

Ballpark Estimate

Miscellaneous Requirements

Version 1.3

Prepared For:



April 21, 2016

Work to be performed by





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1 Overview

Denton Municipal Electric (“DME”) has provided an extensive list of various requirements to SSP Innovations (“SSP”) around enhancing and/or improving the functionality of and around its GIS. In response to the list, this document provides rough order of magnitude cost estimates, and line-item task detail where possible, as to the work likely required to resolve each requirement.

All depictions of levels of effort, durations and/or costs within this document shall be considered non-binding ballpark estimates for rough budgeting purposes only. SSP does not guarantee the success of any of the below solutions at the stated price.

In order to obtain a committed SOW with subtask-level detail, schedule and fixed costs, a scoping conversation would be required between the two entities for the corresponding requirement.

Prices included are using SSP rates and projected costs for projects signed in calendar year 2016. These rates are subject to change.

*A portion of the services described herein requires SSP’s access to DME’s Schneider Electric ArcFM Suite licensing. Per updated SSP internal technology policy, in order for SSP to utilize DME’s Schneider Electric licensing for development and/or testing purposes, SSP will require DME to accommodate one of two activities for SSP’s proper access:

1. If permitted within its software license agreements and preferable to DME, DME will provide SSP the required Schneider Electric software installers via FTP or Sharefile for SSP’s use on development machines. DME provides access to its network via VPN along with the IP address and machine name of its license server. SSP will reference the license server for the term of testing any code / processes only. The network access will support allowing SSP machines onto the DME network to reference the server.
2. Alternatively, DME will provide a desktop or server that SSP is provided login rights to, on DME’s network. SSP will deploy our software development tools to this machine and use it to develop and test all new functionality. SSP will remote desktop to this environment to perform this work. This machine can be either physical or virtual. If virtual is preferred, SSP can provide the machine to DME. SSP’s TFS source control can and will still be used for code control.



2 Ballpark Estimates by Requirement

2.1 Implementation of Graphic Work Design & Work Order Management System Integration

SSP is currently working with DME to document DME's workflow processes and potential system interfaces surrounding work order management and design. DME will utilize this project as an input into the decision-making process around a future purchase and installation of both a capital work order management system as well as a graphic work design tool.

Depending on the systems DME chooses for installation, SSP will handle the installation, configuration, and any customization of the applications to meet DME's requirements. A financial ballpark previously provided to DME has been included in this document as a placeholder for this work. A revised and detailed task order and project plan will be created and agreed upon with DME before any work commences.

Cost Estimate: \$600,000.00

2.1.1 Anticipated Task List

Not available at this time – scoping calls required.



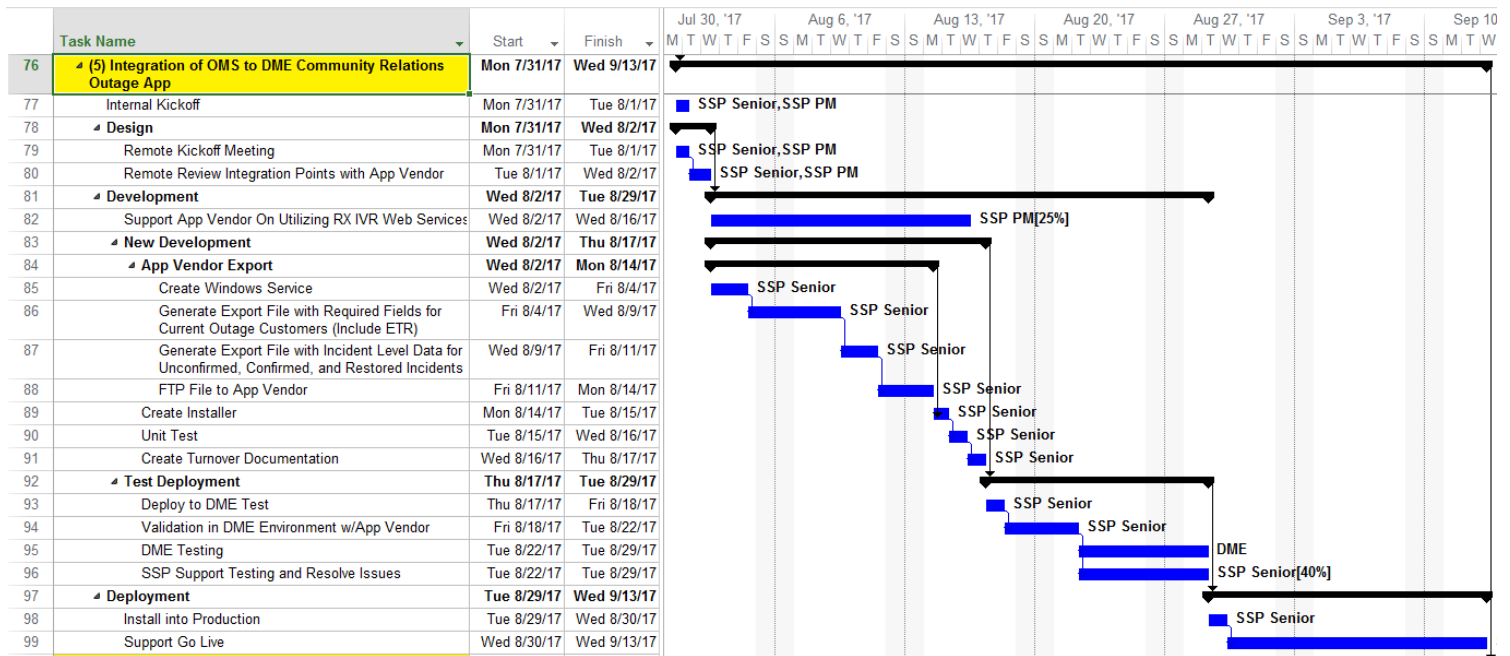
2.2 Integration of Responder OMS to DME Community Relations Outage Application

