patches for other software, including operating system software, installed on hardware used to deliver Hosting Services. For Modules, ESi shall provide Licensee any updates released by ESi to correct errors affecting the operation of the Module, whether such error is caused by the Module itself or by an error in the WebEOC software, and any updates required to maintain compatibility with the WebEOC software. ESi shall not provide for any enhancements to the Module.

(d)   ESi shall perform, as needed, emergency security updates to the Hosted System and Software to protect the ASP Environment from newly identified and widespread threats to the internet or internet-based services posed by worms, viruses and Trojans, or to address other vulnerabilities, with little or no notice to Licensee. Such updates shall be treated as scheduled outages and the outage period shall not be considered as service downtime in any performance assessment that may be conducted.

(e)   ESi shall provide and maintain a redundant ASP Environment at a location that is geographically separated from primary ASP Environment to ensure continuity of Software access and operation in the event of any unforeseen outage, disaster or other event that may interrupt service at the primary location. Failover to the redundant ASP Environment is a manual process and service will be activated by ESi immediately upon notification of malfunction, unavailability or failure of primary ASP Environment.

(f)   ESi shall notify Licensee in writing, via electronic mail or facsimile, of any planned service outages, i.e. for the purpose of performing Software updates or testing, or other inability to perform the services outlined in this Agreement.

(g)   ESi shall schedule, perform and maintain a duplicate ("backup") record of Licensee's data. ESi shall perform hourly SQL transaction log backup to disk, daily full backup to tape, and weekly full backup of data to a central data library. Data backups are limited to SQL database server files (i.e. those files having a .mdf or .ldf file extension). Data backups shall be retained on-site for one week and off-site for three additional weeks.

(h)   ESi shall provide Licensee with technical environmental support services. Such support services shall be available 24 hours per day, 7 days per week. Technical support services shall include assistance with problems related to ASP Environment, operating system and related software licensed by ESi on behalf of Licensee, data access, Hosted System access or similar problems. Technical support may be accessed by Licensee by calling the Technical Support Help Desk at (877) 771-0911 or paging the on-call technician at (888) 243-7204. International customers access Customer Support by calling (706) 823-0911 or paging the on-call technician at (803) 240-0016.

(i)   ESi shall make routine software support available to Licensee by telephone, electronic mail and, when required, remote session support, Monday through Friday, during the regular business hours of 0830 to 1700 Eastern Standard Time (excluding holidays). Routine software support includes assistance with the use and configuration of the software; assistance with identification and resolution of errors or defects assistance with application and use of new releases; general support for Board Builder and boards built by client, ESi or an ESi-certified technician; and access to WebEOC best practices, community-use status boards, "help" resources and other content made available through www.webeoc.com, a "customer only" web forum. Software support may be accessed by Customer by calling the Technical Support Help Desk at (877) 771-0911 or by electronic mail at support@esi911.com. International customers access Customer Support by calling (706) 823-0911.

(j)   ESi shall use its best efforts to correct any and all verified, reproducible errors that materially affect the operation and performance of the Software. Licensee shall notify ESi of such errors in writing, via post, facsimile or electronic mail, and such written notice shall include a description of each claimed error and a statement of the conditions under which the claimed error occurred. ESi shall use the information provided by Licensee to verify the claimed error and once such error is verified, ESi shall work to correct the error or, if ESi determines that such error cannot be corrected within the current release version of the Software, to develop a "work around" for that error. In the event that an error is resolved through implementation of a "work around," ESi will use best efforts to correct or eliminate the error in the next release of the Software.

(k)   Services to be provided by ESi under this Agreement do not include assistance with third party products; training; installation of plug-ins, boards or modules; API support; or board building; or maintenance, repair or correction of errors, defects or other operational or performance defects caused by Software configuration, modification, enhancement or programming provided by any party other than ESi or an ESi-certified technician. Any professional services described in this Section 2(k), or services required to repair or correct the errors and defects described in this Section 2(k), shall be provided on a fee-for-services basis at rates consistent with the ESi published price list in effect at the time services are rendered.

(l)   Licensee may request performance of additional services by ESi. Such services shall be invoiced separately by ESi at the current published rate for labor and actual costs for materials and travel, if applicable.

3.   Licensee Obligations

(a)   The Licensee shall maintain, at Licensee's expense, a secure high speed internet connection through which to access its hosted Software.

(b)   The Licensee shall appoint a designated point of contact and two alternate points of contact for its interactions with ESi. Licensee shall provide ESi with the name, job title, physical address, telephone number, facsimile number and electronic mail address for each of the contact persons. Licensee shall keep such contact information up-to-date and promptly notify ESi, in writing via electronic mail, of any changes.

(c)   The Licensee shall use reasonable security precautions in connection with the use of services provided under this Agreement.

(d)   The Licensee is responsible for any and all use and access to the Hosted System and Hosting Services by its employees, agents, contractors and permitted users of the Software and Hosting Services.

(e)   The Licensee shall make best efforts to notify ESi in writing, via electronic mail or facsimile, of any planned non-emergency use of its Software, such as the occurrence of training sessions, drills and exercises, to aid ESi with the planning of any scheduled outages.

(f)   The Licensee shall promptly notify ESi Customer Support of any identified Hosting Services outage that impairs Customer access to its Software so that ESi may manually activate the redundant ASP Environment and immediately commence work to restore service to the primary ASP Environment.

4.   Service Level Assurances; Service Warranty

(a)   All support calls received from Licensee shall be logged and tracked in the ESi customer support system as a "Customer Support Ticket." Each Customer Support Ticket shall include an initial assessment of the Severity Level of the request for support:

Severity Level	Definition
ASP 1	Hosting Services are not accessible to Licensee via a public internet connection.
ASP 2	Hosting Services are accessible, but performance is reduced or impaired.

Software, Severity 1	Any and all errors which, individually or collectively with other errors, prevent Licensee or permitted users of Licensee from performing useful work or are deemed by Licensee or any of its permitted users to be fatal to the operation of the Software.
Software, Severity 2	Any and all errors which, individually or collectively with other errors, disable major functions of the Software from being performed and are deemed by Licensee or any of its permitted users to have a severe impact on the operation of the Software.
Software, Severity 3	Any and all errors which, individually or collectively with other errors, disable only certain non-essential functions of the Software and are deemed by Licensee or any of its users to have degraded operation of the Software.
Software, Severity 4	All other errors not appropriately classified as Severity 1, Severity 2 or Severity 3 and are deemed by Licensee or its permitted user as having a limited impact on the operation of the Software.

(b)   ESi shall make all commercially reasonable efforts to resolve Customer Support Tickets in accordance with the following schedule:

	Acknowledgement of Customer Support Ticket	Resolution
ASP1	Within 30 minutes	Failover to redundant ASP environment and/or correction of error as soon as possible.
ASP2	Within 2 hours	Failover to redundant ASP environment and/or correction of error as soon possible.
Software, Severity 1	Within 1 hour	Delivery by ESi of a patch, workaround or temporary fix and revised documentation to Licensee within 1 business day;and Delivery by ESi of the object code fix or other permanent fix and revised documentation to Licensee within 10 business days.
Software, Severity 2	Within 4 hours	Delivery by ESi of a patch, workaround or temporary fix and

		revised documentation to Licensee within 3 business days; and Delivery by ESi of the object code fix or other permanent fix and revised documentation to Licensee within 20 business days.
Software, Severity 3	Within 1 business day	Delivery by ESi of a patch, workaround or temporary fix and revised documentation to Licensee within 10 business days; and Delivery by ESi of the object code fix or other permanent fix and revised documentation to Licensee within 45 business days.
Software, Severity 4	Within 5 business days	Delivery by ESi of a patch, workaround or temporary fix and revised documentation to Licensee within 30 business days; and Delivery by ESi of the object code fix or other permanent fix and revised documentation to Licensee as appropriate.

(c)   ESi represents and warrants that service availability of the ASP Environment will meet a "high availability" measure of 99.9 % system "up time," excluding scheduled outages. If ESi fails to meet this availability criteria within any month, upon Licensee request, ESi shall extend the term of this Agreement for one day for each day, or portion thereof, the ASP Environment is verified by Licensee and ESi to be unavailable in that month, up to a maximum of 30 days at no additional charge.

(d)   ESi shall only be responsible for performance of components of the Hosted System and Services under its control. ESi shall not be responsible for performance deficiencies caused by processes, hardware and software beyond its control including, but not limited to, information transmission delays due to excessive internet traffic, internet outages, or failure of Licensee to perform its obligations under this Agreement.

(e)   The warranties set forth in this Section shall be void if any breach of this warranty or failure of the hosting environment or Software is caused by unauthorized use, improper use or modification to Software made by Licensee or its authorized users.

5.   Limitations on Use of Services

(a)   Access to the Hosted System may not be rented, leased, sold, sub-leased, assigned or otherwise transferred for value by Licensee to any third party.

(b)   Hosted System and Hosting Services are provided to support the Software which is an information management tool. Hosting Services are not guaranteed to be fault-tolerant or to provide fail-

safe performance. Hosting Services are not appropriate for use in ultra-hazardous environments where failure of the Hosted System or ASP Environment may lead to bodily injury, death or destruction of property.

(c)   Installation of software applications in ASP Environment is limited to software licensed to Licensee by ESi and software supplied by ESi either as a component of the Hosted System or to support delivery of Hosting Services.

(d)   The Licensee shall not conduct any load testing, performance testing or any other test of the Hosted System which may degrade performance or limit or adversely impact availability of the ASP Environment for other customers.

6.   Information Security and Business Continuity

(a)   ESi shall perform all services hereunder consistent with its ASP Information Security Program ("Security Program"). Such Security Program shall set forth, at a minimum, ESi policies and procedures with respect to data classification and management, data and system back-ups, account and password management, physical security and access, network configuration and access, change management, media management and destruction, security training and awareness, and continuity of ASP Environment operations.

(b)   Any sub-contractors used to deliver, or support delivery of the Hosting Services shall maintain an information security and business continuity program which is supportive of the Security Program.

(c)   A copy of the Security Program is available, upon request and after execution of the ESi Non-Disclosure Agreement.

(d)   Hosting Services are provided in a shared environment. Customization of information security, data management and/or business continuity practices to meet Licensee-specific needs is not supported.

EXHIBIT C
Payment Schedule

See attached Quote on following page.

intermedix

ESi Acquisition, Inc. | an Intermedix Company

Intermedix Contact:
Kent Cawley
Phone: 512-639-2832
Email: kent.cawley@intermedix.com

Quote Number: 00003441	Quote Date: 8/05/2015
5 Year Contract Term	Quote Expires: 3/31/2016
Quote for Enterprise Upgrade and Hosting (No Fusion)	

Quote To	Capital Area Emergency Communications District 6800 Burleson Rd Bldg 310 Suite 165 Austin, TX 78744	Ship To	Capital Area Council of Governments (CAPCOG), TX 6800 Burleson Rd Bldg 310 Suite 165 Austin, TX 78744
Contact	Gregg Obuch Director of Emergency Communications (512) 916-6044 gobuch@capcog.org		

Thank you for your support of Intermedix products and services. If you are ready to proceed with a purchase order, please send to your Intermedix contact listed above. We look forward to working with you and your staff!

Quotes issued in US Dollars. Items not manufactured by Intermedix are subject to change. Substitutes will be provided for customer consideration and approval.

