AGENDA ITEM FORM

SUBJECT: Enterprise Asset Management (EAM) Program Phase 3 Funding Request

SUMMARY:

Contract negotiations have been successfully completed with Woolpert for Phase 3 of the Enterprise Asset Management Project. The Phase 3 Statement of Work, as well as the updated Fee Schedule have been reviewed and approved by both the IT and Water Distribution departments. A master services agreement is still in place, as approved on June 9, 2011 by the Des Moines Water Works Board of Trustees.

A task order authorization for Phase 3 of the EAM project has been prepared. Scope and fee for the Water Distribution phase have also been negotiated. We are requesting approval from the Board of Water Works Trustees to execute task order 3 for the amount of $376,592.00.

Total cost for the contracted services portion of the project implementation is projected at $2.3M (down from the $2.4M proposed in early 2011) including expenses but excluding contingency. Woolpert's initial proposal estimate was $3.48M. The contingency funding has been reduced from 15% to 10%.

The following table shows the total consulting costs for the project broken down by activity with costs. Any contingency amounts will only be used if necessary and with the approval of the EAM Steering Committee, which is comprised of the CEO, Directors, and the EAM Project Manager. Ten percent (10%) of each contracted fee will be retained by DMWW until the successful execution of each respective contract.

FISCAL IMPACT:

A fixed ceiling fee contract has been negotiated with a maximum fee of $376,592.00, which includes a 10% contingency which will only be used upon explicit change request approvals submitted by the consultant team and approved by the EAM Steering Committee. Ten percent (10%) of each contracted fee will be retained by DMWW until the successful execution of each respective contract.

RECOMMENDED ACTION:

Authorize the CEO and General Manager to execute the Master Professional Service Agreement between Woolpert and DMWW and approve Phase 3 services for the amount of $376,592.00.

BOARD REQUIRED ACTION:

Motion to authorize the CEO and General Manager to execute the Master Professional Service Agreement between Woolpert and DMWW and approve Phase 3 services for the amount of $376,592.00

_____ / _____ Stefanie L. Running, PMP (date) Project Manager	_____ / _____ Jason Bumgardner, Director (date) of Information Technology	_____ / _____ William G. Stowe (date) CEO and General Manager

Attachment: Phase 3 SOW

Phase 3 Scope of Services

Project Understanding

Des Moines Water Works (DMWW) has partnered with the Woolpert Team to provide consulting services for the implementation of an Enterprise Asset Management (EAM) Program. The Woolpert Team consists of Woolpert and two (2) firms, Stratum Consulting Partners and Blue Dot Solutions. DMWW will utilize a phased implementation approach to bring each department and associated business requirements, data and system integrations into EAM Program over time.

The DMWW EAM Program is envisioned to be completed in five (5) phases running over a five (5) year period. In general, each of the 5 Phases include the following:

- Phase 1: Core System Design
- Phase 2: Water Production, Materials Management and Purchasing
- Phase 3: Water Distribution
- Phase 4: Field Customer Services
- Phase 5: Fleet, Buildings/Facilities, Parks/Grounds

Statement of Work

This Statement of Work (SOW) clearly indicates how the project will be managed, determines the requirements and specifications of the project, and defines procedures to complete the project as outlined by the DMWW requirements for the EAM Program as contained in the RFP ID# IT02011101, and through subsequent meetings with DMWW staff, as well as the completion of the Phase 1 and Phase 2 work. This Statement of Work includes work tasks for Phase 3 work only, and is described for all five (5) project tasks as listed below:

- Task 1: Program Management
- Task 6: System Configuration
- Task 7: Integration
- Task 9: System Testing
- Task 10: Training

Note: Tasks 2 – 5 and 8 are not applicable to this SOW.

Task 1: Program Management

Task 1.1: Project Management Plan Development/Project Phase Kickoff Meeting

The Project Management Plan documents, initially prepared during the start of the project in Phase 1, will be reviewed at the start of each project implementation Phase and revised if required. These are living documents that may be adjusted during the course of the project in order to address any issues related to the orderly and successful completion of the project per the EAM Program Schedule. The primary responsibility of the creation and management of

these documents is with the Program Managers.

A Project Phase Kickoff Meeting will be held at the start of the Phase 3 effort, and include the following work items: Review of the Program Management Documents, including the key items of Program Plan, Communications Plan, Project Schedule, Phase 3 SOW. At this time, an EAM Working Team will be established with DMWW and Woolpert Team staff assigned to tasks as required.

Task 1.2: Monthly/Weekly Status Reports

A Monthly Status Report will be supplied by the Woolpert Program Manager along with the monthly invoice, which will contain work progress of all task phases, work and deliverables completed during the last month, major outstanding issues or work items currently active in the project and their assignment/status, and project budget/percent complete by project task.

Weekly Status meetings will be held each Friday during the EAM Program via WebEx conference with the Project Manager to review current and following week work efforts and to insure good coordination of the project and all the working teams.

Task 1.3: On-going Project & Resource Management

Both Program Managers will actively monitor work activities across all project tasks to insure that the right resources are in place with known timelines for the completion of the work specified.

The Agile Development process employed for this project will also greatly assist in keeping the project focused with specified deliverables and working sections of the EAM Program that can be reviewed and comments forwarded to the Woolpert Team on a regular basis leading to iterative and highly collaborative process. The Agile Development process also lends itself to timely review of key deliverables by DMWW which is critical in order to keep the development process on track and completing the System Configuration that meets DMWW requirements.

Primary monitoring activity in this task will be the weekly review meeting between the Project Managers reviewing the current list of outstanding tasks and their schedule for completion. Also any major technical or operational issues that need to be addressed can be discussed at this time and resolved in a timely manner. Determination of near term resource allocation will also be addressed during these weekly meetings which are necessary to complete the work as scheduled.