DME is currently evaluating customer-facing applications that will allow customers to check their status within an outage event. This will work by allowing the third-party application to check for a customer's participation in a confirmed incident within Responder. Another option would be to allow customers to report an outage via the third-party application.

While DME has not selected a vendor or application for this functionality as of yet, SSP has previously implemented similar Responder-based functionality at other utilities and has used those projects to provide a ballpark for this project.

Cost Estimate: \$55,000.00

2.2.1 Anticipated Task List





2.3 Improvement of Public Facing Outage Map

This implementation will utilize the ArcGIS Online components that were installed via the previously scoped project *Installation of ArcGIS Online Public Streetlight Reporting Application* (SSP SOW #16-2-11) to provide secure access to GIS data via the internet. This will allow for the Responder data to be viewed via the public facing DME website.

DME has already experimented with creating an outage map, but the current map shows the individual responder incident locations (exact location of outage), which is not a recommended pattern.

SSP recommends usage of our standard approach for public facing responder outage maps. This approach utilizes an aggregation of the Responder incident data to various polygons covering the service territory. This data is then made available to a web map template [provided by Esri specifically for public facing outages](#). This template will be installed and configured alongside the SSP NBS application for Responder aggregation.

Cost Estimate: \$16,000.00

2.3.1 Anticipated Task List

	Task Name	Start	Finish	ep 10, '17							Sep 17, '17							Sep 24, '17						
				T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T				
100	▲ (6) Improve Public Facing Outage Map	Wed 9/13/17	Wed 9/27/17																					
101	▲ Development	Wed 9/13/17	Mon 9/18/17																					
102	Remote - Kickoff	Wed 9/13/17	Wed 9/13/17																					
103	▲ NBS Application	Wed 9/13/17	Mon 9/18/17																					
104	Architect Solution	Wed 9/13/17	Wed 9/13/17																					
105	Create New Polygon Feature Class Based on Book	Thu 9/14/17	Thu 9/14/17																					
106	Code NBS App for Aggregation	Thu 9/14/17	Fri 9/15/17																					
107	Unit Test with Responder @ SSP	Fri 9/15/17	Mon 9/18/17																					
108	▲ Deployment	Mon 9/18/17	Wed 9/27/17																					
109	Install and Configure NBS Update Application	Mon 9/18/17	Mon 9/18/17																					
110	Create Two ArcGIS Online WebMaps (Public and Edit	Mon 9/18/17	Mon 9/18/17																					
111	Test & Validate Solution	Tue 9/19/17	Wed 9/20/17																					
112	Remote Support	Thu 9/21/17	Wed 9/27/17																					



2.4 Implementation of GIS Management Dashboard

DME would like to build a GIS dashboard that includes both statistical information extracted from GIS (e.g., miles of line for distribution primary overhead and underground, etc.), as well as general mapping tools for managing day-to-day operations. SSP is currently working on a similar project at another utility and has used this project to ballpark this effort at DME.

