City of Fayetteville Staff Review Form

City Council Agenda Items and Contracts, Leases or Agreements

20-Aug-13
City Council Meeting Date
Agenda Items Only

David Jurgens	Wastewater Treatment	Utilities
Submitted By	**Division**	**Department**

Action Required:

approving the purchase of five software seats of GeoKNX Mobile Implementation software from MarshallGIS for $26,975.00 to allow field interface between Hansen and ArcGIS software in the field by Water/Sewer field crews, approve a $4,000 contingency, and approve a bid waiver.

$ 30,975	$ 38,000	Water/Sewer Equipment Expansions
Cost of this request	Category / Project Budget	Program Category / Project Name
5400-1840-5209.00	$ -	Water/Sewer Operations
Account Number	Funds Used to Date	Program / Project Category Name
13019.1	$ 38,000	Water/Sewer
Project Number	Remaining Balance	Fund Name

Budgeted Item XX **Budget Adjustment Attached**

D Jurgens — Department Director — 2 Aug 13 — Date

Previous Ordinance or Resolution # _____

Original Contract Date: _____

Original Contract Number: _____

[signature] — City Attorney — 8-2-13 — Date

Paul A. Becker — Finance and Internal Services Director — 8-5-2013 — Date

Received in City Clerk's Office 08-02-13 P03:50 RCVD

[signature] — Chief of Staff — 8-5-13 — Date

Received in Mayor's Office ENTERED 8/5/13

[signature] — Mayor — 8/5/13 — Date

Comments:

To: Fayetteville City Council

Thru: Mayor Lioneld Jordan
Don Marr, Chief of Staff

From: David Jurgens, Utilities Director
Fayetteville Water and Sewer Committee

Date: August 2, 2013

Subject: Software Purchase for Hansen-GIS Interface Software from MarshallGIS

RECOMMENDATION

City Administration recommends approving the purchase of five software seats of GeoKNX Mobile Implementation software from MarshallGIS for $26,975.00 to allow field interface between Hansen and ArcGIS software in the field by Water/Sewer field crews, approve a $4,000 contingency, and approve a bid waiver.

BACKGROUND

Water and sewer field work is all recorded through work orders in the City's Hansen software. Virtually all of the work is performed on an asset, which has a physical location that is recorded in the City's ArcGIS mapping system. These two software systems do not interface. Additionally, using our current arrangement, all Hansen work orders must be written on paper by the field crews, which are then turned in to administrative staff who enter the information into the Hansen system in the office. For years, Water/Sewer and GIS staff have been gradually entering our water and sewer system attributes into our GIS system, providing very accurate field location data. This has recently been installed on smart phones, so field crews can find these assets using hand held devices.

DISCUSSION

The GeoKNX Mobile Implementation software from MarshallGIS provides the capability to both enter work order data from the field, in real time, and also links the work order with the asset on which the crew is working. It also allows field crews to take photos, linked to GPS coordinates, at the job site, without these entries having to be translated and separately named and saved back in the office. This will make our field operations more thorough, more accurate, and more efficient. Office staff will still be required to perform quality control checks on the field data, but this should improve with training.

We plan to start implementation of this system slowly, to identify the methods and techniques to make it work best for our field crews. By starting with five seats (three for field service representatives, and two for field crews), we can slowly and deliberately adjust our work procedures.

We are requesting the bid waiver because this software from MarshallGIS is the only software we have found, through extensive research, that has proven itself to successfully and reliably integrate Hansen and ArcGIS software in a mobile environment. MarshallGIS has worked with us in the past when integrating Hansen and ArcGIS operations. We currently use MarshallGIS software to synchronize addresses between the two systems, and it has performed excellently.

This purchase include the software seats, the first year's maintenance fee, installation, and training.

BUDGET IMPACT

Funds are available within the budget for project 13019, Water/Sewer Equipment Expansions.