Deliverables

- Provide joint project management services during the life of the EAM program. This will include attending weekly joint project management meetings and completing assigned documents as outlined below.
- Project Phase Kick off Meeting – which shall include a one (1) day on-site meeting with the Program Managers and key members of the Project Management team.
- Weekly coordination calls with the PM's, Monthly Status Report and review.
    - o The weekly status report will include the following items for each major task in Phase 3:

- ▪ Work completed last week and comments
- ▪ Work to be complete this week
- ▪ Deliverables/milestones status
- ▪ Notes
- ▪ List of on-site Meetings Scheduled for the Phase
- ▪ List of Phase deliverables with current status and percent complete

- o The Monthly status report will include the same items as the weekly status report as well as current budget and project schedule status.

- The Issues log on the DMWW SharePoint site will contain all outstanding issues to be resolved during the course of the project. Most issues will involve items that will be resolved throughout the project. Some of these issues could include new EAM Program requirements that come forward during the course of the project. New program requirements will be evaluated by DMWW and a determination made if they are critical to the success of the EAM Program and developed right away in the current Phase via a Change Order process, or completed in a future project Phase.

DMWW Responsibilities

- Provide a Project Server for the project, to be used for project collaboration
- Two (2) on-site desks for use by Woolpert Team members
- DMWW Project Manager shall provide the following management tasks:
  - o Provide Review and adjustments to the following Project Management Documents:
    - ▪ Project Charter
    - ▪ Project Management Procedures
    - ▪ Staffing
    - ▪ Change Management Plan
    - ▪ Communication plan
    - ▪ Risk Management Plan
    - ▪ Schedules and WBS
  - o Coordinate meeting schedules with DMWW staff with the Woolpert Project Team.
  - o Coordinate Phase deliverables review and acceptance process within ten (10) business days of submission
  - o Assist the Woolpert Team in coordinating project overview with the DMWW Steering Committee

Key Assumptions

- Existing Project Management documents created in Phase 1 will be utilized in this program Phase with minor adjustments only.

Task 6: System Configuration

Work within this project task includes the following:

1. Definition of requirements, development, documentation and configuration of Water Distribution asset groups, work management processes and reporting requirements within the Infor EAM system. All decisions related to the Water Distribution assets and work management processes must either be congruent with the EAM Program DMWW

Team Model (developed in Phase 1) and decisions made during the Water Production implementation (implemented in Phase 2), or have been approved as a temporary exception to be addressed at a later point in time, or result in a change to the appropriate Phase 1 and / or Phase 2 documented processes. Final determinations of System Configuration requirements which conflict with the DMWW Team Model will be made by the Steering Committee.

2. Definition of the requirements, documentation and configuration of a mobile Work / Inspection Management and Inventory Management solution for the Water Distribution, Water Production and Central Stores department using Blue Dot Solution's Infor EAM Advanced Mobile solution.

The Configuration stages completed in this Task include a number of iteration releases at different points of the development process as outlined below. A number of iterations completed over a number of weeks will then be included in an Implementation Release which can be utilized by DMWW for system testing proposed as outlined in Task 9 below.

Task 6.1 Water Distribution Work Management Configuration

During this phase, Infor EAM work management functionality will be implemented for the Water Distribution asset groups. The related Task 6.2 (Mobile Configuration) as well as work outlined within Task 7 (Integration)will operate in parallel with this task.

Work steps to deliver this task include the following:

1. Initial discovery work sessions with the Water Distribution Work Team. During these work sessions, the collective team will identify the distribution assets which will be maintained within EAM, the types of work performed on each, and any specific work scenarios that will require EAM configuration changes to the existing processes configured in Phase 2 (Water Production).
2. Creation of the initial SRS Document to include all finding from the initial discovery work session.
3. Initial configuration of Infor EAM to support the work processes defined in the initial discovery work sessions.
4. Initial Infor EAM presentation / demonstration to the Water Distribution Team of Infor EAM configured to support the work processes defined in the initial discovery work sessions. During this presentation / demonstration, the collective team will identify any modifications required of these processes.
   a. Configuration changes required for Water Distribution that affect Water Production processes / configuration will be brought to the attention of the Water Production Work Team. Any change that cannot agreed-upon or solved via alternate configurations will be brought to the Steering Committee once all known configuration disagreements are known.
5. Final discovery work sessions with the Water Distribution Team. During these work sessions, the collective team will identify any remaining distribution assets which will be maintained within EAM, the types of work performed on each, and any specific work scenarios that will require EAM configuration changes to the existing processes configured in Phase 2 (Water Production).
6. Update of the SRS document to include all findings from all discovery sessions.
7. Update configuration of Infor EAM to support all defined work processes.
8. Infor EAM presentation / demonstration to the Water Distribution Team of Infor EAM to

support all defined work processes. During this presentation / demonstration, the focus will be on the processes defined in the final discovery work sessions and those processes from the ignition discovery work session that were modified in the previous demonstration / presentation.

    a. Configuration changes required for Water Distribution that affect Water Production processes / configuration will be brought to the attention of the Water Production Work Team. Any change that cannot agreed-upon or solved via alternate configurations will be brought to the Steering Committee once all known configuration disagreements are known.

9. Summary of configuration changes required for the Water Distribution processes that are not acceptable to the Water Production Work Team. DMWW will need to bring these issues to their Steering Committee for resolution.

10. Final delivery of the SRS.

11. Develop Custom Reports for Water Distribution. The identification and definition of these reports can either occur during the configuration tasks or at any point up to Go-Live for the Water Distribution department. Hours will be set aside for development of these reports and can be delivered either during this task or later in the project. History with the Water Production implementation (Phase 2) indicates that reports are best created nearer to Go-Live, however 20 hours will be set aside for report development.