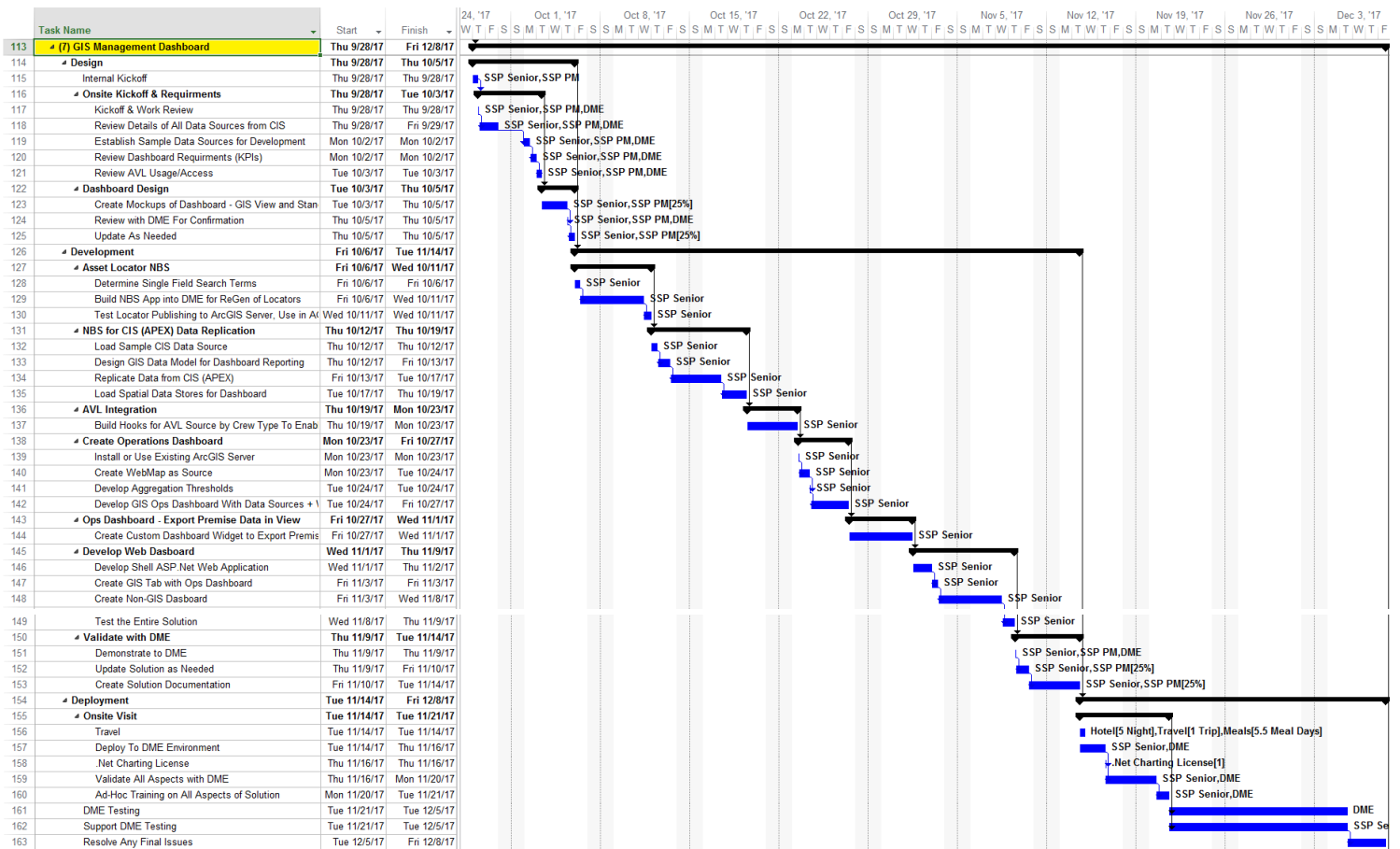
SSP would propose to create a standard ASP.Net website that is driven by two major functional tabs. The first (default) tab will contain the statistical key performance indicators (KPIs) that are extracted from the underlying data. Presentation of this data may include charts and graphs as needed. The second major tab will include an embedded web view of a configured [Esri Operations Dashboard](#) which will provide a mapping-based approach to locating specific assets, events, or work. Operations dashboard provides additional functionality for adding graphs and charts tied directly to the data on the map.