ORDINANCE NO. _____

AN ORDINANCE WAIVING THE REQUIREMENTS OF FORMAL COMPETITIVE BIDDING AND APPROVING A CONTRACT WITH MARSHALLGIS IN THE TOTAL AMOUNT OF $26,975.00 TO PURCHASE FIVE (5) SOFTWARE SEATS OF GEOKNX MOBILE IMPLEMENTATION SOFTWARE FOR USAGE BY THE WATER AND SEWER DIVISION, AND APPROVING A PROJECT CONTINGENCY OF $4,000.00

WHEREAS, GeoKNX mobile implementation software from MarshallGIS provides the ability to enter work order data from the field in real time while linking the work order with the asset on which a crew is working on a digital map; and

WHEREAS, the software acts as a mobile link between the City's Hansen software and its ArcGIS mapping system allowing field crews to take photos linked to GPS coordinates at a job site, without the entries having to be separately saved into another computer; and

WHEREAS, the GeoKNX software offered through MarshallGIS is the only software the City has found, through extensive research, which has proven itself to successfully and reliably integrate the Hansen and ArcGIS software in a mobile environment;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF FAYETTEVILLE, ARKANSAS:

Section 1: That the City Council of the City of Fayetteville, Arkansas hereby determines an exceptional situation exists in which competitive bidding is deemed not feasible or practical and therefore waives the requirements of formal competitive bidding and approves a contract with MarshallGIS in the total amount of $26,975.00 to purchase five (5) software seats of GeoKNX mobile implementation software for usage by the Water and Sewer Division, and further approves a $4,000.00 project contingency.

PASSED and **APPROVED** this 20th day of August, 2013.

APPROVED: ATTEST:

By: _____
LIONELD JORDAN, Mayor

By: _____
SONDRA E. SMITH, City Clerk/Treasurer

GIS For Your World

Quote

To: Greg Mitchell
City of Fayetteville, AR
113 W Mountain
Fayetteville, AR 72701
Phone: 479-444-3431
Email: gmitchell@ci.fayetteville.ar.us

Quote #: QUO-01547-S3G9
Rev #: 1
Project Name: Fayetteville GeoKNX Mobile
Issue Date: 6/14/2013
Valid: 6/14/2013 through 8/31/2013
Prepared by: Rhett Harman
Phone: 208-514-0411 ext.114
Email: rharman@marshallgis.com

Item #	Product Descriptions	Qty	Unit Price	Promotional Price Per Seat	Extended Cost
1	GeoKNX Mobile for Hansen Software Seats Licenses* (GoMap!,GoCollect!, GoRespond!, GoWork!). Includes Server and Spatial Administrator.	5	$3,850.00	$1,925.00	$9,625.00
2	GeoKNX Mobile Support and Maintenance**	5	$770.00	$770.00	$3,850.00
3	GeoKNX Implementation Services	5	$1,500.00		$7,500.00
4	GeoKNX Training	3	$1,500.00		$4,500.00
	TOTAL COST				**$25,475.00**
*Price includes cost for Esri ArcGIS Runtime license.					
** Price includes Esri ArcGIS Runtime Maintenance.					

plus travel expenses estimated at $1,500.

Payment Terms: Software, hardware and standard maintenance are due upon receipt. Any services will be billed upon successful completion of service. Travel expenses are not included in this price quote and will be billed as incurred.

Usage Terms and Conditions: All current and future software purchases are licensed under and subject to acceptance of the Master License Agreement Terms and Conditions.

marshallGIS

GeoKNX® Mobile Implementation Scope of Work

Prepared for the City of Fayetteville, AR

July 31, 2013

2915 N. Cole Rd.
Boise, ID 83704
Phone: 208-514-0411
geoKNX@marshallGIS.com
www.marshallGIS.com

TABLE OF CONTENTS

GeoKNX® Mobile Implementation Scope of Work

Prepared for the City of Fayetteville

INTRODUCTION

Overview:

The City of Fayetteville (City) has requested that MarshallGIS provide and implement five (5) seats of GeoKNX Mobile. The goal of this GeoKNX Mobile Implementation Scope of Work is to identify what tasks will be completed within the eight (8) days in the quote 20130723_GeoKNXMobileQuote_5Seats_Fayetteville. These will be identified as "Required" in this scope. MarshallGIS has also identified additional "Optional" tasks that MarshallGIS provides to customers. The City can decide whether these optional tasks would be of value. If so, MarshallGIS can provide these services.