PROPOSAL

Software

Product Code	Item Description	Qty	Unit Price	Ext. Price Year 1	Ext. Price Year 2	Ext. Price Year 3	Ext. Price Year 4	Ext. Price Year 5
SW-WebEOC-ENTUPALT	WebEOC® Enterprise Upgrade - ALT	1	$79,200.00	$79,200.00				
SW-WebEOC-SUB	Sub-account bundle (10 sub-admin)	2	$3,500.00	$7,000.00				

Quote # 00003441 for Capital Area Planning Council of Governments (CAPCOG), TX

p. 1 of 4

intermedix

ESi Acquisition, Inc. | an Intermedix Company

Intermedix Contact:
Kent Cawley
Phone: 512-639-2832
Email: kent.cawley@intermedix.com

Software

Product Code	Item Description	Qty	Unit Price	Ext. Price Year 1	Ext. Price Year 2	Ext. Price Year 3	Ext. Price Year 4	Ext. Price Year 5
	Sub-Totals			$86,200.00				

Services

Product Code	Item Description	Qty	Unit Price	Ext. Price Year 1	Ext. Price Year 2	Ext. Price Year 3	Ext. Price Year 4	Ext. Price Year 5
TS-SOL-PRJC	Solutions Services Project	1	$22,920.00	$22,920.00				
TS-WebEOC-SCP25	Service Credits Plan - 25 Hours	1	$6,250.00	$6,250.00				
TE-TVLEX-ES	Travel and Per Diem	1	$2,328.00	$2,328.00				
	Sub-Totals			$31,498.00				

Software and ASP Support

intermedix

ESi Acquisition, Inc. | an Intermedix Company

Intermedix Contact:
Kent Cawley
Phone: 512-639-2832
Email: kent.cawley@intermedix.com

Product Code	Item Description	Qty	Unit Price	Ext. Price Year 1	Ext. Price Year 2	Ext. Price Year 3	Ext. Price Year 4	Ext. Price Year 5
ASP-MPR-TXI	ASP Hosting - WebEOC® Mapper Professional - Annual	1	$4,345.00	$4,345.00	$4,475.35	$4,609.61	$4,747.90	$4,401.31
ASP-WebEOC-ENT	ASP Hosting - WebEOC® Enterprise - Annual (up to 750 users) One time discount applied.	1	$6,886.00	$6,886.00	$25,886.00	$26,662.70	$27,462.60	$25,457.85
SS-WebEOC-ENTALT	WebEOC® Enterprise Software Support-ALT	1	$28,314.00	$28,314.00	$29,163.42	$30,038.32	$30,939.47	$28,680.89
SS-WebEOC-SUB	Sub-account bundle (10 sub-admin)	2	$770.00	$1,540.00	$1,586.20	$1,633.79	$1,682.80	$1,559.95
Sub-Totals				**$41,085.00**	**$61,110.97**	**$62,944.42**	**$64,832.77**	**$60,100.00**

TOTALS	
Total, Year 1	**$158,783.00**
Total, Year 2	**$61,110.97**
Total, Year 3	**$62,944.42**
Total, Year 4	**$64,832.77**
Total, Year 5	**$60,100.00**

Quote # 00003441 for Capital Area Planning Council of Governments (CAPCOG), TX

Intermedix Contact:
Kent Cawley
Phone: 512-639-2832
Email: kent.cawley@intermedix.com

TOTALS	
CONTRACT GRAND TOTAL	**$407,771.16**
Optional Items	

February 2, 2016

Statement of Work

WebEOC® Crisis Information Management Software for Capital Area Council of Governments (CAPCOG), TX

Table of Contents

Intermedix | 6451 N. Federal Highway Suite 1000, Fort Lauderdale, FL 33308 | Phone: 954.308.8700 | Fax: 954.308.8725
ESI Acquisition, Inc. | 823 Broad Street, Augusta, GA 30901 | Phone: 706.823.0911 | Fax: 706.826.9911

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All work delivered to Customer is subject to the terms and conditions set forth in the WebEOC® End User License Agreement (EULA) accepted by Customer upon installation of the WebEOC software. Notwithstanding participation by members of the Customer's user community in requirements development, payment or other project activities, Customer rights and obligations under the EULA may not be transferred or assigned.

1.0 Services Overview

Intermedix will provide Capital Area Council of Governments (CAPCOG), TX (hereinafter referred to as "Customer") with a WebEOC Enterprise Upgrade and ASP Hosting Services.

2.0 Pricing and Schedule

The total pricing for the Services is $22,920.00. The price includes implementation services for WebEOC Enterprise Upgrade and ASP Hosting migration. The project will be invoiced as outlined in the milestone table in section 10.0. This SOW is good for 90 days from the last dated revision.

3.0 WebEOC® Enterprise Upgrade

Implementation Services for the project will be conducted on and offsite. The WebEOC Enterprise Training will be conducted onsite.

3.1 Enterprise Upgrade Training

WebEOC Enterprise Sub Administrator training is provided to WebEOC "Administrators". The maximum number of students for a training class would be 20-1 student to instructor ratio. Training is administrative in nature and will not be covering End User material. Training covers setting up initial sub admins. Customer needs to have planned out what users will be responsible for what positions/users.

3.1.1 The training will also include the Enterprise Modules Board Data Manager and WebEOC Dashboard.

3.1.2 All on-site WebEOC courses require a classroom with a computer for each student, access to the internet, and a data projector and screen for the instructor.

4.0 WebEOC® ASP Data Migration

4.1 Local to hosted transition WebEOC

The migration will begin with a brief kick-off meeting with the Customer. This meeting is intended to review the requirements with key stakeholders prior to moving the data. The following will need to be provided:

4.1.1 Establish the Customer Technical point of contact (POC)

4.1.2 Set the WebEOC URL

Intermedix | 6451 N. Federal Highway Suite 1000, Fort Lauderdale, FL 33308 | Phone: 954.308.8700 | Fax: 954.308.8725
ESI Acquisition, Inc. | 823 Broad Street, Augusta, GA 30901 | Phone: 706.823.0911 | Fax: 706.826.9911

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       4.1.2.1   URL *Note the bolded text is an example and is the only portion that can be customized https://**customerurl**.webeocasp.com

    4.1.3   POC Name *Someone that is going to be fairly familiar with WebEOC – can be functional or technical.

    4.1.4   Customer to provide POC Email address

    4.1.5   POC Phone

    4.1.6   Intermedix will setup a fully hosted environment for the Customer.

    4.1.7   The data on Customer's current WebEOC production instance will be transferred to the hosted environment.

5.0   Assumptions

- Customer will setup the Enterprise License Key to activate new features prior to the onsite training.
- Customer needs to have planned out what users will be responsible for what positions/users.
- Key, Customer personnel will be available for the onsite training.
- Customer will provide a copy of their current WebEOC production database
- Customer will supply a classroom with a computer for each student, access to the internet, and a data projector and screen for the instructor for training.
- Customer will provide designated, Intermedix personnel with WebEOC logins for the duration of the implementation.
- Customer will sign a Customer Deliverable Acceptance Form that details the completed deliverables.
- If additional Intermedix assistance is necessary outside of the agreed, purchase order, a Change Request will be required to create a new Purchase Order for services.

6.0   Services Engagement

The following process will be used for Customer to engage an Intermedix resource:

6.1   Upon receipt of the Purchase Order, the Intermedix Project Manager will notify the Intermedix designated Customer point of contact (POC) to schedule a project kick-off call.

6.2   Any project related calls will be scheduled through the Intermedix Project Manager with the Customer POC.

6.3   The Intermedix Project Manager will provide the Customer POC with the overall project timeline and provide email status updates.

6.4   Once the implementation is complete the Intermedix Project Manager will coordinate a closeout call with the Customer POC to finalize acceptance.

7.0   Delivery and Acceptance

Work will be deemed received by the Customer 24 hours after delivery and does not include weekends or major holidays. The Customer will have 14 calendar days from receipt to review

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and identify defects. If no feedback has been provided within 14 days of delivery, the solution will be deemed accepted.

8.0 Warranty

This solution is delivered with a thirty (30) day warranty against defects. During this warranty period, Intermedix will correct any bugs or deficiencies which impair or prevent solution from performing according to specifications. If applicable, any Customer changes made to the solution(s) during the thirty (30) day period will void the warranty.

9.0 Invoicing

Customer will be invoiced for service upon acceptance of the milestones listed in section 10.0. All invoices are payable NET30.

10.0 Project Billing Milestones

The Project will be billed according to the fixed price milestones listed below:

Milestone	Description	Fee
1.	Delivery – WebEOC Enterprise upgrade services and ASP Hosting migration	$22,920.00

11.0 Contacts
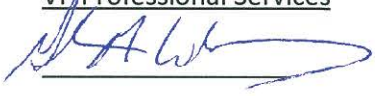
Sales	Project Manager	Business Solutions
Erin Jacobs	Tiffany Leiden	Kent Cawley
Inside Sales Specialist	Project Manager	Sr. Client Services Manager
(706) 823-0911	(706) 262-2129	(512) 334-6670
Erin.Jacobs@intermedix.com	Tiffany.Leiden@intermedix.com	Kent.Cawley@intermedix.com

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12.0   Agreement of Parties

This SOW and any Change Requests set forth the entire agreement of Customer and Intermedix with respect to the service and deliverables to be provided. Nothing contained herein obligates either party to enter into engagements beyond that stated herein.

IN WITNESS WHEREOF, the parties have caused this SOW to be executed by their duly authorized representatives. All terms and conditions of the EULA, unless specifically amended herein, shall remain in full force and effect.

Name   Betty Voights   Name   Glenn Wilensky

Title   Executive Director   Title   VP Professional Services

Signature   Signature

Date   Date   04/01/2016

                Customer   Intermedix

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APPENDIX A – Change Request

CUSTOMER/COMPANY	
DOCUMENT AUTHOR	
DATE OF REQUEST	
PROJECT	
PURCHASE ORDER#	
PROJECT MANAGER	
CLIENT SERVICES MANAGER	
PROJECT STAKEHOLDERS	
DESCRIPTION OF REQUESTED CHANGE	
DESCRIPTION OF PROCESS CHANGE OR BUSINESS IMPROVEMENT	

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Change Orders

Change Number	Change Type	Description of Change	Requestor	Date Submitted	Date Approved	Status

Special Notes or Comments	

Intermedix Approvals

	Name	Signature	Date	Approved (Yes/No)
Intermedix Project Manager				
Intermedix Client Services Manager				
Intermedix EMSystems				

Customer Approvals

	Name	Signature	Date	Approved (Yes/No)
Position				
Position				

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CAPITAL AREA EMERGENCY COMMUNICATIONS DISTRICT
BOARD OF MANAGERS MEETING

MEETING DATE: <u>October 11, 2023</u>

AGENDA ITEM: <u>#6 Consider Approving Purchase of Aerial Imagery</u>

GENERAL DESCRIPTION OF ITEM:

Aerial imagery is purchased annually to support and update mapping applications which ensure accurate dispatch of first responders by the public safety answering points (PSAPs) and is funded in the CAECD budget; this item is already budgeted for in the FY'24 budget. The Regional Planning and Services Division manages all GIS mapping for the agency and oversees this contract as well as the procurement of imagery. Since 2017 three procurements have been conducted as cooperative purchases through the Texas Natural Resource Information Service (TNRIS) StratMap program. The program allows agencies to select pre-screened vendors that have already entered into contracts with TNRIS which enables a streamlined procurement process and discounts for participants.

Surdex has been the vendor since 2020 and is being recommended again based on past performance. Their 2024 proposal is being offered at the same rates as CAPCOG paid in each of the past four years. The total cost of this contract includes $185,640 for the acquisition and $5,800 to host the data for up to 1 year after delivery. The amount budgeted for this item for FY 2024 is $215,000.

THIS ITEM REPRESENTS A:
- ☐ New issue, project, or purchase
- ☒ Routine, regularly scheduled item
- ☐ Follow-up to a previously discussed item
- ☐ Special item requested by board member
- ☐ Other

PRIMARY CONTACT/STAFF MEMBER: **Rob Buckhouse, GIS Program Manager**
                                     Charles Simon, Director of Regional Planning & Services

BUDGETARY IMPACT:
Total estimated cost: <u>$191,440</u>
Source of Funds: <u>CAECD revenue</u>
Is item already included in fiscal year budget?   ☒ Yes   ☐ No
Does item represent a new expenditure?   ☐ Yes   ☒ No
Does item represent a pass-through purchase? ☐ Yes   ☒ No
If so, for what city/county/etc.? n/a

PROCUREMENT: Cooperative Purchase

ACTION REQUESTED:
Approve Issuance of Purchase Order to Surdex Corporation for 2024 Aerial Imagery

BACK-UP DOCUMENTS ATTACHED:
1. Procurement Memo
2. Surdex Technical Proposal

BASTROP   BLANCO   BURNET   CALDWELL   FAYETTE   HAYS   LEE   LLANO   TRAVIS   WILLIAMSON

MEMORANDUM
October 11, 2023

TO: **CAPCOG Executive Committee**

FROM: **Charles Simon, Director of Regional Planning and Services**

RE: **2024 Aerial Imagery Procurement**

Staff seeks approval to issue a purchase order (PO) to Surdex Corporation to acquire 12-inch resolution aerial imagery for the entire extent of the CAPCOG region in May and June 2024 to support 9-1-1 mapping applications. GIS program staff procured this service through Section 3-207 of CAPCOG's procurement policy, which authorizes cooperative purchases, and the Texas Natural Resource Information Service's (TNRIS's) "StratMap" program (https://tnris.org/stratmap/).

GIS staff selected Surdex as the vendor based on past performance for 2020, 2021, 2022, and 2023 imagery and comparable pricing and services offered for 2024 imagery acquisition. CAPCOG staff have had good experiences working with Surdex staff over the past four years and have been happy with the results.

Surdex's base price of $21.00 per "tile" for 12-inch orthoimagery for 2024 is identical to the price per tile CAPCOG paid in 2020, 2021, 2022, and 2023. The total budgeted for this item was $215,000.

The price offered by Surdex includes a 27% discount for organizations acquiring the imagery through the StratMap program – it would otherwise cost $28.76 per tile, for a total cost of $254,238.

In addition to acquisition costs, staff are also seeking approval for $5,800.00 to pay Surdex for hosting the data remotely for up to 12 months after final delivery (i.e., from Summer 2024 – Summer 2025). While CAPCOG usually hosts imagery data in-house, it has been decided that hosting it remotely will be more cost-effective and contracted services have been determined to better meet CAPCOG's needs.