The combination of the statistical and map-based dashboard will provide DME with maximum flexibility for providing information to managers throughout the utility.

Cost Estimate: \$98,405.00



2.4.1 Anticipated Task List





2.5 Review of Disaster Recovery & Backup Solutions for GIS, OMS and Related Systems

DME would like to have their current DR and backup solutions reviewed by an expert in the field.

An SSP enterprise architect will travel to DME to work with them to review all current procedures for disaster recovery, optionally high availability, and backups. The architect will then draft a recommendations document covering all recommended changes including potential usage of additional database and/or other software applications to increase the redundancy of the system.

SSP will then lead the implementation of the changes and provide support surrounding the new software/procedures. SSP has provided a ballpark for this effort based on experience at other utilities.

Cost Estimate: \$33,235.00

2.5.1 Anticipated Task List

	Task Name	Start	Finish	Dec 10, '17							Dec 17, '17							Dec 24, '17													
				F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F						
164	▲ (8) Disaster Recovery & Backup Solutions for GIS, OMS, and Related Systems	Fri 12/8/17	Fri 12/29/17																												
165	Internal Kickoff	Fri 12/8/17	Fri 12/8/17	SSP DBA/Architect, SSP PM																											
166	Kickoff with DME	Fri 12/8/17	Mon 12/11/17	SSP DBA/Architect, SSP PM																											
167	▲ Design	Fri 12/8/17	Mon 12/18/17																												
168	▲ Onsite Consult	Fri 12/8/17	Wed 12/13/17																												
169	Travel	Fri 12/8/17	Fri 12/8/17	Meals[3.5 Meal Days], Travel[1 Trip], Hotel[3 Night]																											
170	Onsite Consultation	Fri 12/8/17	Wed 12/13/17	SSP DBA/Architect																											
171	Draft Recommendations Documentation	Wed 12/13/17	Fri 12/15/17	SSP DBA/Architect																											
172	Review with DME	Fri 12/15/17	Fri 12/15/17	SSP DBA/Architect																											
173	Update as Needed	Mon 12/18/17	Mon 12/18/17	SSP DBA/Architect																											
174	Design Accepted	Mon 12/18/17	Mon 12/18/17	12/18																											
175	▲ Implementation	Fri 12/8/17	Fri 12/29/17																												
176	TBD	Fri 12/8/17	Fri 12/15/17	SSP DBA/Architect																											
177	Support	Fri 12/15/17	Fri 12/29/17																												



2.6 Assistance with GIS Upgrade

Every other year, DME performs upgrades for the GIS and the related application extensions (ArcFM, OMS, etc.). DME is already underway with an upgrade to Esri 10.2.1, which will be the standardized version for usage within ArcGIS Desktop until the newer Esri Utility Network (UN) is ready for usage by the industry.

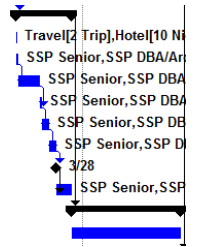
This may or may not be within the three-year suggested timeframe of this proposed agreement. Therefore, SSP has included a ballpark for supporting various upgrade activities during this time. This may be related to implementation of the new UN and/or may be used to update/upgrade other supporting application components within the context of DME GIS.

A key suggestion for this work would be an Oracle upgrade to version 12c, which is heavily tied to several DME custom Responder integrations for SCADA and IVR. Per DME recommendations, these Responder integrations should be upgraded and/or replaced for better Oracle compliance prior to upgrading Oracle. The time and budget allotted to this task will be evaluated closer to the time when an upgrade is requested/required by DME.