This project will focus on successful integration of Esri and Hansen technologies. The emphasis will be on associated functionalities like mobility and synchronization to support key business workflows at the City.

MarshallGIS is unique in that we are partners with Esri and Hansen, and we designed and developed GeoKNX Mobile to integrate GIS and Hansen. We have a strong understanding of both Esri and Hansen technologies. We are the only provider of a mobile GIS COTS (Commercial Off-The-Shelf) solution that integrates an Esri Geodatabase, GPS, and Hansen in the field.

MarshallGIS Process:

MarshallGIS uses a standard technology development process which includes an agile or iterative approach. This process includes Planning, Design, Implementation, Testing, and Production components.

MarshallGIS uses a COTS product requirements approach. Using existing platforms provides a means of involving the customer early in the process through workshops, education, and incorporating real business solutions. This approach also provides an accelerated project lifecycle and reduces time to deployment.

MarshallGIS will implement five seats of GeoKNX mobile solutions in the City's test environment as a means of providing the City with tools to review and provide feedback. This is part of the iterative implementation process and allows quick feedback to fine-tune the COTS configurations.

MarshallGIS defines a "system" as a combination of Data, Hardware, Software, Connectivity, and People. Implementation includes development of one or more of the components of the system, as needed, based on the assessment and plan. Technology transfer typically means training of system administrators and field users, but also includes technology transfer to management and other people affected by the overall system in the form of webinars and workshops. Deployment also includes Go-Live Assistance to assist the City with the change management and rollout to the field.

Qualifications:

MarshallGIS has unique qualifications that come with being partners with both Esri and Hansen. We have in-depth knowledge of Esri technologies, are an Esri Silver Partner, and have won numerous Esri awards including the Foundation Partner award. We are the only provider of a mobile GIS COTS solution that integrates an Esri Geodatabase, GPS and Hansen data in the field.

Scope:

Below is our proposed scope of work to accomplish the development of an integrated management system. This scope includes some implementation and technology transfer tasks along with the planning phase. We are proposing implementation and technology transfer tasks since the City has already made some decisions such as building GIS capability and integration of Hansen and GIS with GeoAdministrator and IMV. In addition we have proposed optional tasks for development of GeoKNX® Mobile as the City has expressed interest in this technology.

1. PLANNING

1.1 Conduct Kickoff Meeting (Required)

Purpose:	To establish channels of communication for the project, finalize project plan, identify roles, and review the scope of the project
Milestones:	Kickoff Meeting
Deliverables:	Project Plan in MS Project format, Communications Plan
Assumptions:	At a minimum MarshallGIS PM & the City PM will participate

MarshallGIS will conduct a kickoff meeting with the City. The MarshallGIS Project Manager (PM) will develop an agenda in collaboration with the City's PM. The objectives of the kickoff meeting will be to:

- Review and finalize the Project Plan
- Introduce team members, and identify roles and responsibilities
- Establish a communications plan (project invoicing, status reports, etc.)
- Review the scope of work

1.2 Identify and Document Business Workflows (Optional)

Purpose:	To identify and document opportunities to improve current workflows including mock User Interfaces (UI)
Milestones:	Workflow Review Meeting, Final Workflows
Deliverables:	Workflows, GIS and Hansen Configurations
Assumptions:	Business experts will be available to review and approve workflows

1.2.1 *Review Business Workflows*

MarshallGIS will evaluate and document the business workflows used by the City between Esri and Hansen. MarshallGIS will identify any special hardware (GPS or cameras) or real-time connectivity that is currently used by the City. MarshallGIS will assess how frequently GIS data will need to be refreshed on the laptops/tablets and develop a strategy to ensure no duplicate data collection will occur.

MarshallGIS will review any previously documented workflows. Current workflows will be reviewed prior to creating new/final workflows. This may be done immediately prior to or as part of the collaborative work sessions outlined in the next task.