Key deliverables during for this Task will include:

- **Task 6.1.1 Initial Discovery Work Sessions** – One (1) week onsite to discover the distribution assets that will be maintained in Infor EAM and the work performed on each. Sessions should be attended by the Water Distribution Work Team as well as a member of the Water Production Work Team.

- **Task 6.1.2 Creation of Initial SRS** – Woolpert will work offsite to create the initial DRAFT version of the SRS. The SRS document will follow the format template created during Phase 2 and have the following main sections:

  - EAM configuration requirements – specifically those that will require changes to the configuration that will affect Water Production
  - Service Calls
  - Equipment
  - Work Orders (both reactive and PM)
  - Reports

- **Task 6.1.3 Initial EAM Configuration**– Woolpert will perform the initial configuration of Infor EAM for the Water Distribution assets and work processes remotely via vpn or remote desktop connection to the DMWW Infor EAM system.

- **Task 6.1.4 Initial Infor EAM Presentation / Demonstration** – Two (2) days onsite to present / demonstrate how the configured solution will be used to process the Water Distribution work flows defined in previous tasks and to revise them, as necessary. Sessions should be attended by the Water Distribution Work Team as well as a member of the Water Production Work Team.

- **Task 6.1.5 Final Discovery Work Sessions** – Three (3) days onsite to discover the

remaining distribution assets that will be maintained in Infor EAM and the work performed on each. Sessions should be attended by the Water Distribution Work Team as well as a member of the Water Production Work Team.

- **Task 6.1.6 Update of the SRS** – Woolpert will work remotely to update the SRS with all findings from the previous workshops and demonstrations.

- **Task 6.1.7 Update Infor EAM Configuration** – Woolpert will work remotely to update the Infor EAM configuration to support all defined business processes.

- **Task 6.1.8 Final Infor EAM Presentation / Demonstration** – three (3) days onsite to demonstrate the final Water Distribution configuration and work processes in Infor EAM.

- **Task 6.1.9 Summary of Unfinalized Configuration Changes** – Woolpert will work offsite to create a memorandum detailing all of the configuration changes requested by Water Distribution that have not been agreed-to by the Water Production team. Document will define why the changes are requested, the impact of the changes to both departments and a recommendation as to how DMWW should proceed.

- **Task 6.1.10 FINAL SRS** – Woolpert will work offsite to finalize and deliver the SRS.

- **Task 6.1.11 Reporting Services** - for Water Distribution for EAM system information within a maximum timeframe of 20 hours of work.

Task 6.2 Mobile Configuration

During this phase, Infor EAM mobile functionality will be implemented for Water Distribution, Water Production and Central Stores. The mobile implementation assumes the following software will be utilized for building the final DMWW mobile solution:

- Advanced Mobile for Work Management for Water Production and Distribution
- Advanced Mobile for Inspection Management for Water Production and Distribution
- Advanced Mobile for Inventory Management for Central Stores
- Command Center for System AdministratorsAdvanced Mobile for Maps

The Blue Dot Solution Advanced Mobile for Infor EAM products are fully functioning mobile Infor EAM modules. No custom software development or modifications to the mobile software products listed above. This implementation assumes that existing out-of –the box functionality of these software products meet the needs of DMWW.

DMWW will provide all hardware for the mobile devices.

Work steps to deliver this task include the following:

1. Conduct Mobile Needs Assessment for all departments and prepare Technical Memorandum with Mobile Recommendations to assist DMWW in the mobile hardware selection process. This memo will provide key hardware requirements for using the selected software and other best practices as established with other clients by the Woolpert Team. This memo will include information for Water Distribution, Water Production and Central Stores for mobile technology.

2. Baseline Deployment of product for business requirements workshops. Woolpert will install the entire suite of mobile products on up to 12 workstations that will be used during the business requirements workshops for each department. The workstations can either be the mobile devices that will be used in the field, the training workstations, or a combination of the two.
3. Gather business process requirements for the implementing departments. The existing work processes for the implementing departments will be analyzed and the mobile solutions configured to support execution of the processes that can be performed on devices using the mobile software. Separate workshops will be conducted for each department, however, it is recommended that modules used by multiple divisions, such as Work and Inspection Management, be configured similarly to reduce the IT maintenance and support complexity.
4. Prepare Mobile Configuration Document to include all mobile-supported business processes and how the mobile application will be configured to support the processes.
5. Mobile configuration to supported the defined business processes will be performed on the 12 workstations remotely.
6. Mobile presentation / demonstration to the three (3) departments. During this presentation / demonstration, the collective team will identify any modifications required of the mobile configuration.
7. Update Mobile Configuration Document.
8. Update Mobile Configuration.
9. Final Mobile presentation / demonstration
10. Mobile Application Installation for Production. During this task, Woolpert will install the appropriate Mobile applications on up to sixty (60) DMWW Devices.
11. Configure in Production environment for Go-Live. This task will take place during Go-Live preparations. This task will include moving all mobile environments and system / device connectivity from the testing environment to the production environment.
12. Go-Live Support for the mobile processes will be performed remotely. Hours to support Go-Live will be limited to 40 hours but can be used any time within 12 months post-Go-Live.

Key deliverables during for this Task will include:

- **Task 6.2.1 Mobile Needs Assessment** – Woolpert will conduct remote information gathering regarding DMWW mobile needs, assess their hardware requirements and recommend devices in a technical memo.

- **Task 6.2.2 Baseline Deployment** – Woolpert will work remotely to install the mobile suite of products on up to 12 workstations.

- **Task 6.2.3 Gather Department-Specific Requirements** – Woolpert will perform one (1) weeks of onsite business requirements gathering sessions with two (2) resources, the Mobile configurator to determine the mobile software functional and configuration requirements and the EAM configuration lead to ensure that the business processes defined by the implementation teams are accurately communicated to the Mobile configurator.