TECHNICAL PROPOSAL

Capital Area Council of Governments

Orthoimagery in the Capital Area (10 Counties)

SUBMITTED TO

Rob Buckhouse
GIS Program Manager
Capital Area Council of Governments

SUBMITTED BY

Cornell Rowan, CP
Project Manager
Office: (636) 368-4460
Mobile: (912) 222-4075
Email: cornellr@surdex.com

TABLE OF CONTENTS

SURDEX
CORPORATION

COVER LETTER

September 20, 2023

Rob Buckhouse
GIS Program Manager
Capital Area Council of Governments

REGARDING: 2024 Orthoimagery

Dear Capital Area Council of Governments,

Surdex is pleased to submit our proposal to the Capital Area Council of Governments for the acquisition and production of 2024 orthoimagery in the Texas capital area. We have completed numerous successful projects in Texas over the past decade. Surdex's ability to deliver orthoimagery requiring minimal client review has been acknowledged as providing a significant internal cost and time savings by the Houston-Galveston Area Council, Smith County Texas GIS Consortium, Texas Natural Resources Information System and Capital Area Council of Governments. Surdex will provide the same level of quality product for this project.

Surdex has successfully completed the 2020, 2021, 2022 and 2023 orthoimagery projects for the Capital Area Council of Governments. These successful projects demonstrate Surdex's thorough understanding of the unique land cover and airspace issues in the region. Surdex Senior Project Manager and Certified Photogrammetrist Cornell Rowan will be assigned to the 2024 project, backed up by Surdex's Director of Project Management Wade Williams, CP. Cornell and Wade have a combined 50+ years of project management experience and have managed over 747,000 square miles of orthoimagery projects in the State of Texas since 2010.

Surdex was awarded its second Texas DIR contract in August 2021, allowing government entities within Texas to acquire geospatial products through a network of pre-approved contractors. This proposal contains a description of the base standard specifications for orthoimagery acquisition/production and accuracy within the State of Texas and a discount schedule consistent with Surdex's Texas contract - DIR-CPO-4496.

Our acquisition resources—ten aircraft and five ADS100 image sensors—are critical to successful project execution, and they are supported by proven project manager communications and timely delivery of quality data by Surdex's production staff. Additionally, our project manager and production staff understand the attention required to satisfy the unique requirements of the Capital Area Council of Governments up to and including delivery of ancillary products.

If you have any questions or if we may assist you in any way, please do not hesitate to contact us.

Sincerely,

Cornell Rowan, CP
Project Manager
Direct: (636) 368-4460
Mobile: (912) 222-4075

Ronald C. Hoffmann
President, Authorized Agent
Office: (636) 368-4400

cornellr@surdex.com

PROJECT PLAN

A. PROJECT PLAN AND EXECUTION

SCOPE OF WORK	
CLIENT	
CAPITAL AREA COUNCIL OF GOVERNMENTS	
GROUND SAMPLE DISTANCE (GSD)	**APPROXIMATE AOI**
12" BASE PROJECT	8,840 DO4Qs

1) PROJECT DESIGN

The project design is based on the deliverable tile layout and a buffer around the exterior boundary. It includes a flight design and a control survey design. Flight planning is the responsibility of Surdex's flight acquisition manager, and each flight plan is reviewed and approved by the project manager. The Triangulation and Survey staff design the ground control network under the direct supervision of a Certified Photogrammetrist and a Registered Land Surveyor.

Imagery Flight Design

The flight design is based on the following parameters:

FLIGHT DESIGN PARAMETERS		
PARAMETER	**SETTING(S)**	**COMMENTS**
FLYING HEIGHT (AGL)	12" GSD: 12,300' AGL	Based on sensor-specific parameters (height: GSD ratio is focal length divided by CCD pixel size). Planning software will ensure the target GSD is not exceeded (numerically larger) in rugged areas by using an elevation model.
COVERAGE	Stereoscopic	Extends to the buffered tile layout to ensure stereo coverage and to provide alternative orthoimagery during mosaicking.
MINIMUM SUN ANGLE	30°	
SIDELAP	Minimum 30%	For urban areas, sidelap is increased to reduce building lean in "urban canyons" and flight lines are oriented to capture small areas as close to the center of the strip as possible to maximize the nadir view.
FLIGHT LINE ORIENTATION	Optimized to the area of interest	Design may include diagonal flight lines for either acquisition efficiency or to align with major streets/avenues in built-up areas.

Ground Survey Design

After the flight design is complete, Surdex will determine the number and placement of control points that will be required to ensure product accuracy and independent check points required for validation of the deliverables.

Ground control points are surveyed to provide a connection between the ground coordinate system and the imagery coordinate system. All imagery will be acquired with a geodetic grade GNSS receiver on the aircraft to reduce the number of ground control points needed. For this project, Surdex will select photo-identifiable point locations and (if needed) target ground control points in an evenly distributed pattern throughout the project area.

As a quality check process, Surdex will also photo-identify, target and survey QC check points. These points, independent of the control points, are to be used exclusively in the quality check process to evaluate the accuracy of the final digital orthoimagery. This QC process will ensure that the digital orthophotography meets ASPRS accuracy standards as outlined in the specifications.

Our design approach includes:

- Re-use of control and QC points from the 2023 project where possible
- Individual control/check points will be either paneled or photo-identifiable
- Overall uniform dispersion of control over the entire project
- Focus on placing control at junctions of strips, maximizing the number of observations of control points during triangulation to strengthen the solution

Preliminary Flight and Control Diagram

The following page contains a preliminary flight and control diagram for 12" GSD imagery for the 10-county area of interest, 8,840 DO4Qs. The final flight plan and control layout will be selected based on the finalized 12" AOI and condition of prior project survey points.

FLIGHT AND CONTROL DIAGRAM
12" GSD CAPITAL AREA COUNCIL OF GOVERNMENTS
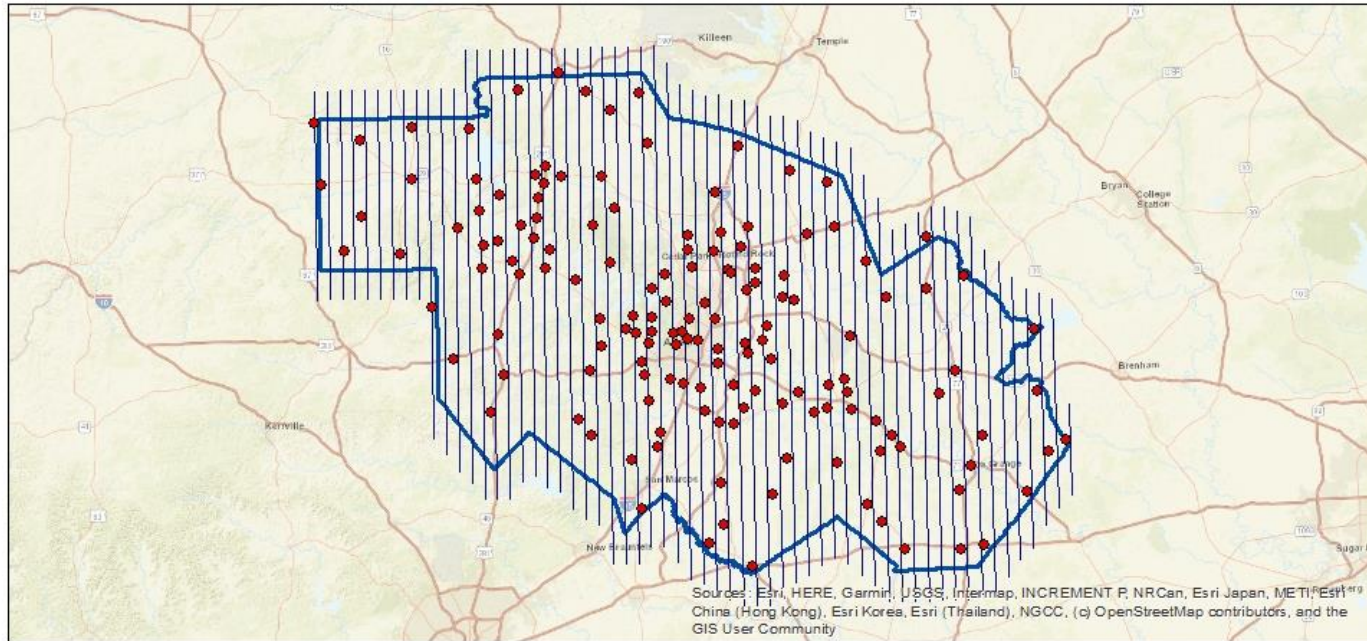
Legend
- Ground control/QC points
- Flight lines
- Project area of interest
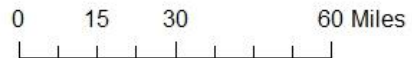
2) ACQUISITION EQUIPMENT

Aircraft

Surdex's Cessna 441 (Conquest) will be used on this project to host the ADS100 sensor. The Conquest aircraft are the highest performing and most versatile aircraft in our fleet for imagery acquisition and can be ferried to the project area from our headquarters within two hours, ensuring maximum use of available clear weather. The RVSM equipment and advanced radar allow us to ferry safely at night. Our Cessna 414A is also suitable for this project and will be the back-up aircraft if needed. Aircraft assigned to the project will be based at airports within the project area to take advantage good weather and maximize on-line time during required sun angle periods.

SURDEX'S ACQUISITION AIRCRAFT FOR SOW #580-21-SOW-0001

MAKE AND MODEL OF AIRCRAFT

CESSNA 441 CONQUEST II-10 (WITH RVSM*)	**Number of Aircraft:** 4 **Engine:** Twin-turbine pressurized **Flight Range:** 2,193 nm **Operating Ceiling:** 35,000' **Cruise Speed:** ~310 knots	
CESSNA 414 CHANCELLOR III	**Number of Aircraft:** 1 **Engine:** Twin-piston pressurized **Flight Range:** 900 nm **Operating Ceiling:** 30,200' **Cruise Speed:** ~235 knots	

* RVSM: Reduced Vertical Separation Module. This FAA-certified equipment allows operation above 28,000' (MSL).

Sensors

Surdex owns five Leica ADS100 Airborne Digital Sensors, making our installation the largest in the United States and one of the largest in the world.

Leica ADS100 installation in a Cessna 441 (Conquest)

The pushbroom imaging geometry of the ADS100 includes sets of arrays in the forward, nadir (down), and back configurations, collecting imagery simultaneously to produce a "pixel carpet" of the ground. The off-nadir arrays provide alternative views for ortho and stereoscopic coverage. Each set of arrays acquires at full resolution in red, green, blue, and near infrared.

LEICA ADS100 IMAGING OPERATIONS ARRAYS (COURTESY OF LEICA GEOSYSTEMS)
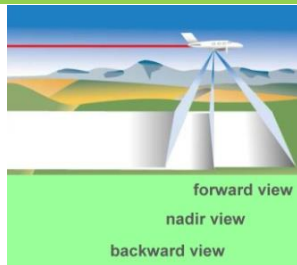
ARRAY	BANDS	FROM NADIR	FOV	PIXELS
Forward	RGBN	25.6°	65.2°	16,000
Nadir	RGGBN	0°	77.3°	20,000
Backward	RGBN	19.4°	71.4°	18,000

Pushbroom systems present optimal imaging geometry for digital orthoimagery and support highly efficient production:

- **Minimized building lean, forward or back**: With the image displacement only varying across the format—and not radial from the center as with frame-format cameras—the amount of elevated feature lean in the final product is dramatically reduced.

- **Significantly fewer seamlines than frame cameras**: The pixel carpet acquired by the ADS100 substantially reduces the number of seamlines required to mosaic the orthoimages, reducing the production effort and minimizing the possibility of seamline artifacts. Correspondingly, the orthoimagery inspection effort is reduced.

- **The strongest stereo viewing available**: The ADS100 stereoscopic geometry yields the highest attainable horizontal and vertical accuracies and can meet the most stringent ASPRS standards. The ADS100 stereoscopic geometry is superior to the 9"x9" film cameras relied upon for decades.

- **Uniform color edge to edge**: With the telecentric lens design of the ADS100, all light rays strike the focal plane perpendicular to the arrays, resulting in a uniform response to color. ADS100 images generate a product with high quality color.

- **No pan-sharpening**: With each band (R, G, B, NIR) in each array collecting at full resolution, features imaged by the ADS100 do not exhibit the blooming and smearing attributed to the pan-sharpening approach taken by virtually every large-format digital frame camera on the market today. This enhances interpretation and results in an aesthetically pleasing rendition of color.

- **Better color for classification**: The spectral responses of the bands do not overlap, making the ADS100 ideal for automated image classification.

LEICA ADS100 SPECIFICATIONS

PARAMETER	VALUE		PARAMETER	VALUE	
SENSOR TYPE	Pushbroom		**VIEW ANGLES**	Forward:	25.6°
PAN-SHARPENING	None			Back:	19.4°
				Stereo:	45°
CROSS-TRACK PIXELS	Forward:	16,000	**B/H RATIO**	0.80	
	Nadir:	20,000		(Traditional film cameras: 0.6)	
	Backward:	18,000	**RADIOMETRIC RESOLUTION**	14 bits/pixel	
FOCAL LENGTH	62.7 mm		**IMAGING ARRAYS**	3 Arrays:	
F-NUMBER	f4		**R = red**	Forward:	RGBN
PIXEL SIZE	5.0 um		**G = green**	Nadir:	RGGBN
PIXEL REGISTRATION ACCURACY	1 um		**B = blue**	Back:	RGBN
			N = near infrared		
INTEGRATION TIME	≥ 0.5 ms		**RADIOMETRIC RESPONSE (NM):**		
HEIGHT: GSD RATIO	12,500:1				
CROSS-TRACK FIELD OF VIEW (FOV)	77.3°		**Red**	619-651	
			Green	525-585	
			Blue	435-495	
			Near Infrared (NIR)	808-882	

3)   ACQUISITION PLAN WITH ASSUMPTIONS FOR WEATHER

Movement of aircraft to and from project areas is done by Surdex's chief pilot in coordination with the project manager. This is a complex process aided by the vast experience in acquisition Surdex has gained in over a half-century of aerial data capture. It involves tracking short- and long-term weather patterns and the progress of each project. Weather data for each project area is automatically loaded into our central database for consultation and historical study. The Surdex project manager will keep the Capital Area Council of Governments apprised of aircraft movements into and out of the project areas.