1.2.2 *Finalize Workflows*

MarshallGIS will create final workflows for review and approval by the City. This is an important step in that these workflows will become the target for subsequent technology implementations. The workflows will be developed collaboratively between MarshallGIS and the City staff. The final workflows will look similar to the diagram below, and will also include detail on required data elements from Hansen or GIS. As an example, for workflows that include mobile software, mockups of data entry screens seen by field staff will be used. It is important to identify if workflows are dependent on any data that do not exist or are currently of inferior quality, as this will affect Go-Live scheduling and possibly overall success. If data development is required, then this becomes part of the Implementation Plan (Task 1.4).

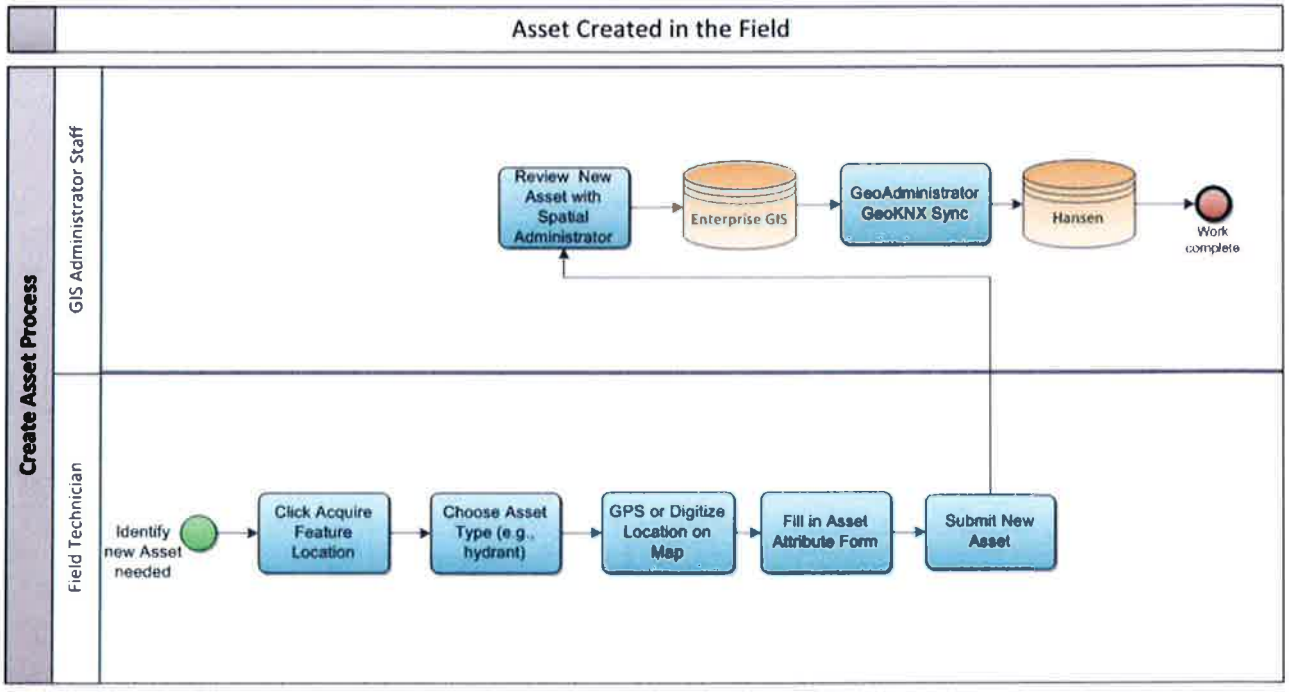

Figure 1: Example Workflow

MarshallGIS will develop workflows for Sewer and Water operations. Staff from each of these groups will be identified to work with MarshallGIS. On-site meetings will be planned with these groups, and will include meetings with management, admin, GIS, IT, and engineering staff that play a role in the workflows. We are assuming that we will develop workflows for each of the two operations groups. This will include workflows for mobile work orders and service requests (up to two configurations per group), mobile asset creation/update (up to two asset workflows per group), and GIS/Hansen back-office data synchronization.

Workflow documentation will be created. These workflows will identify how the City staff will use software, access data and change data.

MarshallGIS will present a detailed overview of the final proposed workflows. These workflows, and pros and cons of various modifications, will be discussed in a review session. Workflows will be finalized based on feedback from the City and delivered to the City for review and approval.