- **Task 6.2.4 Mobile Configuration Document** – Woolpert will work remotely to develop a configuration document describing the configuration requirements and settings for the

mobile devices for the Work, Inventory and Inspection Management mobile modules.

- **Task 6.2.5 Mobile Configuration** – Woolpert will work remotely to configure the mobile devices, software installed in 6.2.2, for the Work, Inventory and Inspection Management mobile modules.

- **Task 6.2.6 Initial Mobile Presentation / Demonstration** – Woolpert will perform three (3) days of onsite services to demonstrate the mobile solutions as configured for the DMWW teams. The EAM configuration lead will participate remotely, as necessary, in these sessions to ensure that the business processes configured by the Mobile configurator appropriately support the defined processes.

- **Task 6.2.7 Update Configuration Document** – Woolpert will work remotely to update the Configuration Document.

- **Task 6.2.8 Update Configuration** – Woolpert will work remotely to update the configuration on the devices installed in 6.2.2.

- **Task 6.2.9 Final Mobile Presentation / Demonstration** – Woolpert will perform two (2) days of remote services to demonstrate the mobile solutions as configured for the DMWW teams. The EAM configuration lead will participate remotely, as necessary, in these sessions to ensure that the business processes configured by the Mobile configurator appropriately support the defined processes

- **Task 6.2.9 Mobile Device Configuration** – Woolpert will work remotely to configure the up to sixty (60) mobile devices with the appropriate mobile software applications.

- **Task 6.2.10 Mobile Production Configuration** – Woolpert will configure the Production environment and production devices in preparation for Go-Live.

- **Task 6.2.11 Go-Live Support -** Woolpert will provide 40 hours of post-Go-Live support to DMWW for the mobile applications. The support hours will be provided as needed over the 12 months post-Go-Live. In the two (2) weeks immediately following Go-Live, Woolpert will ensure that the Mobile configurator will be made available to provide support.

Task 6.5 Distribution EAM Post Go-Live Support

This task includes on-site support for the week(s) immediately post go-live not to exceed 80 hours. The EAM configuration lead will provide this support. The EAM configuration lead will also be able to support the mobile user with user issues. Forty (40) hours have been called out for Mobile Application support in task 6.1.11, however these will not be onsite hours. These hours will be delivered

Deliverables

- Initial System Configuration per the findings of the DMWW Team Model, and System Architecture Design documentation completed in Task 3.0 during Phase 1 of the project, which will result in a baseline configuration as outlined in Task 6.1.2. and final implementation of EAM as specified in Task 6.1.3.

- Draft and Final System Requirements Specification (SRS) for the Water Distribution Asset Group as outlined in Task 6.1.1.
- Deployment of an EAM mobile solution for Water Distribution as outlined in Task 6.2.
- Deployment of an EAM mobile solution for Water Production as outlined in Task 6.3.
- Deployment of an EAM mobile solution for Central Stores as outlined in Task 6.4.
- Development of two (2) custom reports for Water Distribution per Task 6.5.
- Post Go-Live support of the Phase 3 EAM implementation not to exceed one hundred and twenty (120) hours; eighty (80) of these hours will be delivered onsite immediately post-Go-Live by either the EAM Lead Configurator or a DMWW Model expert, forty (40) will be provided by the Mobile Configurator within twelve (12) months after Go-Live. Mobile support hours will be provided remotely, as required

DMWW Responsibilities

- Testing web bug tracking service will be established and hosted by DMWW.
- Provide timely review of development iterations and attend iteration review meetings with the Woolpert Team which will occur roughly every three (3) weeks during the course of configuring each asset group Phase for the program until the work is completed.
- Refresh the Infor EAM development environment as necessary to support Woolpert development efforts.
- Coordinate with Woolpert prior to refreshing the development environment such that work in progress can be noted and recreated in the new environment, as necessary.
- DMWW will make final selection of mobile hardware and purchase the selected devices so that they can be configured and tested per the project schedule.
- DMWW will purchase or already have in hand all required mobile software required for this task.

Key Assumptions

- The Woolpert Team will develop the system on the DMWW development environment.
  - Periodic refreshes on the development environment may be requested. DMWW IT staff will perform refreshes.
  - Should DMWW decide the refresh the development environment, DMWW will coordinate with Woolpert prior to the refresh.
- Final selection of the mobile hardware to be utilized in this task will be completed by DMWW with guidance provided by the Mobile Needs Assessment completed in Task 6.2.1. No additional guidance or assistance will be provided by the Woolpert Team in this selection process.
- All testing review and bug tracking comments for the development Releases will be entered reviewed and resolved on the DMWW testing web bug tracking service.
- No Custom Grid development beyond the grids defined during the Water Production department implementation is included in this scope of services. *Custom Grids are new screens which can be developed within Infor EAM by system administrator(s) using the Grid Designer within EAM. These screens can supplement the out-of-box screens. DMWW Infor EAM support administrators will learn how to build grids during the System Administrator training, and will be able to take on the creation of new user grids (screens).
- No Custom Business Rules (Flex SQL) that alters or automates the out-of-the-box system functionality beyond what was developed during the Water Production Department

implementation is included in the scope of services. Custom Business Rules are triggers that can be used for many different reasons. Simple, typical uses are to ensure that certain fields are populated under certain conditions and to validate that certain field values are acceptable to use together. When rules are not met, the system returns an error to the user. These business rules will be acceptable. Advanced, atypical uses are to insert and / or update records in the database when certain other records are inserted and /or updated. These advanced business rules circumvent the standard system functionality. They add complexity to the system administration and risk to the business processes. These types of Business Rules will not be included with this scope of services.