Surdex's acquisition experience within the State of Texas in recent years will be invaluable to ensure successful capture. Our general assumption regarding "sit days" (awaiting weather or clearance to fly airspaces) is that we have approximately 1 sit day per 3 days of acquisition. Imagery will be captured when the sky is free from clouds, cloud shadows, high overcast clouds causing low illumination, haze, fog, smoke and dust. Surdex understands that cloud/cloud shadow cover must be less than 5% per final uncompressed image tile and less than 5% of the entire AOI. Ground features will be free of excessive water due to rain or snow. Light conditions will ensure images are free from smear, blur, excessive glare or noise.

Flight Planning

Flight planning is the responsibility of Surdex's flight acquisition manager, and each flight plan is reviewed and approved by the project manager. Surdex uses the Leica MissionPro flight planning software for acquisition planning with the ADS100. This software utilizes an elevation model to rigorously check for adequate forward overlap and sidelap coverage as well as desired product GSD. Flights are planned against the buffered coverage for the desired seasonal window portion for the project area.

The flight planning software addresses rugged or uneven terrain in two ways:

■ The targeted GSD is treated as a "maximum" value by the software and is never exceeded when compared to the terrain model. This may require "line breaks" to alter the flying height in very rugged terrain.

■ The sidelap setting is treated as a "maximum" value and the spacing between lines is modified to ensure the value is not exceeded.

Imagery acquisition is the most critical project phase. The most important facet of acquisition is the focus on an extremely high degree of communication between Surdex's chief pilot and all aircrews. Flight plans are updated each evening in the central database and re-distributed to aircrews via the internet and/or e-mail. Daily communication and coordination between the chief pilot and aircrews ensure that acquisition is maximized.

Surdex's chief pilot will inform the local Air Traffic Control (ATC) and/or military air traffic control authority in advance of flight operations. This includes providing aircraft tail numbers and flight designs to ensure the local authority is fully informed.

Before each acquisition day several activities are undertaken by the aircrew:

- Aircraft, GNSS, IMU, and camera are all inspected for proper operation.
- Final weather checks are made.
- Up-to-date flight plans are downloaded and reviewed.
- Flight plans are filed with the local airport/FAA.
- If required, base stations are set up.

At the end of each acquisition day:

- Aircraft, GNSS, IMU, and camera are all inspected for proper operation.
- Aircraft mission logs are completed.
- Data drives are shipped overnight to the production center.

To maintain a clear report on the remaining work, we combine the daily progress each plane has made with the results from inspection of acquisition from previous days. This is all done in the database, so an up-to-date view of the data is always available.

Aircrews generate a flight report for each mission that is used by the production center to appraise the results of each day's acquisition. For example, if extreme turbulence or cloud cover is cited by the aircrew for specific areas of the acquisition, prioritized attention is paid to these areas by the inspectors.

It is critical to collect GNSS/IMU data with the highest possible integrity, considering these primary factors:

- Operation of base stations to maintain a reasonable distance to the project area.
- Avoiding IMU drift by limiting the length of lines – generally less than 20 minutes.
- Using CORS (Continuously Operating Reference Stations) and/or local GNSS reference networks to provide multiple observations.

Geometric Processing

Geometric processing is the application of the most recent sensor calibration data to the imagery using the sensor manufacturer's software. This includes provisions for principle point offsets, focal length, lens distortion, and position of the CCD pixels.

Acquisition Inspection

Immediately following acquisition, imagery is inspected to ensure complete coverage of the project area that is free from imperfections before commencing production.

Rapid imagery inspection is critical to the overall success of a project, so all imagery is viewed and graded, and the inspection results are stored in our central database. This approach enables a qualified and timely determination to be made regarding the possible need for re-flights and guarantees proper image quality.

EXAMPLE IMAGERY INSPECTION ITEMS		
ITEMS INSPECTED VISUALLY	**ITEMS INSPECTED ANALYTICALLY**	**ITEMS INSPECTED VISUALLY AND ANALYTICALLY**
• Clouds/cloud shadow	• Verify acquisition parameters are met	• Trajectory processing
• Smoke/haze	• Sun angle	• Pixel/band registration
• Excessive flooding/standing water	• Forward lap	• Camera misfires
• Excessive ice/snow	• Sidelap	• Image artifacts
• Image motion	• Crab	
• Specular reflection	• Tilt	

ADS100 imagery inspection interface
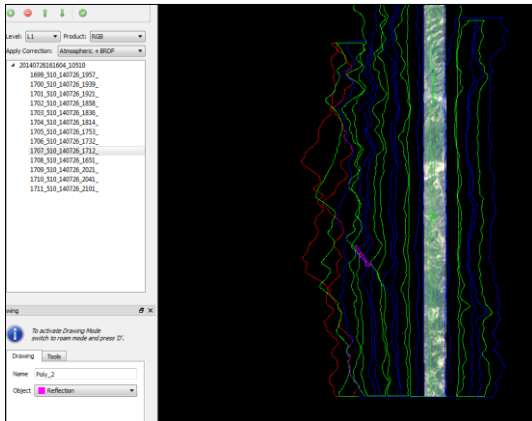
4) ORTHOIMAGERY PRODUCTION

The Surdex orthophoto workflow is best illustrated by the flowchart below followed by more detailed information on process steps.

Surdex's quality control system process overview
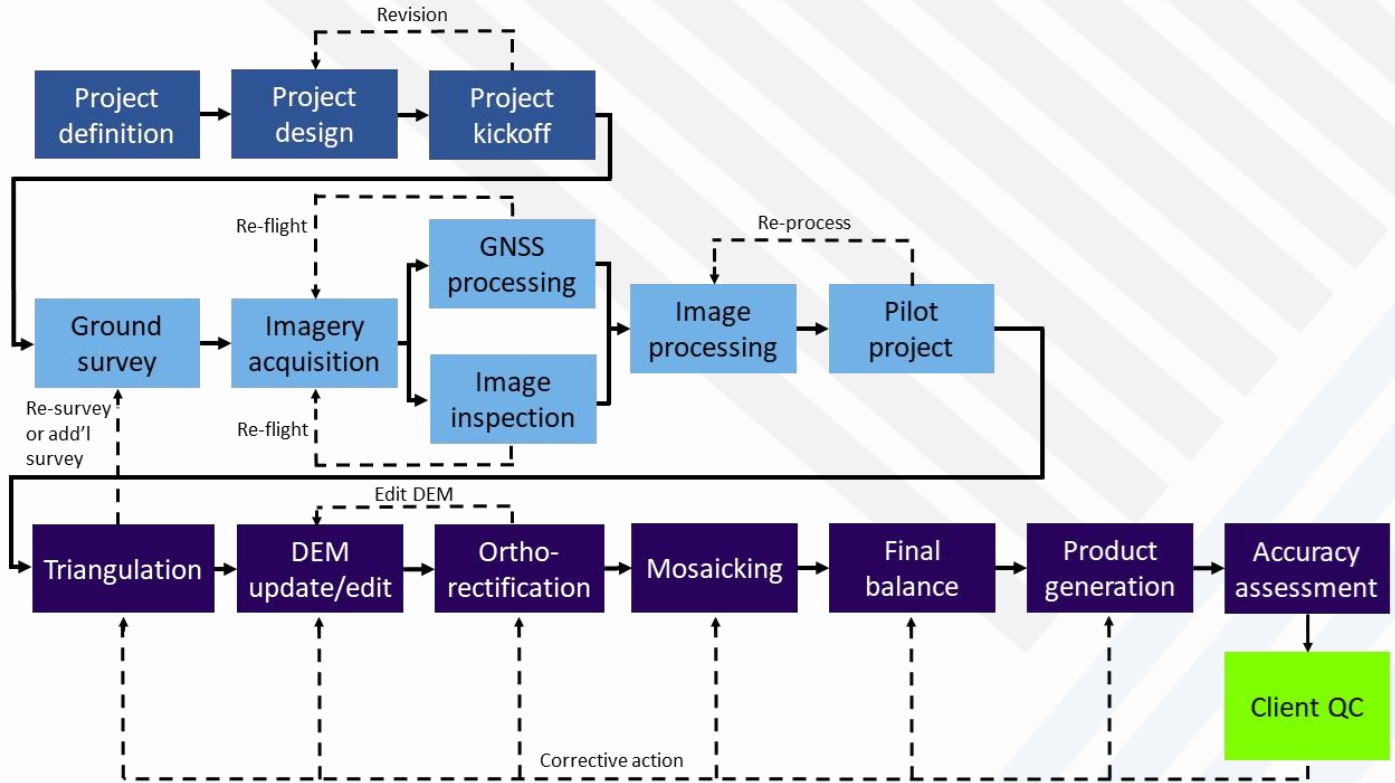
Triangulation

Since triangulation provides the foundation accuracy for the project, it involves checks and balances to ensure accurate results are provided to the production process to avoid costly and time-consuming re-work. The inputs to triangulation include GNSS+INS data, sensor boresight data, sensor calibration data, ground control and check point data, and the imagery itself.

The triangulation process involves the following steps:

■ Automated measurement of pass and tie points appearing in the overlaps of the imagery.

■ Interactive editing of pass and tie points.

■ Measurement of control and check points.

■ Bundle adjustment yielding refined imagery position, attitude and all point positions.

■ If required, re-measurement of points and repetition of the adjustment.

The triangulation solution is based on a sophisticated bundle adjustment employing a mathematical model of the imaging geometry. It relies on the use of far more observations (observed/recorded values such as GNSS+INS, ground control, and image measurements) than are required for a unique solution. Using a least squares optimization approach, the observations are refined for a best fit. Careful inspection is made of the various residuals (differences between observed and adjusted values of parameters) reported by the solution.

Analysis of the quality of the triangulation solution is performed by a Certified Photogrammetrist who is highly skilled and experienced with the process. Upon completion of the triangulation process, the results are stored in the central database and published for use in the following production steps.

Elevation Model Preparation

Surdex will use the most current version of LiDAR available for orthorectification, supplemented with surface data produced off new imagery for creation of the Digital Elevation Model (DEM). If LiDAR is unavailable, after flight/triangulation when dense image matching is created, large elevated features (vegetation, buildings, etc.) are removed using a combination of automated and manual processes, with additional inspection. The master DEM is projected into the native projection and segmented into buffered extents of each accepted line segment for orthorectification in Surdex's distributed processing environment for file size efficiency of processing.

Orthorectification

Orthorectification will be performed using Leica XPro software, which operates in a highly distributed processing environment. All resampling is performed using bi-cubic resampling to ensure pixel location accuracy and to avoid aliasing effects commonly seen with nearest-neighbor or bilinear resampling techniques.

Radiometric Processing

Radiometric processing corrects defective pixels and adjusts the differing sensitivity of the pixels to a uniform result. It includes the application of all radiometric calibration information provided for each camera head from the supplier.

Surdex limits sensor-specific processing to the front end of the production chain, and all imagery is retained in 4-band and 12 bpp (bits/pixel) format until the final tiles are produced. This allows us to make localized adjustments to color, tone, contrast, etc. without compromising the overall quality of the deliverable product.

Using our own interface and database schema, image processing technicians organize large blocks of orthoimagery into groups with common characteristics, which do not necessarily coincide with individual flight missions. The tool can display images in ground space, allowing operators to see the relative image quality between neighboring images and imagery can be viewed in either color or CIR to ensure 4-band continuity. The atmospheric conditions during capture may result in imagery covering regions of differing degradation caused by haze.

Surdex's custom-developed Block and Global Balance software eliminates any residual issues evident after application of Bi-Directional Reflectance Distribution (BRDF) and atmospheric corrections. This is handled by two functions:

- **Block Balance** fits correction models to each strip of images with a single simultaneous bundle adjustment.

- **Global Balance** is then run to correct local differences in illumination between strips, and the results can be previewed in Group Tool without the need to generate intermediate files.

Global Balance uses a "rigid body model" correction calculated for each orthoimage that best forms a normalized block fitting neighboring orthoimages.