1.3 System Assessment (Required)

Purpose:	To review and document current status of GeoKNX® Mobile and their environment at the City
Milestones:	Download data, On-site Visit, Assessment Presentation
Deliverables:	Business group meetings, Draft and Final Assessment, Pre-Install Checklist
Assumptions:	Environment will be documented by the City (laptops/configurations/security). IT will provide MarshallGIS mxd and personal geodatabase, configurations, and Hansen 7.7 data currently used by Sewer and Water. The City Resources will be made available to complete assessment. The City's Production and Test Environments use identical versions of Esri and Hansen, and associated API's

The system is composed of data, hardware, software, connectivity and staff. In the system assessment, MarshallGIS will review each of these components, and identify where there may be gaps or insufficiencies that are a detriment to an optimized system. The assessment will focus on overall mobility and Hansen/GIS integration objectives. However, the goal is to identify actions/tasks that optimize the system enough to support the target workflows and to support Go-Live of the associated technologies.

1.3.1 *Assessment Overview (Define System – Boundaries of Scope)*

Usually done immediately after the kickoff meeting, MarshallGIS will review the system assessment process and review the planned deliverables with the City. The templates we will use to conduct the assessment will be reviewed with the City. The system assessment will be restricted to system resources required to support the final target workflows defined in Section 1.2.2.

1.3.2 *Review Software*

1.3.2.1 Esri Software

MarshallGIS will review the Esri software on the City test and production servers, desktops and laptops. MarshallGIS will verify the versions of Esri and associated API's. Login information for both systems will be documented. Any material deviations between test and production servers will be noted. All information will be added to the Esri Software Checklist. Any recommended modifications or upgrades will be identified.

In addition, ESRI associated software will be reviewed, such as conversion tools, data loading tools, data development tools, quality control tools or editor productivity tools. These tools may be custom developed or third party tools.

1.3.2.2 Hansen Software

MarshallGIS will review the Hansen software in place for the City's test and production servers. MarshallGIS will verify the versions of Hansen and associated API's. Login information for both systems will be documented. Any material deviations between test and production servers will be noted. All information will be added to the Pre-install Checklist.

1.3.3 *Hardware*

The City will provide any existing documentation of hardware used to support operations. MarshallGIS will assess current hardware's minimum and recommended specifications to support the target workflows. The following types of hardware will be reviewed: servers, laptops, PC's, tablets, GPS units, cameras, laser range finders, and any other peripherals critical to the City operations. MarshallGIS will also review and document the related OS and IIS server software versions, as well as server security.

1.3.4 *Wireless Connectivity*

The City will provide specifications of connectivity for wireless technologies within their service area and planned for the mobile devices. Any issues to-date will be documented.

1.3.5 *Review Data*

Data are a critical component of the optimized system, and often represent a large component of overall system cost and can block implementation if the data are insufficient. MarshallGIS will assess the type and quality of data available to the City, including the data used by Hansen (default and custom workbench tables, fields, etc.) and Esri software (geodatabase, domains, networks). MarshallGIS includes configuration data in its assessment of data. Configuration data typically restricts or simplifies the view of data in a larger system.

Access Data

MarshallGIS will need access to the City data for the assessment. We request that the City provide a download of the current Hansen, GIS and potentially AutoCAD data for use in the MarshallGIS environment. This will include a database backup of the Hansen 7 database, Web services backup, GeoAdministrator or IMV configurations, and GIS data (file or personal Geodatabase, map mxd file, and any existing mobile configurations).

In addition, MarshallGIS will verify that, as required:

- The GIS layers have Hansen COMPKEY and COMPTYPE fields in place, and they are of type "integer"
- There are no missing COMPKEYS in the COMP table (all COMPKEYS should be sequential with no gaps)

The City will also provide MarshallGIS remote access to its systems, if possible.

Review Hansen Data

MarshallGIS will review the Hansen databases from the City and evaluate its use in supporting the target workflows.

MarshallGIS will review the data to identify any data issues that may exist (i.e., linking errors, inconsistencies) and any blocking issues related to implementing mobile or GIS integration solutions.