Cost Estimate: \$156,620.00



250	▲ Onsite Prod Upgrade + Support	Fri 3/23/18	Fri 3/30/18
251	Travel	Fri 3/23/18	Fri 3/23/18
252	Upgrade Databases	Fri 3/23/18	Fri 3/23/18
253	Install Core Software	Fri 3/23/18	Mon 3/26/18
254	Install Custom Software	Mon 3/26/18	Mon 3/26/18
255	Install Application Server(s)	Mon 3/26/18	Tue 3/27/18
256	Smoke Testing	Tue 3/27/18	Wed 3/28/18
257	Production GO LIVE	Wed 3/28/18	Wed 3/28/18
258	Onsite Production Support as needed	Wed 3/28/18	Fri 3/30/18
259	▲ Offsite Support	Fri 3/30/18	Fri 4/13/18
260	Offsite Production Support as needed	Fri 3/30/18	Fri 4/13/18





2.7 Implementation of GIS-Based Asset Management Software

DME uses a Microsoft Access Database application to manage their assets today. The asset data is stored directly in their GIS database and there is custom functionality in place to allow the asset data to be linked to GIS asset records. The current solution is not a centrally managed application, utilizes VBA - which has been scheduled by Microsoft for deprecation - and lacks enterprise level security.

SSP is proposing to work with DME to develop a custom implementation of SSP's asset management project-ware which will move the asset management functionality into an enterprise-level intranet website using the latest recommended development platforms. This new implementation will give DME thorough confidence in the enterprise security by integrating it with Microsoft Active Directory for authentication along with a flexible role-based authorization model.

SSP's project-ware also includes best practices for integrating this data into the GIS within an ArcFM data model. SSP will review and make use of the asset management and GIS integration developed at DME today where possible to ensure the new solution meets the business needs of the organization. A ballpark for this work has been included based on a prior asset management statement of work provided to DME.

Cost Estimate: \$263,490.00



2.8 Implementation of Reporting Solution for Legacy OMS Data

DME relies on legacy OMS data from a previous installation of Milsoft (prior to Responder). Currently the only method of viewing the data is via usage of Milsoft's reporting tool. DME no longer wants to rely on the Milsoft reporting tool for access to this data and has requested that new independent reports be created to replicate the data that they need for ongoing operational management.

SSP's DBA will work with DME to review the Oracle storage for the underlying data. This data will then be replicated at SSP's offices where the DBA will work to design and build reports conveying the information that DME requires. These reports may utilize an out-of-the-box software package like SQL Server Reporting or Microsoft Access (TBD) to render the report format.

The resulting reports will be reviewed with DME and subsequently updated as needed. The final solution will then be deployed to DME, at which time the Milsoft application can be retired. SSP has included a ballpark for this work based on the requirements available at this time.

Cost Estimate: \$18,900.00

2.8.1 Anticipated Task List

Task Name		Start	Finish	Nov 11, '18 Nov 18, '18 M T W T F S S M T W T F											
313	▲ (11) Reporting Solution for Old OMS Data	Mon 11/12/18	Fri 11/23/18	SSP DBA/Architect, SSP PM											
314	Internal Kickoff	Mon 11/12/18	Mon 11/12/18												
315	▲ Implementation	Mon 11/12/18	Fri 11/23/18	SSP DBA/Architect											
316	Work with DME to Review DB Backups	Mon 11/12/18	Tue 11/13/18												
317	Design & Build Reports	Tue 11/13/18	Tue 11/20/18	SSP DBA/Architect											
318	Review with DME	Tue 11/20/18	Tue 11/20/18	SSP DBA/Architect											
319	Update as Needed	Tue 11/20/18	Wed 11/21/18	SSP DBA/Architect											
320	Implement at DME	Wed 11/21/18	Fri 11/23/18	SSP DBA/Architect											
321	▲ (12) New DME Web Based GIS Solution	Fri 11/23/18	Mon 12/17/18												



2.9 Implementation of New DME Web-Based GIS Solution

This implementation will utilize the ArcGIS Online components that were installed via the previously scoped project *Installation of ArcGIS Online Public Streetlight Reporting Application* (SSP SOW #16-2-11).