Before and after global balancing for RGB and CIR
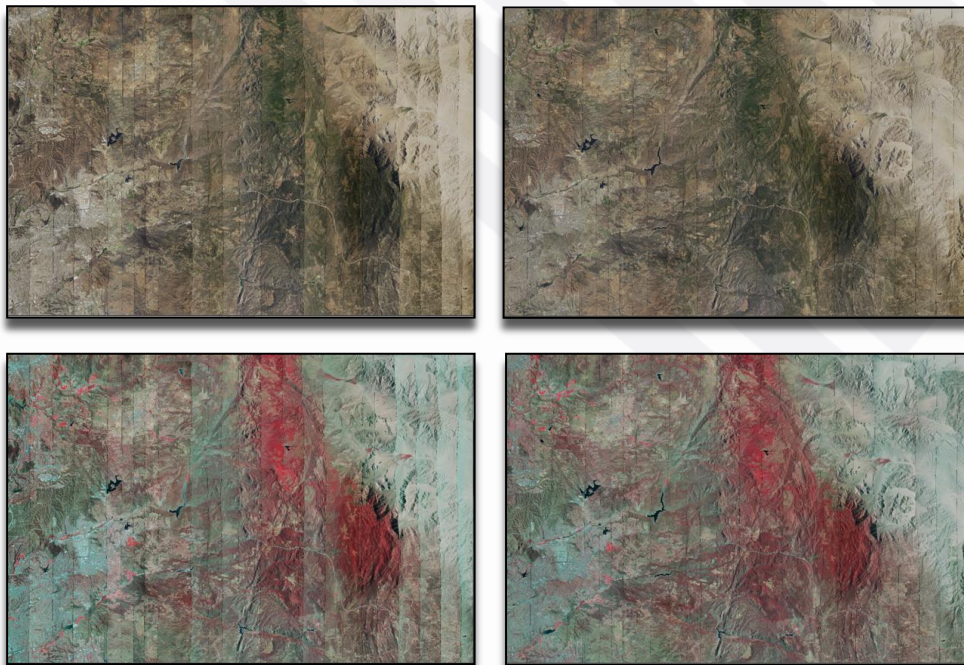
Infrared Processing

Surdex's image processing approach supports 4-band (R-G-B-NIR), color (R-G-B), and color infrared (CIR: NIR-R-G) products by retaining imagery in 4-band x 12 bpp form until generation of the final deliverables. Since the red and green bands are common to the color and CIR renditions within a 4-band file, care must be taken to ensure proper appearance of both. In general, this is accomplished by limiting changes to the NIR band as much as possible. The approach is to first lock down the color rendition (ordered R-G-B or bands 1-2-3) and then process the NIR band to achieve the CIR rendition (ordered NIR-R-G or bands 4-1-2).

Seamline Generation Process to Create Mosaics

There are three steps in the seamline process:

- Automatic generation of seamlines
- Editing of seamlines from within Group Tool
- Application of the seamlines to create the Master Tiles

After all imagery in a completed triangulation block is orthorectified, automatic seams are generated, and then technicians must review the results and correct, if necessary, prior to writing out the Master Tiles. Once an area of seams has been accepted, the user selects tiles to be generated and adds them to a distributed processing queue.

Surdex's custom ray trace module is used to detect potential occlusions and smearing that may occur in rugged terrain. This software creates a graphical overlay that directs technicians to examine pixels that may be incorrect, avoiding the manual task of inspecting imagery for such issues. If an occluded or smeared area is encountered, the corresponding imagery from an overlapping orthoimage is inserted to replace it during the mosaicking process.

Surdex will supply an ESRI shapefile that fully delineates the seamlines used to merge overlapping digital orthoimages during the mosaicking process. Surdex's custom software automatically generates the seamline data during production, made possible by the integration of automatic seamline generation and manual edit into a single application and interface.

After mosaicking, imagery is produced to an internal tile layout that encompasses the project area with adequate buffering. Master Tiles are 8,192 x 8,192 pixels in size, in 4-band x 12bit format, and in the dominant reference frame of the project. Once the Master Tiles are completed, they are used to generate all delivery tile layouts, a process that includes re-projection into final datum and re-mapping to the 8-bit depth for final product.

Bodies of Water in Imagery

Surdex attempts to avoid seamlines crossing water bodies where possible; however, it is possible that passing seamlines through some water bodies cannot be avoided. Tonal variations will be apparent due to several factors, including sun angle changes during acquisition, turbidity changes caused by rainfall and runoff and naturally changing water "color." In extreme cases, Surdex has developed processes to drastically improve the quality of the water and to reduce the severity of the spectral reflectance. Surdex will minimize the reflectance effect by patching in alternate views of the affected area from overlapping adjacent image data (either from within a line or an adjacent line). Should these alternative views not be available or are themselves affected by specular reflection, Surdex has also implemented a function to fill from surrounding areas.

Before (left) and after (right) extensive correction for specular reflection

The ADS100 lends itself to better treatment of objectionable artifacts stemming from effects such as specular reflection, wind chop, and the like involving bodies of water. Since this sensor has continuous acquisition of forward and backward imagery through arrays mounted approximately 25.6° (forward) and 19.4° (backward) relative to the nadir array, it can provide alternative views. Specular reflection and similar problems are caused by the relative angle between viewing and the sun location, and these two additional arrays provide alternatives to the nadir array.

During image inspection, the nadir array is evaluated for specular reflection and each affected image/strip annotated in our central database. This same database also tracks the sun angle and azimuth at the exact time of imaging, enabling the prediction of specular reflection effects. If a nadir image is flagged for specular reflection, the ortho technician is alerted to the situation and will select an alternate view minimizing specular reflection. If a mission is flown into the direction of the sun, as an example, it is logical to assume that the forward and nadir arrays may be adversely affected by resulting specular reflections. However, the backward array is often unaffected because it is looking in the opposite direction, and this imagery can be used to limit/eliminate reflection.

Pilot Project

Shortly after orthoimagery production begins, Surdex will deliver a representative pilot area of >10% of the project area to the Capital Area Council of Governments. The intent of the pilot is to define the desired appearance of the orthoimagery prior to full-up processing and to check form and format of the deliverables. The initial orthoimages will be processed to image metrics defined by the SOW (contrast, clipping, brightness, tone, etc.) and provided to the Capital area Council of Governments for review.

The pilot project will consist of:

- An area greater than 10% of the size of the AOI
- At least four uncompressed orthoimage tiles

Assessment of image quality includes several factors, some of which are objective (i.e.: computed) and some of which are still of a subjective nature. When discussing the image metrics presented in this section, one must keep in mind that they are guidelines and must be applied – or modified – to fit the context of the project. For example, image metrics will provide deceiving results if gathered from an image covering barren ground, water, desert, etc. The key factors in image quality are:

- "Colorimetry" – the balance of colors
- Contrast, tone, balance
- Clipping of dynamic range
- Sharpness
- Noise

Surdex software compiles image metrics on all images processed and retains them in a central database.

Metadata

Surdex is completely familiar with metadata delivery requirements having had this standard delivery for nearly all of our projects, including numerous projects in Texas. Surdex will provide fully compliant FGDC metadata for all data deliveries.

Horizontal Accuracy

As discussed in the project methodology text regarding project design, Surdex will incorporate industry, manufacturer, and empirical experience for acquisition parameters, establish sufficient ground control and take full advantage of available lidar data to meet required accuracies. Surdex understands and will fully comply with the accuracy specifications as detailed in the RFP and shown in the following table.

HORIZONTAL ACCURACY STANDARDS (INCHES)					
ACCURACY CLASS	PIXEL SIZE	RMSE$_{xy}$	RMSE$_r$	ACCURACY$_r$ 95% CONFIDENCE	MOSAIC SEAMLINE MAXIMUM MISMATCH
ASPRS RECOMMENDED USE: "STANDAND MAPPING AND GIS WORK"	12.00	24.00	33.94	58.74	48.00

Preliminary Orthoimagery

With years of web services hosting experience on the USDA National Agriculture Imagery Program (NAIP) and with our web-based inspection tool, Surdex is in the unique position to offer clients a web-based imagery preview service. This service provides a visualization of acquisition progress and allows clients to assess whether ground and atmospheric conditions for acquisition were appropriate. This display of production imagery is superior to textual reports and progress graphics for many users and is accessible on desktop workstations as well as on most smartphones and tablets.

The service can be implemented with username/password authentication to control access, or it can be implemented as an open-access service to the public. If desired, the interim imagery can also be incrementally updated with the final imagery as production progresses, maturing into the final imagery service at the completion of the project.

Preview orthoimagery is automatically processed to default imagery metrics, suitable for assessing ground conditions, cloud/cloud shadow cover, flooding, snow/ice, fog, smoke, etc. If re-flights are conducted, their result will overwrite any previous imagery, resulting in a view of the most current data. Surdex can post preview imagery within two weeks of completion of acquisition.

| INTERIM IMAGERY VERSUS FINAL IMAGERY		
ITEM	INTERIM	FINAL PRODUCT
TRIANGULATION	None performed; based solely on trajectory processing	Triangulation supported by GNSS+INS, ground control
ORTHORECTIFICATION	To either existing (unedited) elevation surface or USGS NED	To final (edited) elevation surface
ACCURACY	Generally, 2-4X less accurate than final product	To product specifications
IMAGE PROCESSING	BRDF and atmospheric corrections applied; default processing to basic metrics/appearance	Additional processing to desired final product appearance
MOSAICKING — SEAMLINES	Automated only	Automated with manual editing to final product specifications
MOSAICKING — BALANCING	Block balance only	Block and global balance to final product specifications

We believe this approach will yield orthoimagery that will allow the Capital Area Councils of Governments to determine whether the imagery was acquired under the correct ground and atmospheric conditions.

Surdex is willing to host this imagery to a web image service for use by the Capital Area Council of Governments. This service is essentially the same approach as the image service underlying our web-based inspection tool, SurCheck, and will persist until all production imagery is finalized. This can be implemented as a username/password solution to control access or implemented as fully open access. Since this is an imagery service, it can be accessed easily as a Java application without a geospatial context, used in any common GIS package, and even accessed by smart phones, tablets, etc.

The interim imagery web service is an OGC-compliant WMS implementation:

NAIP Early Access Image Service on iPhone

- 4-band imagery viewable as natural color or color infrared (CIR).

- A vector overlay portrays the image bounds complete with acquisition time/date, aircraft tail number, camera make/model/serial number, etc.

- It is a REST (REpresentational State Transfer) service that can be viewed by a user in several ways, including but not limited to:

    - As an ArcGIS Java viewer for simple viewing

    - Within ESRI ArcMAP

    - Within ESRI ArcGIS.com

    - Google Earth
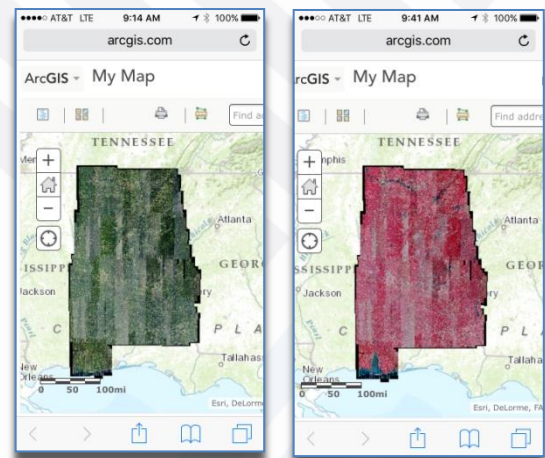
B.   QUALITY CONTROL WORKFLOW

Our redundant quality control processes require inspection at every major production phase, assuring that no work proceeds to the next step until it is validated against project specifications and image quality standards. The result is a 98% first time client acceptance rate.

Surdex has instituted extensive quality assurance (QA) and quality control (QC) procedures, modeled upon ISO processes, to provide premium quality products "first time right, on time."

Our ISO processes continuously optimize quality control and efficiency. Surdex's personnel have extensive experience that supports the quality control system, and our staff includes multiple Registered Land Surveyors (RLS) and several Certified Photogrammetrists.