Review Esri and Related Data

MarshallGIS will review the data provided by the City to identify any data issues that may exist (i.e., linking errors, inconsistencies) and any related blocking issues. MarshallGIS will also review AutoCAD data that may be available for developing needed GIS layers. From initial discussions with the City, there will likely be GIS data gaps, and critical GIS data development tasks needed for successful system implementation.

MarshallGIS will review the Esri databases from the City and will verify that, as required for Hansen integration:

- The GIS layers have COMPKEY and COMPTYPE fields in place, and they are of type "integer"
- No missing COMPKEYS are in the COMP table (all compkeys should be sequential with no gaps)

1.3.6 *Staffing*

Adequate staffing numbers and staff experience and training are key to the success of the overall system. MarshallGIS will review the current staffing and assess any training or availability issues. This will include management, supervisors, GIS/IT staff, system administrators, and other related positions. MarshallGIS will review and assess any gaps that may exist in staffing/training that could affect successful operations.

1.3.7 *Finalize and Present Assessment*

A summary of the assessment of the current data, software, hardware, connectivity, and staffing resources at the City will be drafted and presented. The City will review and provide comments. This assessment will identify any critical issues that need to be addressed prior to implementation and will include the worksheets and checklists as appendices within the document.

1.4 Implementation Plan (Optional)

Purpose:	To create a plan that ensures successful implementation of GeoKNX® Mobile
Milestones:	Draft and Final Implementation Plans
Deliverables:	MS Project Implementation Plan, Installation Worksheet
Assumptions:	None

Given the targeted workflows and the system assessment MarshallGIS will develop an implementation plan. The implementation plan will include tasks required to improve the system components as needed. Any dependencies among tasks or optional tasks will be identified. Task owners will be identified and may include the City, MarshallGIS, or other contracted staff. MarshallGIS will submit a draft Implementation Plan for review by the City. Upon approval by the City, the plan will be finalized and used as a roadmap for System Implementation.

MarshallGIS has identified and provided budget estimates for the following system implementation tasks: GeoKNX Mobile Installation, Configuration, Testing, and Training.

2. Implementation Services

2.1 Set Up Test Environment and Admin and Stakeholder Tech Transfer (Required)

Purpose:	To install GeoKNX on the City's Test Environment
Milestones:	GeoKNX Mobile successfully installed and configured on the City's test server
Deliverables:	GeoKNX Mobile 13.1 Test Environment Installation Report
Assumptions:	The City is available to assist with server tasks. MarshallGIS will have access to the City's environments

MarshallGIS will provide on-site services to install, configure, test, and train on the Test Environment.

2.1.1 *Review Test Environment and Restore Data*

MarshallGIS will review the City's Test Environment and data to verify a suitable environment exists for upgrade. MarshallGIS will verify that the minimum system requirements for GeoKNX® Mobile, Spatial Administrator, and Server have been met.

2.1.2 *Install GeoKNX® Components*

MarshallGIS will install Version 13.1 for GeoKNX Server, Spatial Administrator, and Mobile into the City's Test Environment. The upgrade process will be documented for use during the upgrade of the Production Environment.

2.1.3 *Create and Load Configurations*

MarshallGIS will build / upgrade the client configurations. An example of the client configurations are the fields on the forms (e.g., assets, work orders and service requests forms). The GeoKNX Mobile client will be configured to display the required fields and data, as identified in the workflow.

2.1.4 *Test GeoKNX® Functionality*

MarshallGIS will test all the components (Server, Spatial Administrator, and Mobile) to ensure they are functioning properly in conjunction with the City's GIS and Hansen data. The City will provide MarshallGIS with approval of the test installation prior to GeoKNX being installed in the City's Production Environment.

2.1.5 *Test the City's Workflows*

MarshallGIS will test the approved workflows that use MarshallGIS software and the final client configurations. Test data will be used to test workflows.

2.1.6 *Document Test Environment*

MarshallGIS will provide a Test Environment Report that documents what was completed on the Test Environment. This will be provided for review and approval by the City.