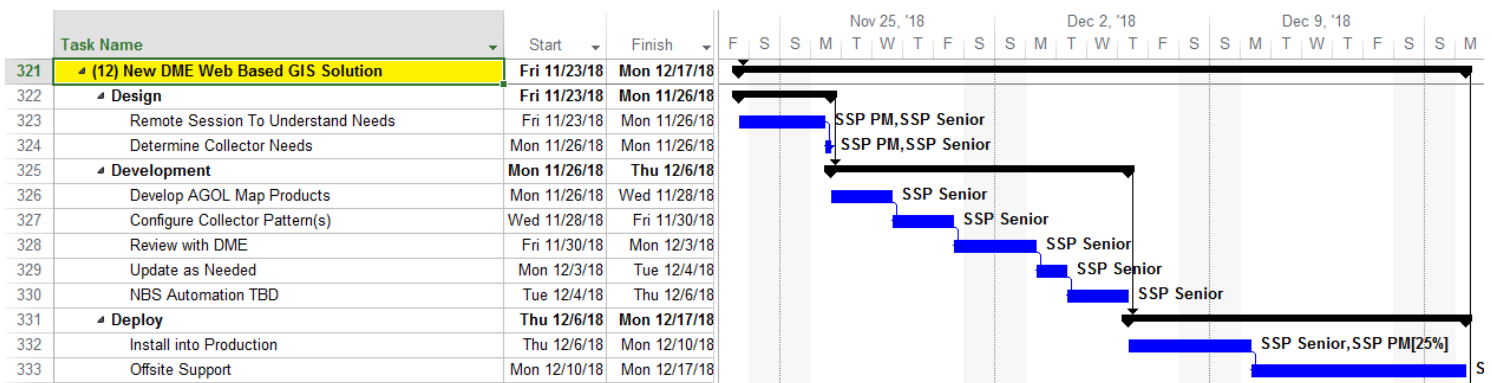
DME desires to move off of the legacy ArcFM Silverlight Viewer that is in use today to a newer HTML5 / JavaScript API viewer. Based on conversations with DME, SSP is recommending moving to an ArcGIS Online-based map viewer. This will provide DME with an industry-standard viewer without any customization required. The one key item that is not readily available in ArcGIS Online is ArcFM tracing, however DME has indicated that this functionality is not heavily used, and is therefore not imperative.

As part of this effort, SSP will also work with DME to replace their current ArcGIS Engine Inspector usage with an ArcGIS Online Collector installation. This will include configuring collection templates for field users to capture inspections including attribute data, GPS location, and optionally pictures. This data will then be available in the back office.

SSP has also included some (TBD) NBS automation to utilize the inspection data to drive notifications or other related reporting. SSP has included a ballpark for this work.

Cost Estimate: \$24,900.00

2.9.1 Anticipated Task List





2.10 GIS Health Check-up

DME has requested a health check-up for all GIS systems that DME uses. This will cover an entire review of all core GIS, GIS customizations, and integrations in place.

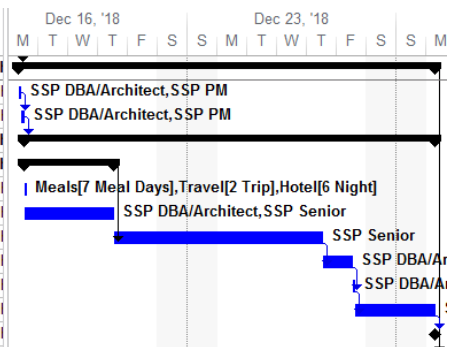
SSP will send both an enterprise architect and a senior consultant onsite to work with DME to review usage of the various systems. The architect will focus on usage of the database and hardware sizing, while the senior consultant will review the software, customization, and integration usage. The senior consultant will include a review all custom code to ensure it is operating correctly and efficiently.

The senior consultant and the architect will work together to create a recommendations guide covering all aspects of the GIS implementation. This document will be presented to DME, updated and finalized. It should be noted that this effort does not include the *implementation* of any recommendations. SSP has included a ballpark for this effort which may be revised closer to the project.

Cost Estimate: \$30,870.00

2.10.1 Anticipated Task List

Task Name	Start	Finish	Id	Cost	Duration	Work	Dec 16, '18	Dec 23, '18
334 (13) Health Check	Mon 12/17/18	Mon 12/31/18	321	\$30,870.00	9.88 days	137 I		
335 Internal Kickoff	Mon 12/17/18	Mon 12/17/18		\$400.00	1 hr	2 I		
336 Kickoff with DME	Mon 12/17/18	Mon 12/17/18	335	\$800.00	0.25 days	4 I		
337 Design	Mon 12/17/18	Mon 12/31/18	336	\$29,670.00	9.5 days	131 I		
338 Onsite Consult	Mon 12/17/18	Thu 12/20/18		\$13,070.00	3 days	48 I		
339 Travel	Mon 12/17/18	Mon 12/17/18		\$3,470.00	0.25 days	0 I		
340 Onsite Consultation	Mon 12/17/18	Thu 12/20/18		\$9,600.00	3 days	48 I		
341 Review All Code	Thu 12/20/18	Thu 12/27/18	338	\$8,000.00	5 days	40 I		
342 Draft Recommendations Documentation	Thu 12/27/18	Fri 12/28/18	341	\$3,200.00	1 day	16 I		
343 Review with DME	Fri 12/28/18	Fri 12/28/18	342	\$800.00	0.25 days	4 I		
344 Update as Needed	Fri 12/28/18	Mon 12/31/18	343	\$800.00	0.25 days	4 I		
345 Design Accepted	Mon 12/31/18	Mon 12/31/18	344	\$0.00	0 days	0 I		