QUALITY CONTROL SYSTEM FOR ORTHOIMAGERY PRODUCTION	
FEATURE	**BENEFIT**
Use of Certified Photogrammetrists and Registered Land Surveyors at key steps in the process	• Ensures quality and accuracy
100% image inspection – each and every raw image is reviewed, graded, and results retained in a central database	• Ensures acquisition is completed and reviewed in a timely manner • Ensures image quality
Staff mark data as ready for the next step	• Ensures inputs are fully processed for each step
Use of custom-developed software at key steps	• Not reliant upon 3rd party solutions • Quickly develop solutions to address problems that arise
Independent accuracy validation reporting	• Objective results and reporting, can be duplicated by the client
Custom software to generate seamline shapefiles	• Enables clients to inspect the predominant source of residual artifacts
Web-based inspection tool with call-outs and response retained in the central database	• Streamlines inspection, acceptance, and delivery • Complete record of all inspection and remedial actions

QUALITY CONTROL FOR ORTHOIMAGERY PRODUCTION

PHASE	APPROACH
PROJECT DESIGN	• Internal design reviewed by project manager, Certified Photogrammetrist, and Registered Land Surveyor • Reviewed by client
GROUND SURVEY OPERATIONS	• Field survey operations and processing under the supervision and review of a Registered Land Surveyor
IMAGERY ACQUISITION	• Aircraft inspection, maintenance, and repair performed prior to and during project • Sensor calibrations updated as needed • Boresighting of sensors prior to use and/or after installation/re-installation • Reporting of detailed progress by each aircrew at end of acquisition day • Nightly updating of flight plans incorporating acquisition and results of inspection
IMAGERY INSPECTION	• Each image graded and reported in central database, including inspection against the following factors, at a minimum: • Seasonal window(s) and client start/stop work orders • Sun angle and/or timeframe specifications • Project specifications for ground conditions (flooding, smoke, haze, etc.) • GNSS+INS accuracy and quality • Camera misfires • Image motion/smear • Agreement with flight plans • Clouds/cloud shadows • Specular reflection noted for technicians to correct • Automated analysis of smear and/or occlusion in rugged terrain executed for use by technicians
TRIANGULATION	• Trajectory processing reviewed by a Certified Photogrammetrist / Registered Land Surveyor • Tailored triangulation reports for client review • Dependent upon accuracy requirements, graded against: • Ground control, GNSS+INS, and image residuals • Agreement with checkpoints • Distribution and placement of pass/tie points in final solution
ELEVATION MODELING	• Visual review • Comparison of triangulation points to the elevation surface to determine areas of change or problems
ORTHO/MOSAIC	• Ortho technicians inspect one another's work and perform edits • Depending upon resolution of imagery, planimetric data such as roads, bridges, rail lines, buildings, etc. may be used to focus guide seamline review/edit
PRODUCT QC	• Use of Pilot Project(s) with client to assess: • Color, tone, balance specifications/expectations of client • Form/format of deliverables • Metadata compliance • Accuracy analysis performed using Esri ArcGIS and Excel

Project Planning

Project planning involves design of the imagery acquisition and control survey network which ensures accuracy requirements are met and guarantees total product coverage.

Flight plans are generally developed by Surdex's flight acquisition manager and are approved by the project manager, a Certified Photogrammetrist. When the flight plans are approved, the Triangulation and Survey staff design the ground control network against the flight plans. A Certified Photogrammetrist from Triangulation and a Registered Land Surveyor from Survey are responsible for the design. The design is approved by the project manager.

Ground Survey

Ground survey is performed by a Registered Land Surveyor (RLS) or technicians under the direct supervision of an RLS. All calculations are performed by an RLS and reviewed by a Certified Photogrammetrist from the Triangulation staff.

Sensor Calibration

Prior to use on a project, Triangulation personnel review all sensor calibration information to ensure all systems are up-to-date. The following is also prepared for each aircraft/camera combination prior to use in processing:

- GNSS antennas
- Dual-frequency receivers
- Surveys accurately portraying the relationship between the camera lens nodal point and the antennas
- Radiometric and geometric calibration files for each sensor

Image Inspection

Surdex employs 100% inspection, reviewing and grading all imagery and updating the central database with the results. If re-flights are isolated, they are immediately prioritized to the acquisition aircrews. Should any question arise about the quality of the imagery or adherence to project specifications, Surdex's project manager will consult with the client on the proper course of action.

With any type of aerial digital sensor, care must be taken to inspect imagery for possible image blur caused by turbulence. In late 2014, Leica supplied Surdex with a basic software tool that aids in locating areas of potential blur. Surdex built upon this tool with customized software to better integrate it into the imagery inspection task. In addition, Surdex's aircrews were trained on the effects of turbulence and we instituted flight reports that quantify any turbulence, allowing us to focus our imagery inspection to isolate and prioritize potential re-flights.

Leica/Surdex blur tool used during inspection, showing potential blur graph and corresponding image blur
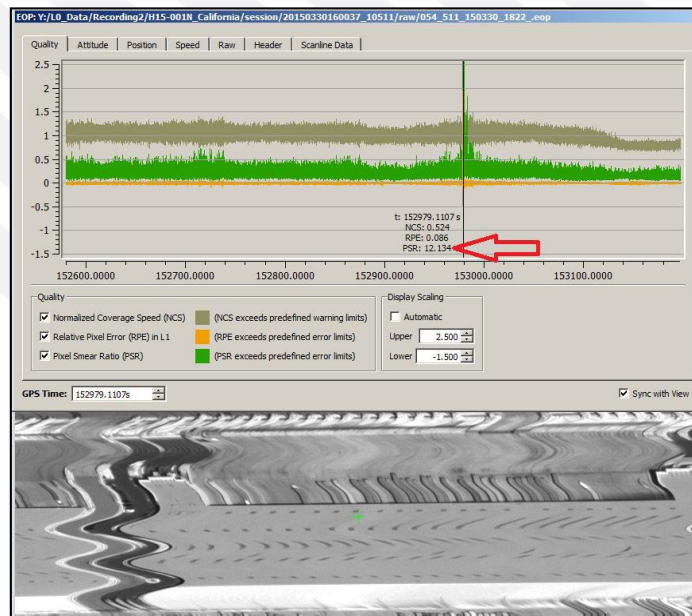
Triangulation

Surdex employs numerous checks throughout the critical triangulation phase. These include, but are not limited to:

- Each triangulation block is independently reviewed by a Certified Photogrammetrist not involved in the specific block under review.

- Surveyed checkpoints are carried through the triangulation process as "floating" points (not constrained to their known positions), and these points are checked against the known (surveyed) positions.

- All residuals (sensor position, ground control points, image points) are inspected to ensure they are within the respective estimated precision of each.

- All triangulation points (pass, tie, control) are checked against the existing DEM data to search for obvious disjoints. This is sometimes helpful in finding errors in datums, projections, etc. associated with both the triangulation and the DEM.

Orthorectification and Mosaicking

Technicians review the orthoimagery for:

- Seamless appearance (against seamline shapefiles)

- Image processing artifacts

- Overall color balance against the target appearance from the pilot project

C. CONTINGENCY PLAN

Contingency plans are implicit in the formal operation within Surdex. While we cannot control weather conditions, we can, and do, ensure more than the minimum acquisition and support resources. Some of the steps we take to ensure successful execution include:

- With up to five acquisition platforms, we will not hesitate to bring in an additional aircraft during good weather and/or access to difficult airspaces.

- Surdex has FAA-certified inspection, maintenance, and repair staff, independent of third-party support. This ensures maximum productivity for our aircraft and minimal reliance on the schedules of others.

- Surdex employs extensive cross-training of production technicians to address bursts of work or delays in schedule. For example:

  - Triangulation staff is supported by stereo compilation staff for the measurement and edit of points. Numerous Certified Photogrammetrists are also available to perform triangulation solutions and/or review.

  - Image processing personnel are cross trained to handle orthorectification/mosaic tasks.

  - Orthorectification personnel can perform many image processing tasks and can aid in image inspection.

  - Finishing personnel perform independent review of orthoimage deliverables. Additionally, these technicians are trained to perform DEM/LiDAR editing to back up the compilation staff.

  - For the typical summertime burst of production, part-time employees have been hired to handle limited and focused ortho/mosaic tasks on an as-needed basis.

  - Project managers and supervisors are experienced in technical work and can support bursts of demand if required.

- Our computing and storage systems use redundant storage and a combination of automated and manual backup of data at critical junctures in the process. All backup data is stored in the hangar facility separate from the main office. Battery backups are employed to address power outages, allowing a safe shutdown of all servers and drives.

- All critical equipment and software are under maintenance agreements.

- Our production facility has a diesel-powered generator that can be re-fueled indefinitely, ensuring production is not affected in the instance of a power failure.

- If weather conditions prohibit use of certain airports, we can re-locate our aircraft to other airports.

- We have several acquisition subcontractors from our USACE, GPSC, and USDA work available to assist in acquisition if necessary.

D. LOCALIZED AND UNIQUE ISSUES

With years of experience capturing imagery in the State of Texas, Surdex has gained valuable insight relating to the proper process for imagery acquisition in the state. Surdex has worked for TNRIS and the Houston-Galveston Area Council on numerous projects, and over the course of this work we have dealt with border access issues, coastal area weather, and snow cover in the East Texas Upland area during the main acquisition window. Surdex was also awarded a contract in 2014 to acquire 50 cm GSD orthoimagery of the entire state. We have become very familiar with localized and unique issues across Texas. Surdex's successful completion of the CAPCOG 2020, 2021 and 2022 orthoimagery projects and prior projects with Brazos County in 2015, 2017 and 2021 is evidence we understand localized and unique issues.

E. PRODUCTION CENTERS AND ASSOCIATED WORK

Our headquarters and production facility are based in the greater metropolitan St. Louis, Missouri area. Approximately 100 employees work at our headquarters building and hangar complex at the Spirit of St. Louis Airport in Chesterfield, Missouri.

Surdex believes that there is no substitute for experience. Our workers' experience on numerous projects in Texas, including a statewide project, resolving difficulties and streamlining processes enables them to apply their knowledge on your project, saving time, avoiding potential problems, and improving quality.

Our senior staff has an average of 25 years of experience. We have 8 ASPRS Certified Photogrammetrists, 1 ASPRS CMS-Lidar, 1 ASPRS CMT-GIS, 1 GISP, 2 Registered Land Surveyors and 1 Project Management Professional (PMP) certification. Many of our staff have degrees in mapping or engineering fields. With this depth of experience, our senior staff understands how to analyze projects, develop the best approaches, avoid potential problems, and quickly resolve them if they do arise.

Surdex's aircraft are housed in our 18,000 square foot hangar at Spirit of St. Louis Airport, only blocks from Surdex's headquarters in the St. Louis area. Surdex's full-time aircraft maintenance staff is certified for A&P (Aircraft and Powerplant) with Inspection Authorization (IA) to support our fleet. This staff is qualified and licensed to perform FAA-mandated inspections, maintenance, and repair. We are therefore not reliant on the schedules and costs of third parties. We have even transported maintenance personnel to project areas to perform inspection, maintenance, or repair in the field.

Surdex's 17,000 square foot headquarters and production facility (left)
and 18,000 square foot hangar on the Spirit of St. Louis Airport grounds (right)

F. COMMITMENT OF RESOURCES

- Mr. Cornell Rowan, ASPRS Certified Photogrammetrist, will be assigned as the dedicated project manager. Cornell managed the 2020, 2021, 2022, and 2023 orthoimagery project for the Texas Capitol Area Council of Governments as well as numerous other Texas projects including the 2012 South Texas Project, several Smith County and Houston-Galveston Area Council projects, and the 2014 Texas Statewide Program. His previous experience will prove invaluable to the successful completion of this project.

- Cornell has worked with up to 21 partners on a single project, so he will easily be able to work with Capital Area Council of Governments and make sure all needs are met.

- For the acquisition phase, we will have up to five aerial acquisition platforms. Each includes a Conquest or 414 hosting an ADS100 sensor.

- Surdex will provide the necessary ground surveying resources for field operations and office processing.

- Surdex commits the necessary production resources for image processing, triangulation, ortho/mosaic steps, project QC, and product delivery.

- The Surdex web-based SurCheck inspection tool is offered free of charge for the Capital Area Council of Governments for orthoimagery inspection.

G. PAST PERFORMANCE

The graphs below demonstrate the internal focus Surdex places on timely delivery of high-quality geospatial products that we will apply to the Orthoimagery in the Texas Capital Area project as well.
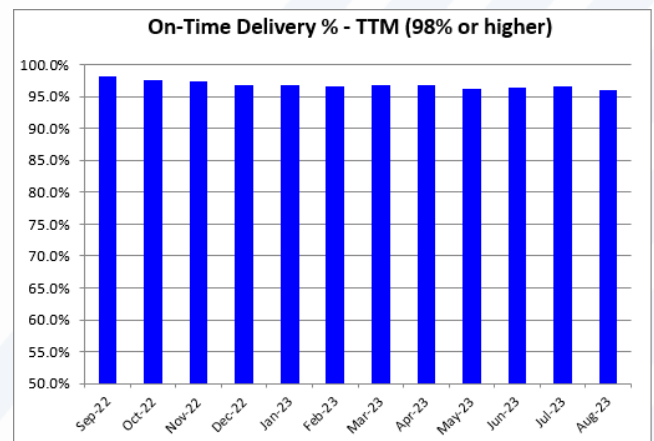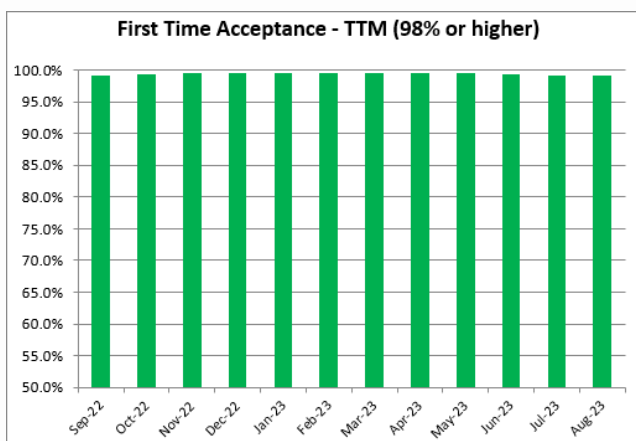
Detailed descriptions of a few of our completed projects are included in the following pages. Your assigned project manager, Cornell Rowan, managed the H-GAC and CAPCOG projects.