- A maximum of 4 Inboxes and all Phase 1 pre-defined KPI's will be developed for each asset group (project phase).   Inboxes and KPIs are links that are on user's Start Center (Home Page) in EAM. Inboxes are links that help users to rapidly identify and call up system information requiring their action or review. (e.g. "My Open Work Orders"). KPIs are similar but are represented on screen as a "Gauge" with a Good/Fair/Poor rating. Users can click through KPIs to be taken to a screen with the detail that underlies the KPI. DMWW will join in the development of these to learn the process of creating and will be responsible for the development and implementation of any additional Inboxes and KPI's.
- Reports will be completed in the standard Infor EAM Advanced Reporting solution powered by Cognos. Work will be completed during the 20 hours allocated to complete this work.

Task 7: Integration

The system design diagram shown below was included in the Integration Strategy Document for the CRM System. Additional integration data flows between GIS system and EAM was outlined in the GIS Integration Requirements & Recommendations document. Integration work in Phase 3 shall include three (3) major tasks as outlined below:

> 7.1 CRM Integration (Part 1)
> 7.2 ESRI Integration with Water Distribution
> 7.3 Go-Live support

In addition, during the creation of the SRS the **DMWW Team Model** will also help guide the integration points required between the system integration points included in this task in order to meet the best practices included within the model.

Each of the four types of service will be reviewed in more detail for their key components on the overall design and associated work effort required to complete the integration.

Task 7.1 CRM Integration (Part 1)

System Basics
The CRM Integration included in this Phase consists of integrating only service requests entered into the CRM system that deal directly with Water Distribution activities in the field.

Basis for Integration
The DMWW CRM and Infor EAM will not communicate directly with one another. Instead, per the agreed-upon integration approach, each will communicate with the Microsoft BizTalk server. BizTalk will receive and forward the communications between the two systems. New service requests entered into the CRM will be sent to Infor EAM, if they meet the requirements for this phase. Status updates to the Request in Infor EAM will be sent to the

CRM. The development process for the CRM integration will include the following seven (7) tasks:

- **7.1.1 Develop High-Level Integration Flows and Descriptions Document** – Woolpert will provide two (2) days of onsite discovery to learn and document the integration points. Documentation will include a flow diagram of each trigger point and data to be passed between the two systems for each trigger.
- **7.1.2 Initial Integration Development** – Woolpert will develop the integrations between EAM and BizTalk. During this process, files passed between EAM and BizTalk may be created manually to mimic the records will ultimately be passed to and from the CRM.
- **7.1.3 Use Case Development** – Woolpert will develop Use Case documents to detail the technical components of the integration points. DMWW will provide Use Case content related to the integration components between the CRM and BizTalk.
- **7.1.4 Integration Release Testing** – Woolpert will provide eight (8) hours of remote testing session to show the data moving between the two systems. This testing must work end-to-end in order to show the full integration and not just the integration concept using manually created files. In order to perform this testing, the DMWW portion of the interface between CRM and BizTalk must be complete.
- **7.1.5e Integration Revisions and Documentation Updates** – Woolpert will make updates to integration components and documentation, as necessary.
- **7.1.6 Final Integration Acceptance Testing** – Woolpert will provide eight (8) hours of remote testing of integration points working end-to-end.
- **7.1.7 Final Documentation** – Woolpert will work remotely to make the final updates to the integration documentation.
- **7.1.8 Deployment to Production** – Woolpert will work remotely to deployment of the integration EAM and BizTalk integration components to the Production environment.

Anticipated Data Flow

Customer service request will include the following items:

- Name of the person requesting the service
- Date the request was submitted to DMWW
- Street Address of the location where the service needs to be completed
- Type of work to be completed (related to Water Distribution work requests only)
- Priority ranking of the work

Data flow as specified in the Integration Approach document for CRM is shown below:
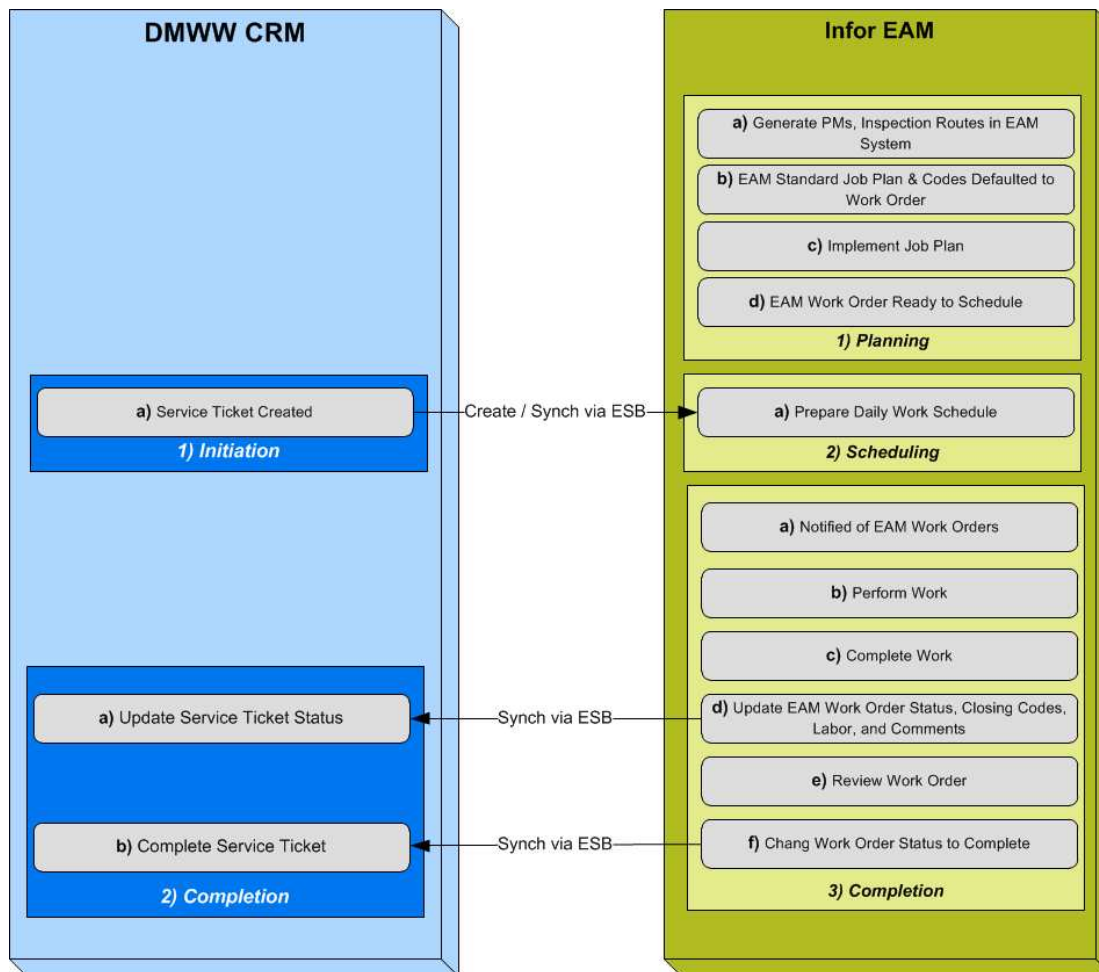
Anticipated Frequency