2.1.7 *Administrative Training (On-Site)*

The Administrative Training will include the back-office users responsible for supporting the mobile operations. In addition, this will include the supervisor(s) responsible for managing field crew(s). This will include related IT, GIS, Hansen, and other business experts in the Information Technology Department. The Administrative Training will be done during the **on-site visit** (up to four hours) to the City and will be conducted on the Test Environment. This will enable the administrators of the environment to be comfortable with the systems, data, and configurations prior to bringing in the field crew and going live. The City will then have a period of time (usually two weeks) to further test the system prior to switching to the Production Environment.

MarshallGIS will provide the City with a Quick Reference Document to augment the user documentation that summarizes the operations of GeoKNX Mobile in the City. Upon successful training, the City will be ready to Go-Live and switch operations to the Production Environment.

Benefit/Objective of Administrative Training:

Provides the staff responsible for managing the software with a clear understanding of how the solution works/interacts with the various enterprise systems, how to configure the components for the field users and how to review updates coming in from the field. Having the Administrative Training before Field Training is very helpful because it allows internal staff (typically supervisors/managers of field staff) to test the solution prior to rolling it out to field (end) users and an opportunity to optimize workflows and configurations for the City's

specific needs. This will enable the administrators of the system to be comfortable with the systems, data, and configurations prior to bringing in the field crew(s), going live, and switching to production.

Focus of Administrative Training:

A MarshallGIS trainer will provide an overview of the GeoKNX® solution and all of the components. This will be followed by Administrative Training for GeoKNX Server, Spatial Administrator, and Mobile clients. Finally, specific workflows and configurations related to the City will be reviewed and optimized in hands-on sessions. This will be a Train-the-Trainer session.

Who Should Attend:

The Administrative Training will include the back-office users responsible for supporting the mobile operations, supervisors of the field staff and other managers. This should also include related IT, GIS, Hansen, and other business experts at the City. This will not include end users or field staff.

2.1.8 *Stakeholder Meetings (Optional)*

Purpose:	Provide Stakeholders and Management with an overview of the GeoKNX Mobile software solution, what functions it performs, outputs and ROI (return on investment) from the system that management must budget for each year
Milestones:	Webinar
Deliverables:	Webinar
Assumptions:	This will be performed as a two hour webinar but could be performed on-site

MarshallGIS will provide a two hour webinar reviewing the planned use of technology for various City stakeholders which will improve adoption of the technology and improve stakeholders' ability to provide feedback.

2.2 Training Environment (Optional)

Purpose:	To set up a training environment for end user training. Typically, this is a training facility and training machines
Milestones:	n/a
Deliverables:	Training Plan and Training Environment Set up with the GeoKNX Software and training data
Assumptions:	A training facility is available and the City will provide access for MarshallGIS technical staff. The City will work with MarshallGIS on defining the Training Plan

2.2.1 *Develop Training Plan*

MarshallGIS will work with the City to develop a training plan for the field users. As part of this meeting, there will be a review of the configurations and workflows.

2.2.2 *Install GeoKNX® Software in Training Environment*

The Training Environment is typically a training facility with many machines. In this case there may be machines in the training room and some mobile devices to go out in the field.

MarshallGIS will install the GeoKNX Mobile client and GeoKNX Spatial Administrator software on the training machines mentioned in Task 2.1.2 above. The training can utilize the same test GeoKNX Staging Database (this stage will not need a separate staging database) and the same test GeoKNX Server (no need to install a new server for training).

2.2.3 *Test Training Environment*

MarshallGIS and the City will test the training environment and run through workflows prior to providing the field training.

2.2.4 *Field Training (Required)*

If the City chooses not to have the optional Training Environment in full, then the required Field Training will be performed as the last part of Step 2.1, after the Administrative Training.

Benefit/Objective of Field Training:

Provides the field users responsible for field operations with training on the GeoKNX Mobile client software and optimizing workflows related to field operations. Upon successful field training, the City will be ready to Go-Live and switch operations to the production system.

Focus of Field Training:

The MarshallGIS trainer will provide an overview of the GeoKNX solution and all of the components. This will be followed by field training on the GeoKNX Mobile client software with specific workflows (e.g., work management, customer service, and asset management) related to the City in hands-on sessions utilizing workflows defined previously.