H-GAC IMAGERY

DETAILS		PROJECT NARRATIVE
CLIENT	**Houston-Galveston Area Council (H-GAC)**	Surdex Corporation was contracted by the Houston-Galveston Area Council (H-GAC) to acquire aerial imagery for several different projects through a competitive bidding process, most recently in 2022. Particular attention was paid to multiple tall building areas around the City of Houston, requiring additional flight lines to reduce the amount of building lean in the final products. For this project, Surdex utilized the existing LiDAR DEM datasets for the orthorectification process.
CONTACT PERSON	Tanya Nguyen Director of Data Services (713) 993-4569 tanya.nguyen@h-gac.com	
ADDRESS	Houston-Galveston Area Council 3555 Timmons Lane Houston, TX 77027	Surdex also acquired post-Hurricane Harvey flooding imagery for H-GAC in 2017.
END DATES	November 2022, August 2020, October 2018, February 2018, August 2016, January 2015, December 2012	
SUBCONTRACTORS	InMASS (ground survey)	

ACQUISITION SUMMARY

YEAR	GSD	≈ SQ. MI.
2022	6"	14,031
2020	12"	6,068
	6"	7,393
2018	12"	6,068
	6"	7,393
2017	12"	10,322
2016	6"	7,090
2014-2015	12"	6,630
	6"	7,400
	3"	68
2012	12"	13,906
	6"	1,334
	3"	12

PROJECT DELIVERABLES	12"/6"/3" 4-band digital orthoimagery processed to separate RGB and CIR GeoTIFFs - Web imagery viewing service for approximately 50 participants (2020) - MrSID mosaics (2014, 2016 & 2018) - Seamline shapefile - FGDC metadata
HIGHLIGHTS	- Acquiring imagery for optimal ground conditions prior to onset of rain - Deliveries on or ahead of schedule - Achieving proper color balance over extensive areas of water

DISTRICTWIDE ORTHOIMAGERY

DETAILS		PROJECT NARRATIVE
CLIENT	**Southwest Florida Water Management District (SWFWMD)**	Surdex was contracted to provide orthoimagery for the Southwest Florida Water Management District (SWFWMD) and additional project partners in 2017 and in 2020. Because this project included numerous participants with varied requirements and needs, communication among participants and coordination were key to the successful completion of the project. Imagery was collected with a Leica ADS100 digital image sensor, processed and delivered as 6" GSD 4-band digital orthoimagery.
CONTACT	Nicole Hewitt, GIS Analyst (352) 796-7211 ext. 4393 Nicole.Hewitt@swfwmd.state.fl.us	
ADDRESS	Data Collection Bureau 2379 Broad Street Brooksville, FL 34604	• SWFWMD's core project area included all or part of 14 counties: Levy, Marion, Citrus, Sumter, Hernando, Lake, Pasco, Hillsborough, Polk, Pinellas, Manatee, Sarasota, Charlotte and Highlands.
END DATES	September 2020, October 2017	• The Florida Department of Revenue contracted for two additional counties (DeSoto County and Hardee County).
SUBCONTRACTORS	None	• Three counties partially outside the District boundary joined the project as add-ons (Polk County, Charlotte County and Marion County).

ACQUISITION SUMMARY

YEAR	GSD	SQ. MI.
2020	6"	12,651
2017	6"	11,479

PROJECT DELIVERABLES	• 6" GSD 4-band digital orthoimagery in uncompressed GeoTIFF format • Separate delivery of Hardee and DeSoto counties to FDOR, including metadata and seamlines • MrSID mosaic for Lakeland area (2017) • DEM used for ortho generation in LAS 1.4 PDRF 6 with associated metadata in WKT • Metadata files for each tile, seamlines, DEM and project wide (four formats)
HIGHLIGHTS	• Small flight window—mid-December through end of February

ORTHOIMAGERY IN THE TEXAS CAPITAL AREA

DETAILS		PROJECT NARRATIVE
CLIENT	**Capital Area Council of Governments (CAPCOG)**	Surdex was contracted to provide orthoimagery at three different resolutions for an area totaling approximately 14,600 square miles in the capital area of Texas and McLennan County. The project was run through the Texas Water Development Board and included several project partners including the Capital Area Council of Governments, several different municipalities, McLennan County and McLennan County 911. Surdex carefully designed the acquisition and prepared the final deliverables in a manner that incorporated the requirements from each project partner.
CONTACT	Nikolas Puillas, GIS Operations Coordinator CAPCOG (512) 916-6171 npuillas@capcog.org	
ADDRESS	6800 Burleson Road Building 310, Suite 165 Austin, TX 78744	
END DATES	June 2022, July 2021, and July 2020	
SUBCONTRACTORS	None	

ACQUISITION SUMMARY

YEAR	GSD	SQ. MI.
2022	12"	11,551
2021	12"	7,389
2020	12"	12,296
	6"	2,286
	3"	12

PROJECT DELIVERABLES	• 4-band uncompressed GeoTIFF tiles (with TFW) • JPEG2000, ECW and MrSID compressed tiles • JPEG2000, ECW and MrSID mosaics
HIGHLIGHTS	• Project plan addressed 3 different resolutions and tall building areas • Surdex provided deliverables in various formats and projections per each participant's specifications

H. SURDEX'S WEB-BASED INSPECTION TOOL (SURCHECK[SM])

To assist our clients with the inspection of their orthoimagery, Surdex provides – *at no additional cost* – our web-based image inspection tool, SurCheck. This tool is the result of years of continuous improvement and responses to user requests for enhancement. It is implemented in HTML5, JavaScript, php, and the ArcGIS API for JavaScript, providing flexibility for enhancements in the future.

SurCheck streamlines the inspection, remedial action, and delivery timelines. As call-outs are reported by reviewers, Surdex resolves each and notifies reviewers so they may confirm the correction. When all call-outs are resolved for the project, the data can be shipped for final delivery. In many cases, clients choose to have orthoimagery added to SurCheck incrementally, further expediting inspection and allowing leveling of inspection resources.

SURCHECK℠	
FEATURE	**BENEFIT**
ADMINISTRATIVE	
Username and password login access	Protected access
Client manager can assign reviewers to separate work zones within a project	Ability for multiple reviewers increases inspection rate, supports multiple partners
Four tiers of reviewers: • Standard inspector • Client manager • Surdex reviewer • Final client reviewer	Covers entire lifecycle of inspection and resolution process, ensuring product is fully inspected and accepted
Help menu for most options	Online assistance with operation eliminates the need for a training guide, allowing inspection sessions to continue uninterrupted
GENERAL INTERFACE	
Browser-based	Works on any computer without the need to install software
Simple one-page design	Simple interface makes training easy, maximizes screen real estate for viewing imagery
Surdex-provided overlay of seamlines	Assists in searches for potential artifacts
Swipe function with user-selectable layer	Provides a quick comparison to other imagery
Ability for users to add their own map layers	Enables use of desired datasets for comparison—examples include historical imagery, vector overlays, control point overlays, parcels, ArcGIS Online layers, etc.
Magnifier window	Quick toggling between magnifier and standard view allows reviewers to retain scale with close-up inspection of potential artifacts
Histogram	Aids in determining adherence to project-specific image metrics
Progressive inspection	Methodical approach streamlines inspection and portrays status
Save call-outs to a shapefile or CSV files	Export call-outs for non-SurCheck users for review (can view in other applications i.e. Esri ArcMap, AutoCAD); CSV easily imported into Excel
Measurement tool	Supports investigation of call-outs against specifications (such as seamline shear, size of artifact, etc.)
Print current screen to printer or PDF	Simplifies creation of samples, bug reporting, etc.

Upon request, Surdex can provide a video and PowerPoint presentation to familiarize and train users on the tool's use, as well as access to a sample project.
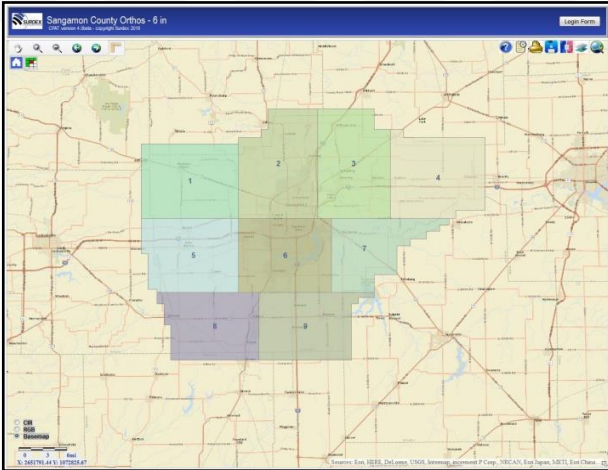
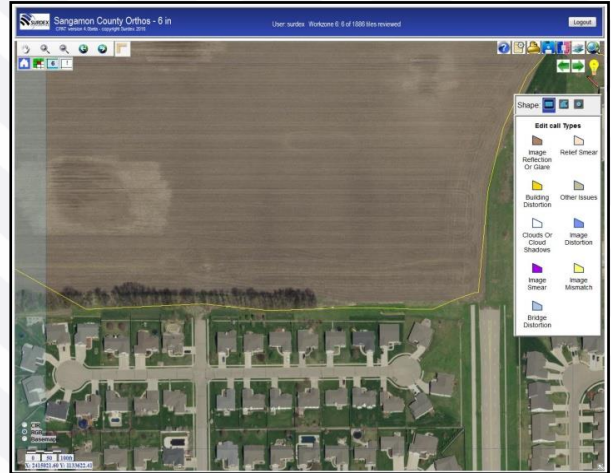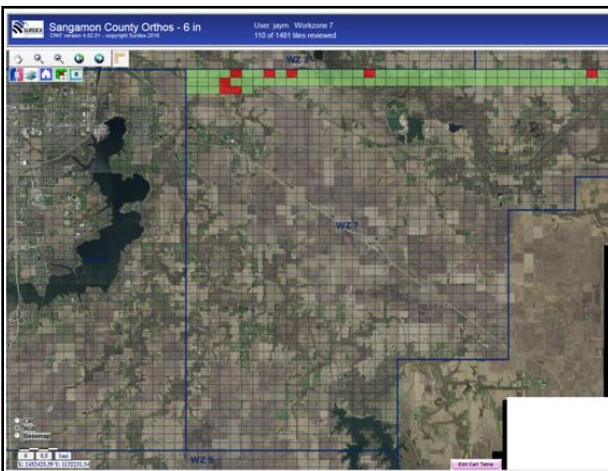The following page portrays selected aspects of SurCheck.

Initial screen showing AOIs

Call-out template

Work zone progress

Swipe between color and ArcGIS.com imagery

Manager call-out review

Seamline

Selected call-out

Call-out table

Manager actions

Summary of selected call-out
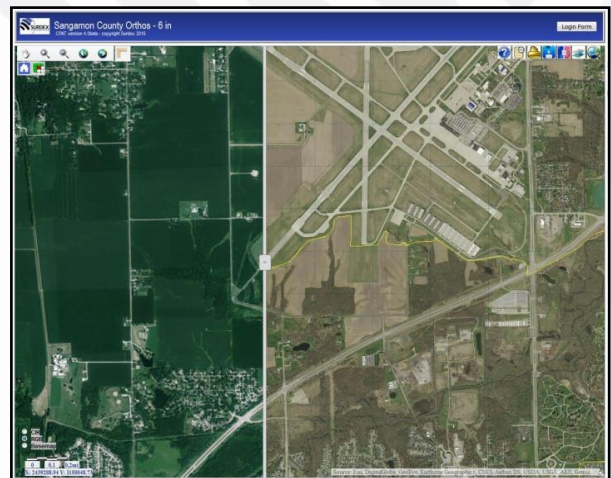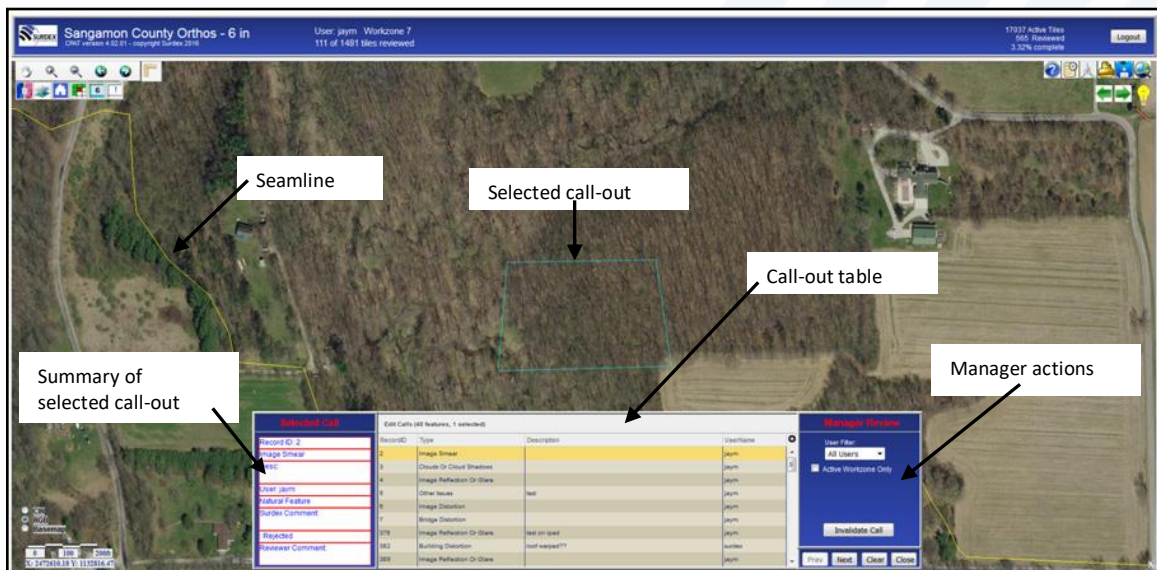
I. COMMUNICATION

1) REPORTING

Surdex understands the importance of regular communication throughout an orthoimagery project. Project Manager Cornell Rowan will attend the kick-off meeting as well as all subsequent meetings with the Capital Area Council of Governments and provide the necessary reports. Key production staff will also attend the kick-off meeting. The reporting plans are detailed in the table below.