Real-time push of CRM activities as Work Orders in EAM. Real-time synchronization of EAM Work Order updates to CRM.

The mobile devices will communicate directly to the EAM system whenever a signal is detected. When no signal is detected, the mobile device will store the transactions to be sent to EAM until the devices finds a connection and connects.

Task 7.2 ESRI GIS Integration with Water Distribution

Details regarding this integration work effort are included in the Enterprise Asset Management (EAM) Implementation – GIS Requirements & Recommendations document prepared during Phase 1.

System Basics

Integration of ESRI GIS with Infor EAM for Water Distribution assets using the standard Infor EAM integration toolset. GIS – will link EAM assets to spatial information included in the GIS using Asset-ID. GIS information will display connectivity and associated attribution of spatial assets along with contextual spatial data in the form of parcels, streets and easements.

Basis for Integration

GIS integration effort will utilize Infor EAM GIS integration tools, with some customization for editing control and quality assurance. Woolpert will follow the integration configuration guidelines specified in the recommendations document listed above.

e The development process for the CRM integration will include the following seven (7) tasks:

- **7.2.1 Develop GIS Layer Integration Flows and Descriptions Document** – Woolpert will provide two (2) days of onsite discovery to learn the GIS integration points. Subsequent discovery and integration discussions will take place remotely. Included in this task are a detailed description of the Map Service required for EAM and field level mapping for for each GIS layer to be integrated to EAM
- **7.2.2 Initial Integration Development** – Woolpert will work remotely to configure the GIS-EAM integration components. Any changes that need to be made to the GIS data structures, GIS data and / or GIS Map Service will be the responsibility of the DMWW GIS department.
- **7.2.3 Integration Release Testing** – Woolpert will work remotely with the DMWW GIS and Water Distribution Teams to test the integration process for each integrated GIS layer.
- **7.2.4 Integration Revisions and Documentation Updates** – Woolpert will work remotely to update to the integrations and documentation.
- **7.2.5 Final Integration Acceptance Testing** – Woolpert will work remotely remote with the DMWW GIS and Water Distribution Teams to test the integration process that were changed as a result of the initial testing.
- **7.2.6 Final EAM System Integration Document** – Woolpert will work remotely to update to the Integration Flows and Descriptions document
- **7.2.7 Deployment to Production** – Woolpert will work remotely to configure of the GIS-EAM integration components for Go-Live.

Anticipated Frequency

Updates will occur when new assets are installed in the field, or are replaced during maintenance operations. The timing of these updates will be determined once the final data maintenance option is selected as outlined above.

Deliverables

- Conduct two (2) Integration Requirements Workshops with the following durations:
  - o CRM– two (2) day
  - o GIS – two (2) day

- Draft Use Cases and Final Use Cases of Tasks 7.1 through 7.2, as included within the SRS, will be approved by DMWW prior to the start of development activities for each project subtask.
- Successful development of integration components in Tasks 7.1 through 7.2 per the defined Final Use Cases.
- Successful configuration of and development of supporting Windows Workflow Foundation (WWF) and Windows Communication Foundation (WCF) components for enterprise service

bus based upon the use cases included in the SRS.
- Conduct unit testing of all integration components.
- Address defects of any integration components developed by Woolpert team personnel and entered on the bug tracking system.
- Draft and Finalize Integration Support document for CRM and GIS.
- Post Go-Live System Integration support which will include the following staff not exceed 40 hours
- Task QA/QC support

DMWW Responsibilities

- Schedule with staff and provide facilities for Integration Requirements Workshops.
- Review, comment and accept Integration Tasks Use Cases
- Development (or supervision of development of) integrations from DMWW enterprise applications to enterprise service bus necessary for the integration work specified in this Scope of Work.
- Make system-specific vendors (GIS and CRM contractors) or in-house personnel (GIS and CRM administrators) available to develop detailed specifications with Woolpert during development of the integrations
- Prepare test environments for each external system to participate in functional testing (and re-tests) for each integration
- Schedule with staff and participate in unit testing (and re-tests) of each integration to agree upon specifications in the associated use cases.
- Address defects of any integration components developed by DMWW staff or vendors.
- Contribute to development of Integration Support document for components developed by DMWW staff or vendors.
- Review, comment and accept Integration Support document.