2.11 Development of Custom DME GIS Training Materials

DME desires customized training materials for onboarding new GIS personnel and/or regression training of existing personnel.

SSP will work with DME to create custom course presentation content and exercises for ArcFM, Responder, whatever graphic work design tool is chosen, and any related applications. SSP will deliver the custom materials and then travel onsite to teach the course(s) during two separate visits.

The training materials will be owned by DME and can be used for subsequent internal training sessions as needed. Either DME staff or SSP staff can be used for future training as desired (not included in this estimate).

SSP has included a ballpark for this effort which may be revised based on changes in the systems at the time the training materials are developed. DME will be responsible for providing access to the DME environment for development of the materials.

Cost Estimate: \$75,610.00

2.11.1 Anticipated Task List

Task Name		Start	Finish	12/30	1/6	1/13	1/20	1/27	2/3	2/10	2/17
346	▲ (14) DME Custom GIS Training Materials	Mon 12/31/18	Mon 2/18/19								
347	Internal Kickoff	Mon 12/31/18	Mon 12/31/18								
348	Kickoff with DME	Mon 12/31/18	Mon 12/31/18								
349	▲ Work	Mon 12/31/18	Mon 2/18/19								
350	Develop Course Materials	Mon 12/31/18	Mon 2/4/19								
351	Travel	Mon 2/4/19	Mon 2/4/19								
352	Onsite Training	Mon 2/4/19	Mon 2/11/19								
353	Travel	Mon 2/11/19	Mon 2/11/19								
354	Onsite Training	Mon 2/11/19	Mon 2/18/19								



2.12 GIS-Related Projects for Distribution Automation and Unmanned Aerial Vehicle Systems

DME has requested assistance with future GIS-related projects including the integration and development needed for implementation of Distribution Automation systems and an Unmanned Aerial Vehicle system.

The requirements for these systems are unknown at this time so a simple placeholder for 130 days of work has been included in this document, to provide a general ballpark.

This item will need to be estimated once requirements are known.

Cost Estimate: \$260,000.00

2.12.1 Anticipated Task List

Not available at this time – scoping calls required.



2.13 GIS Support and Additional Projects

DME desires a contractual mechanism to request ad hoc services for small jobs and/or issue/bug resolution from a qualified GIS consultant over the course of this PSA.

This will be a time & materials (T&M) rate for custom support on all GIS, OMS, and related custom components owned by DME. This includes all existing asset management auto-updaters, inspector auto-updaters and Responder custom pieces & integrations. This also includes any other GIS related projects or integrations that are identified including further customizations for any GIS products or integrations to other systems at DME. This could also include development of any applications needed for the DME GIS group.

In order to project a not-to-exceed cost for this task order, SSP has provided an estimate of 12% of a full time consultant to help with these miscellaneous activities over the course of a three-year time period. This work will be invoiced every thirty days ONLY for the work completed in the previous thirty days. SSP tracks T&M work down to the quarter-hour and provides timesheet log-level detail for all time worked under a T&M agreement. Any approved expenses would be reimbursed by DME.

The not-to-exceed cost and level of effort for this estimate can be increased or decreased by DME prior contracting for the work, based on DME's needs. SSP will work at the direction of DME until the allotted funds are exhausted, at which time a change order will be required to allocate additional funds.

Cost Estimate: Not-to-Exceed \$241,360.00

Hourly Rate: \$200.00

****In the event SSP must travel to DME to provide support services, all pre-approved travel expenses will be reimbursed by DME at cost.***

2.13.1 Anticipated Task List

As-needed support and services for duration of PSA.