SUMMARY OF REPORTING PLANS FOR THE PROJECT	
KICK-OFF MEETING	To be scheduled with Capital Area Council of Governments after project scope is finalized. Proposed agenda includes: • Identify points of contact for all aspects of project • Review scope and specifications • Discuss project design (flight and ground survey) presented by Surdex prior to meeting • Provide sensor calibration reports • Finalize invoice schedule and payment proportions
SUBSEQUENT MEETINGS	Surdex is willing to meet with the Capital Area Council of Governments at any time to address specific issues and/or progress
REPORT ON MOBILIZATION	Surdex will appraise and discuss with the Capital Area Council of Governments of plans to mobilize to/from the project area on an as-needed basis
AQCUISITION PROGRESS **POST-PROCESSING** **DELIVERY OF PRODUCTS AND PERCENTAGE OF COMPLETION OF PROJECT PHASES**	• Daily updates provided via real-time status graphics and reports during acquisition • Available for weekly telecons/webcast at the request of the Capital Area Council of Governments.

2) PROJECT MANAGEMENT

Mr. Cornell Rowan will be the project manager and serve as the primary point of contact to your designated representative(s) at all times. Cornell has extensive experience managing projects in Texas, so he is very familiar with the project area and the specific concerns of the Capital Area Council of Governments. He has 39 years of professional experience in the field has been with Surdex for 15 years, and he is a Certified Photogrammetrist. Cornell reports to the Director of Project Management, Mr. Wade Williams, who is also a Certified Photogrammetrist.

Surdex's project management approach is founded on frequent communication. Each of our project managers has experience in nearly all phases of production. They are guided by the philosophy that they must support the objectives of their clients by efficiently managing internal resources and maintaining schedules as well as quality and accuracy standards.

Communication can take the form of face-to-face meetings, e-mails, telephone calls, and webcasts. Our project managers are required to communicate with each of their clients at least once a week and must respond to a client's communication within 24 hours of receipt. The following graphic is an example of the Project Overview section of a Project Status Report.

Sample Project Status Report illustrating percent of progress by phase and area

Project Overview

Status by Phase						
Project Area	**Survey**	**LiDAR Flown**	**LiDAR processed**	**Imagery Flown**	**Digital Orthos Produced**	**Plan/Topo Mapping**
6 inch – West	100%	-	-	100%	0%	-
6 inch – East	100%	-	-	100%	N/A	-
12 inch	100%	-	-	100%	0%	-
Status by Task	**100%**	**-**	**-**	**100%**	**0%**	**-**
Legend	Not Started	In Progress	Complete	Issues/Concerns		

Each of our project managers is required to:

- Complete a Project Scope document that fully details the project specifications
- Conduct a client kickoff meeting to ask questions and arrive at a consensus on all project details
- Host internal meetings:
    - Kickoff meeting with department heads to review all project requirements, evaluate resources, and establish schedules
    - Weekly internal status meetings with all applicable department heads and senior management
    - Project close-out meeting that assesses our performance in detail and results in "lessons learned" to improve future performance
- Maintain information in our central database:
    - Weekly status updates of project schedules (external and internal)
    - QA/QC results to ensure quality expectations are met
    - Review project costs and generate invoices

Surdex tracks real-time status of acquisition design, acquisition progress, production steps and inspection results for both imagery and lidar to ensure projects remain on schedule. Acquisition progress is reported in our daily flight planning meeting via graphical and textual reports, as this is an extremely critical phase of the project. Raw data inspection occurs immediately after acquisition, and the database is updated with inspection results, triggering re-flights in a timely manner. This ensures that any re-flights occur as close to the original acquisition date as possible, minimizing differences from temporal changes.

J. PROJECT SCHEDULE

PROPOSED SCHEDULE FOR 2024		
TASK	**START DATE**	**END DATE**
PROJECT PLANNING / SURVEY CONTROL	May 15, 2024	June 01, 2024
IMAGERY ACQUISITION	June 01, 2024	June 30, 2024
AEROTRIANGULATION	July 03, 2024	July 14, 2024
ORTHO PRODUCTION	July 14, 2024	November 30, 2024
ORTHO PILOT	August 15, 2024	
ORTHOIMAGERY POSTED TO SURCHECK	October 31, 2024	
CLIENT REVIEW ON SURCHECK	November 01, 2024	November 15, 2024
ORTHO CORRECTIONS	November 16, 2024	November 30, 2024
ORTHO FINAL DELIVERABLES	November 30, 2024	

*Final Deliverables will include compressed 4-band mosaics for the Capital Area in JPEG2000 format.

K. WARRANTY

Imagery is covered by warranty for two years after delivery.

Approved DIR Contractor

Surdex is an approved Texas DIR Contractor for Geospatial Products and Services: DIR-CPO-4496.

PRICING

2024 LEAF-ON ORTHOIMAGERY PRICING	
PRODUCT	**PRICE**
12-INCH DIGITAL ORTHOIMAGERY	$185,640
12 MONTHS OF DATA HOSTING	$5,800
TOTAL	**$191,440**

SURDEX CORPORATION   **CAPCOG**

R. C. Hoffmann
Signature   Signature

Date   April 24, 2024   Date

HELP US PREVENT PAYMENT FRAUD *– Surdex will adhere to the original payment processing method in our contract. Surdex will not contact you to change payment processing methods. Surdex requests all questions or concerns be directed to Surdex Corporation, Accounting.*

TERMS AND CONDITIONS

The following terms and conditions are incorporated in and together with the proposal become a part of the contract between Client and Surdex Corporation ("Surdex"). Both parties agree as follows:

ACCESS

Client shall arrange for access to and make all provisions for Surdex to enter upon all public and private lands as required for Surdex to perform its services.

INVOICES / PAYMENT SCHEDULE

Client is solely responsible for payment of services; payment will in no way be conditional upon Client receipt of payment from another party. Payment schedule is to be:

SALES, SELECT ONE OPTION:

- Payment due within 30 days of invoice date.
- 60% due upon completion of acquisition, 40% due upon final delivery.
- Invoiced monthly for the proportional amount of work performed.
- FOR NEW CLIENTS: 50% due upon notice to proceed, 50% due upon final delivery.

TERMS / INTEREST / LATE PAYMENT

Payment shall be due 30 days after receipt of an invoice. Interest shall accrue on past due invoices at the rate of 1½ percent per month (18% per annum), or the maximum rate allowed by law, whichever is less, from the date that payment was first due.

Payments shall be applied first to accrued interest and then to unpaid principal. Client agrees to pay Surdex's fees, costs, and other reasonable expenses, including attorney's fees, incurred in any efforts to enforce any provision of this Agreement, including efforts to compel payment of past due amounts.

If a project is inactive for more than 45 days, Surdex may suspend the services and bill Client for all services performed to date.

TAXES

If Client does not provide evidence of tax exempt status prior to commencement of any services by Surdex, then Client shall be responsible for any and all taxes in connection with such services.

SURDEX'S INSURANCE REQUIREMENTS

Surdex shall maintain in force throughout the term of this Agreement insurance of the types and in the minimum amounts set forth below.

1) WORKERS COMPENSATION: Statutory Coverage, including Employer's Liability with minimum limits of $1,000,000.

2) COMMERCIAL GENERAL LIABILITY: $2,000,000 Combined Single Limit per occurrence for Bodily Injury, Personal Injury, and Property Damages, including Contractual Liability covering Surdex's indemnification obligations in this Agreement.

3) COMPREHENSIVE AUTOMOBILE LIABILITY: $1,000,000 Combined Single Limit per accident including any auto, all owned autos, hired autos and non-owned autos.

4) PROFESSIONAL LIABILITY: $2,000,000.

5) AIRCRAFT LIABILITY: $10,000,000, if aircraft are employed.

6) VALUABLE PAPERS: $150,000.

INDEMNITY

Surdex agrees to indemnify, defend and hold Client harmless from and against any and all claims, demands, suits, damages, and costs (including attorney' fees and cost of defense) due to bodily injury or property damages arising directly out of Surdex's negligence, but only to the extent that such indemnity is covered by Surdex's CGL or Professional Liability insurance.

As a material part of the consideration to Surdex, Surdex assumes all risk of damage to its property or injury to persons, including its agents, contractors and employees in performance of Services hereunder, and Surdex hereby waives all claims in respect thereof against Client, except for any claim arising out of Client's negligence or willful misconduct. As used in this Section, the term "Client" shall include Client's employees, agents and contractors, if applicable, and "Surdex" shall include Surdex's employees, agents and contractors, if applicable.

Client agrees to indemnify, defend and hold Surdex harmless from and against any and all claims, demands, suits, damages, and costs (including attorney' fees and cost of defense) due to bodily injury or property damages arising directly out of Client's negligence.

TESTING

Client shall independently verify the accuracy of Surdex's services prior to using or relying on the same (or providing the same to others for any reason), and in an event no later than six (6) months after completion of the services (the "Claim Period").

If Client fails to take commercially reasonable efforts to verify the accuracy of Surdex's services as required herein, then Client shall be deemed to have waived all claims and rights of recovery against Surdex.

RIGHT TO CURE

If Client discovers errors in the deliverables within the Claim Period, Client shall promptly notify Surdex, and Surdex shall have the right to correct or repair for ninety (90) days after receipt of Client's notice (or such longer period if 90 days is insufficient) at Surdex's sole cost.

LIMITATION OF LIABILITY

To the fullest extent permitted by law, Surdex's total aggregate liability to the Client arising out of this Agreement, whether arising in contract, warranty, tort (including negligence), strict liability, or otherwise, is limited to the Total Price paid to Surdex for this contract.

In the event of timely notice of any deficiencies, Surdex's liability extends only to correcting Surdex-related deficiencies and will in no case exceed the original fee, nor will it include any subsequent costs incurred by the client or others; said warranty does not extend to services, data, or control information provided by the client.

NOTWITHSTANDING ANYTHING TO THE CONTRARY, NEITHER CLIENT NOR SURDEX SHALL BE LIABLE TO THE OTHER FOR, AND EACH EXPRESSLY WAIVES THE RIGHT TO RECOVER, CONSEQUENTIAL, INDIRECT, PUNITIVE, SPECIAL OR EXEMPLARY LOSSES OR DAMAGES, WHETHER ARISING IN CONTRACT, WARRANTY, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO LOSSES OF USE, PROFITS, BUSINESS, REPUTATION OR FINANCING.

OTHER

Any services being provided to Client by Surdex may be terminated by either party upon ten (10) business days' prior written notice, and in such event Surdex shall be paid by Client for all services performed up to and including the termination date, including reimbursable expenses.

FORCE MAJEURE

Neither Client nor Surdex shall be liable to the other for damages or delay in performance caused by acts of God, weather, strikes, labor disputes, accidents or any other event beyond the control of the other or its employees and agents.

ARBITRATION

All disputes arising out of or relating to this Agreement shall be decided by arbitration, in accordance with the rules of the American Arbitration Association. The prevailing party shall be awarded attorneys' fees and costs.

OWNERSHIP OF WORK PAPERS

Surdex agrees that all materials, reports, drawings, studies, specifications, estimates, maps, computer data tapes, computations and other materials prepared by or for Client under the terms of this Agreement shall upon proper payment by Client to Surdex become the property of the Client. However, any processes, procedures, programs, software, or similar practices of Surdex, whether developed prior to or during the project, shall remain the property of Surdex until sold or licensed to Client for its use or use by others for separate compensation. Client shall not alter the same in any manner and shall waive any claim against Surdex and shall, to the fullest extent permitted by law, indemnify, defend, and hold Surdex harmless from any claim or liability for injury or loss arising from unauthorized alteration of Surdex's work product.

CONFIDENTIALITY

Surdex shall keep confidential all information obtained from and designated as confidential by Client and shall not divulge any confidential information concerning the Project to any person or entity (other than Surdex's subcontractors, employees or other persons or entities to the extent necessary to complete the services) unless written approval is granted by the Client or as ordered by a court of competent jurisdiction.

GOVERNING LAW

This Agreement shall be governed by and construed in accordance with the laws of the State of Missouri. Should a conflict of terms arise from agreed to provisions, the terms of this agreement shall prevail.

EXECUTION

Upon signing of this document, this Agreement shall be binding upon and inure to the benefit of the parties hereto, their successors and assigns.