Key Assumptions

- CRM Integration (Part 2) will include the completion of the CRM integration for the EAM Program for other service requests that are not related to Water Distribution in Phase 4.
- The integration service bus will be based on Microsoft technologies that, upon time of implementation, will fit within DMWW's overall IT policies and procedures. This will be completed using out of the box tools included within Microsoft BizTalk Server, which incorporates Windows Workflow Foundation (WWF) and Windows Communication Foundation (WCF), will serve as the architecture for the bus.
- All integrations will occur via use of web services, SOAP messages or database triggers and stored procedures.
- DMWW will be responsible with in-house developers for the development of the integrations to/from the external systems (CRM) to/from the BizTalk Enterprise Service Bus (ESB) should that design scenario present itself during the final integration design included in the SRS.
  Woolpert Team will manage the BizTalk (ESB) as required to support integration activities and be responsible for the development of the integration to/from EAM to/from the Enterprise Service Bus.
- Code management will be Subversion.

Task 9: System Testing

Testing for this project consists of a three (3) stage process as outlined below:

Stage 1: Iteration testing will occur during work activities that occur in Task 6.0 System Configuration as part of the Agile Development process. Unit testing will occur throughout the development process leading to a final system Release which is a completed realization of a portion of the system development as indicated in the SRS/Use Cases. When a system Release has been tested and deemed ready it will be placed on the DMWW test environment. At the conclusion of the System Configuration process an initial system integration test will occur to insure that the entire system works as specified in the SRS/Use Cases including all data sources and integration points. This is primarily a Woolpert internal test process since the system will be on the Woolpert development environment.

Integration testing at this stage will verify that the EAM system is operational and stable for DMWW system testing activities, and result in a system end state that of known quality and can assist in the further testing activities to occur in the DMWW environments for Stages 2 and 3 below.

Stage 2: System Release testing by DMWW technical staff can occur as required as new Releases are deployed on the test environment. Testing will include stability and bug testing with the results posted on the system testing web site to be addressed and modifications completed as required.

Stage 3: Final acceptance testing – will occur in the test environment for the remaining Phases of the EAM Program. Each new project Phase would have to complete acceptance testing on the test environment since production would be in use by Water Production. Final acceptance testing will utilize the test and acceptance document prepared by the Woolpert Team and used by DMWW for the final round of testing prior to go live.

The purpose for task 9 is to perform Stage 3 Testing.

Specific test plans will be developed to manage and monitor Stage 3 testing. It should be noted that in most cases the Stage 3 test plans and business standard operating procedures will be very similar to each other, except in areas where specific data and integration development necessitate additional test scenarios to insure compliance with department needs and lead to final acceptance by DMWW. Test Plans will be scenario based, where multiple work steps that typically are performed together to execute a single business process, are tested as a single test script. As the Agile development process will be central to all development activities, individual work steps will receive sufficient testing on their own throughout the process.

System load testing using automated testing software is not part of the System Testing process.

Task 9.1 Prepare & Finalize Water Distribution Test Scenarios

Woolpert will develop a Test Plan identifying the specific business scenarios to be tested. Where appropriate, logical process variations will be included into the plan so that the business process is tested in each possible work step. A simple example of process variation

is as follows: once created, a Work Order can be cancelled, or approved. Both variations will be tested.

The Test Plan document development process will be as follows:

- **9.1.1 Test Plan Development** – Woolpert will work remotely to develop a Test Plan
- **9.1.2 Test Plan Review** – Woolpert will work remotely to conduct a review session of the Test Plan with DMWW
- **9.1.3 Test Plan Revision** – Woolpert will revise the Test Plan per the feedback. If necessary,

Task 9.2 Conduct Technical Team Testing (Water Distribution)

Woolpert Team will lead the final acceptance testing process of the Water Production Work Management and all Mobile application functionality. All bugs and system failures shall be entered into the web testing site and action assigned to a specific staff person.

The Testing process will consist of the following tasks:

- **9.2.1 Lead System Testing** – Woolpert will work onsite for one (1) weeks to lead test activities of the EAM and Mobile applications.
- **9.2.2 Configuration and Documentation Updates** – Woolpert will work remotely to update system configuration and documentation to address the issues found during the testing session.
- **9.2.1 Final System Testing** – Woolpert will work onsite for one (1) week to lead test activities of the EAM and Mobile applications.

Deliverables

- Phase 3 EAM Program Test Plan
- Completion of an integration test of the completed system for each Program Phase on the Woolpert development site.
- Testing and system fix support for Release and final acceptance testing by DMWW technical staff of the Water Distribution with two (2) days of on-site support.
- The Woolpert Team will use the DMWW Subversion site for project code control. Testing web site will also be supplied to log test comments and resolutions – type of testing site TBD.

DMWW Responsibilities

- DMWW will manage the internal testing process with staff.
- DMWW will post all bugs and system enhancements on the Web test control site and have the staff associated with the posting attend the weekly test review meeting.
- Review, comment and accept Test Plan.
- Schedule with staff, provide facilities for and execute acceptance testing per the Test Plan.
- Via Acceptance Testing, review, comment and accept Final System Configuration upon completion of User Acceptance Testing.

Key Assumptions

- Final testing and acceptance of the production EAM system will take two (2) weeks to complete.
- Final End User Testing for Water Distribution will require the Integration Team that includes key DMWW end users of the EAM system to work through the Testing Plan that includes following the Test Scenarios that leads to final Phase acceptance.
- Test Plans will be based on typical work scenarios. Work scenarios include the typical work steps that are executed to achieve a typical work function. Work scenarios often include multiple users testing a single scenario.
- System Load testing using automated testing software is not included in this task.
- At least one (1) DMWW testing resource will represent each User Group to be tested. Each business workflow and logical alternate scenario, as documented in the test plan, will be tested by each tester to ensure that the User Groups can perform the functions expected of them or cannot perform the functions that they are not expected to perform. Controlled scenario tests will be conducted with pre-defined data to prove that the configuration works. Uncontrolled tests will allow users time after each controlled test to more fully test each scenario by selecting their own data and processing in an uncontrolled manner. This will yield a more robust testing session.