Who Should Attend:

The field training will include the field crews responsible for supporting the mobile operations. Typically, the supervisors and managers of these crews also attend the training.

2.3 Production Environment (Optional)

Purpose:	To install GeoKNX on the City's Production Environment.
Milestones:	n/a
Deliverables:	GeoKNX working on Production Environment, Documentation of GeoKNX Install
Assumptions:	The City is available to assist with upgrade tasks. MarshallGIS will have access to client environments. Production Environment mirrors the Test Environment

This Production Environment Task contains the same subtasks that were completed in Task 2.2 Test Environment above, and so are not rewritten in this section. There is less labor needed overall, and much less needed for configuration in this Production Task as the majority of configuration is completed in Task 2.2. When testing is completed on the production system, the City will be able Go-Live with GeoKNX.

MarshallGIS will provide remote support services to install, configure and test, and Go-Live on the Production Environment.

2.3.1 *Install GeoKNX® Software*

MarshallGIS will support the City staff with the installation of GeoKNX Mobile on the Production Environment.

MarshallGIS will install/migrate GeoKNX Mobile (GeoKNX Server, Staging Database, Client, Spatial Administrator, and Mobile) on the Production Environment.

2.3.2 *Create and Load Configurations*

MarshallGIS will transfer all of the configurations loaded and approved on the test system to the production system.

2.3.3 *Test GeoKNX® Functionality*

MarshallGIS will work with the City to test the components (Server, Spatial Administrator, and Mobile) to ensure that they are functioning properly.

2.3.4 *Go-Live Assistance (Optional)*

MarshallGIS will assist the City with remote support in switching to the GeoKNX production server and have technical staff available remotely to support back office and field staff on the first day of use on the new system. In addition the User Documentation for GeoKNX will be provided in digital format.

3. Investment Summary

MarshallGIS proposes the following budget to complete this work. The highlighted yellow task names below are required tasks as part of the implementation. These are that tasks related to the quote provided to Fayetteville for 8 days of implementation services. MarshallGIS recommends that the City include all the tasks below in an implementation if the budget allows. MarshallGIS will provide a new quote for services if the City would like some of the optional tasks identified below.

Task Name	Estimated Expenses	Total
1. Planning		**$5,913**
1.1 Conduct Kickoff Meeting (Required)		$383
1.2 Business Workflows (Optional)		
1.2.1 Review Business Workflows		$750
1.2.2 Finalize Workflows		$890
1.3 System Assessment (Required)		
1.3.1 Assessment Overview		$188
1.3.2 Review Software		
1.3.2.1 Esri Software		$375
1.3.2.2 Hansen Software		$375
1.3.3 Hardware		$375
1.3.4 Wireless Connectivity		$188
1.3.5 Review Data		$750
1.3.6 Staffing		$188
1.3.7 Finalize and Present Assessment		$633
1.4 Implementation Plan (Optional)		$820
2. Implementation Services	**$1,500**	**$16,990**
2.1 Test Environment (Required)		$195
2.1.1 Review Test Environment and Restore Data		$375
2.1.2 Install GeoKNX® Components		$1,125
2.1.3 Create and Load Configurations		$1,125
2.1.4 Test GeoKNX® Functionality		$375
2.1.5 Test City's Workflows		$375
2.1.6 Document Test Environment		$445
2.1.7 Administrative Training		$2,250
2.1.8 Management Webinar (Optional)		$1,835
2.2 Training Environment (Optional)		
2.2.1 Develop Training Plan		$1,570
2.2.2 Install GeoKNX Software in Training Environment		$375
2.2.3 Test Training Environment		$375
2.2.4 Field Training (Required)	$1,500	$3,750
2.3 Production Environment (Optional)		$195
2.3.1 Install GeoKNX® Software		$1,125
2.3.2 Create and Load Configurations		$375
2.3.3 Test GeoKNX® Functionality		$375
2.3.4 Go-Live Assistance (Optional)		$750
Required Tasks Total	**$1,500**	**$13,468**
Optional Tasks Total	**$0**	**$9,435**
OVERALL TOTAL	**$1,500**	**$22,903**