Task 10: Training

System Administration training for Phase 3 will involve only new integration functionality associated with CRM and the GIS.

Training for new (Water Distribution) users will include both Model and Application training.

Training for existing users (Water Production and Stores) will include only Mobile Application training.

Task 10.1 Prepare Training Plan and Materials

The Training Document development process will be as follows:

- 10.1.1 Draft Training Plan Development – Woolpert will work remotely to develop a Test Plan
- 10.1.2 Training Plan Review – Woolpert will work remotely to conduct a review session of the Training Plan with DMWW
- 10.1.3 Final Training Plan Revision – Woolpert will revise the Test Plan per the feedback.
- 10.1.4 Training Materials Development – Woolpert will work remotely to develop a Training Materials.
- 10.1.5 DMWW Training Materials Review – DMWW will review and provide feedback on the Training Materials
- 10.1.6 Training Materials Revision – Woolpert will revise the Training Materials per the feedback.

Task 10.2 Conduct Training

Woolpert Team will lead training classes for DMWW personnel. The following classes will be

delivered during training sessions.

1. System Admin CRM and GIS Integration Training
2. Stores Mobile Application Training
3. Water Production Work and Inspection Mobile Application Training
4. Water Distribution Equipment and Work Management EAM Application and Model Training
5. Water Distribution Technician EAM Application and Model Training
6. Water Distribution Work and Inspection Management Mobile Application Training

Deliverables

- Training Plan
- Training Materials, track specific.
- The System Administration Training Will be a single eight (8) hours class conducted by a single trainer to train the Admins on the new CRM and GIS Integrations.
- The Stores Mobile Application Training will be a single four (4) hour class conducted by a single trainer.
- The Water Production Work and Inspection Mobile Application Training will be two (2) four (4) hours classes conducted by a single trainer.
- The Water Distribution Equipment and Work Management Class will be a single forty five (45) hour class conducted by two trainers.
- The Water Distribution Technician training class will be two (2) eight (8) hour classes conducted by two (2) trainers.
- The Water Distribution Work and Inspection Management Mobile Application training will be three (3) four (4) hour classes conducted by a single trainer.
- Training guides will be provided for each of the classes. Phase 2 training materials will be used for Phase 3 training, where applicable, such as Model Training. New training materials will created for classes not delivered in Phase 2.
- If any training hours listed above are not utilized for DMWW staff training then these hours will not be used and be placed within the project contingency budget.

DMWW Responsibilities

- All training will occur at DMWW training facilities.
- DMWW will assist the Woolpert Team in identifying and scheduling staff to attend the formal training sessions.
- DMWW will ensure the appropriate training facilities are available to accommodate each class.

Key Assumptions

- All end users will be proficient in basic computer skills prior to attending EAM training.
- Formal training courses will **not** be provided for the following items since they are included in the expanded training session provided in Phase 2 and will not be needed to support the Phase 3 go-live process:
    o System Orientation – this Training Segment is a pre-requisite class for all users (except working team members). This class will instruct users on basic navigation

and use of the system. This includes how to find information through the use of the system's search tools, explanation and review of the content of "Master Data" such as the Equipment and Materials Master, and data entry of basic records such as work requests and purchase requests.

- o Materials Management – This Training Segment is focused on staff who will utilize the EAM as a key application to complete daily work, and who primarily are engaged in Materials Management activities. The attendees of this training will receive TEAM Model Process and Infor application training related to the Materials Management function, and oriented to the various roles (i.e. Storeroom Supervisor, Buyer, etc.) involved in Materials Management.
- o Purchasing Management – This Training Segment is focused on staff who will utilize the EAM as a key application to complete daily work, and who primarily are engaged in Purchasing Management activities. The attendees of this training will receive TEAM Model Process and Infor application training related to the Purchasing Management function, and oriented to the various roles (i.e. Buyer, A/P Clerk, etc.) involved in Purchasing Management.

Cost Estimate

This following chart represents the proposed task costs for Phase 3. The total proposed cost for this phase including labor costs, expenses and contingency is $376,592.

Labor Cost: The original Phase 3 estimate, after the initial re-ordering of the divisions that put Water Distribution in this Phase, was for 1,816 hours of labor at $323,176. In order to make up for tasks in Phases 1 and 2 that their estimated costs, Woolpert has adjusted several labor rates and proposes offer 1,838 hours at $376,592.

Contingency: The original Phase 3 estimate, after the initial re-ordering of the divisions that put Water Distribution in this Phase, was set at 15% ($48,47640). This proposal has adjusted Contingency down to 10% ($31,668).

Expense Cost: The original Phase 3 estimate, after the initial re-ordering of the divisions that put Water Distribution in this Phase, estimated Expenses at $15,425. This proposal has adjusted Expenses up to $28,074 in order to accommodate adequate on-site visits and increasing costs of travel, specifically airline fees.

Phase 3 Proposed

Phase	Task	Task Description	Hours	Labor Cost	Expenses	Total Cost
Phase 3 WD (2013)	1	Program Management	370	$ 67,806.00	$ 953.00	$ 68,759.00
	6	System Configuration	688	$ 124,008.00	$ 15,050.00	$139,058.00
	7	Integration	476	$ 74,456.00	$ 2,608.00	$ 77,064.00
	8	Data Migration	0	$ -	$ -	$ -
	9	System Testing	118	$ 20,770.00	$ 3,010.00	$ 23,780.00
	10	Training	186	$ 29,640.00	$ 6,623.00	$ 36,263.00
NA	NA	*Phase Contingency (10%)*	*NA*	*$ 31,668.00*	*$ -*	*$ 31,668.00*
		PHASE 3 TOTALS	**1,838**	**$ 348,348.00**	**$ 28,244.00**	**$376,592.00**