

EXHIBIT A: STATEMENT OF WORK

STATEMENT OF WORK

Pinellas County Asset Management Program Development and Cityworks Implementation

Tracks 1 & 2 Implementation Scope of Work

Pinellas County, Florida

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Introduction

Pinellas County, Florida, is part of the growing Tampa/St. Petersburg/Clearwater Metropolitan Statistical Area. The county business, under the direction of the Board of County Commissioners (BCC), is responsible for providing different levels of services to citizens across the county, including courts, jails, animal services, economic development, 911, emergency medical system, mosquito control, social services, and arterial roads.

The BCC operates based on five strategic directions and expects all enterprise level projects to conform to the following standards:

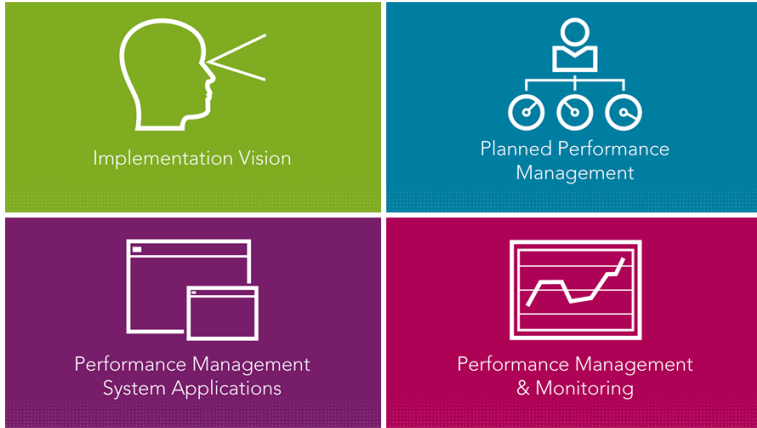
- Establish, define, and focus on a core set of services.
- Maximize and improve the service delivery of core services.
- Continuously improve efficiency of operations.
- Increase community partnership through leadership and improved communication.
- Maintain a high-performing workforce.

The County owns and operates a portfolio worth \$3.8 billion in horizontal and vertical assets within the 5 identified operating departments that need to be tracked, maintained, repaired, and replaced. Additionally, there are a number of federal and state reporting requirements that are tied to these assets and an overarching responsibility to the citizens of Pinellas to provide management of these assets in the most effective and efficient way possible. The goal is to provide a comprehensive enterprise asset management program with the highest priority placed on optimizing the life cycle of these assets and the resources supporting them.

An initial scope of work has been completed on this project. In that scope of work, the foundation components of the asset management system were established and a set of software implementation planning tasks were executed. This scope is a direct outcome of the planning tasks. The originally scoped project consisted of two main efforts. 1) The first effort was to configure the solution for all the participating work groups. 2) The second effort was to deploy the solution to all the participating work groups. During the Departmental Readiness Assessment (DRA), it became clear that there were too many groups involved to take all of them through the implementation projects as originally planned. A new approach was conceived and proposed by the joint Woolpert and County project team and accepted by the County. The new approach is to divide the implementation into two tracks. Each track will be a full implementation effort, including system configuration, deployment, and all the necessary tasks to realize a fully deployed solution.

This scope of work covers implementation Tracks 1 and 2. This scope of work will identify and describe all the tasks necessary to configure the Cityworks software solution, migrate data, develop system integrations, and deploy a complete solution for the divisions within five major operating departments at the county—Public Works, Utilities, Real Estate Management, Solid Waste, and Parks and Conservation Resources.

Overview



Woolpert’s Asset Management Program Development and Enterprise Asset Management System Implementation projects are focused on delivering a comprehensive set of management strategies, technology tools, and asset management best practices that support our clients’ planned asset sustainability performance objectives. **Through this scope of services, Woolpert will develop and deploy a usable Cityworks solution for the divisions within the five operating departments (Utilities, Public Works, Solid**

Waste, Park Conservation Resources, and Real Estate Management) that are listed in the following Track 1 and Track 2 tables. The solution will build upon the planning activities which were executed in a previous scope of work and defined the foundation of the County’s AM program, established Countywide business processes and AM standards, and defined a set of global configuration settings.

There are many related Tasks and Sub-Tasks that have to be properly managed, executed, delivered, and accepted to ensure a successful outcome of a high-value Cityworks AMS Enterprise Asset Management System deployment. **Woolpert’s proven project methodology fully addresses all aspects of this complex project and ensures all critical success factors are fully addressed in a logical order.**

Services, and associated deliverables, are categorized into several groupings called phases, as more fully detailed in the following sections. Completion of each phase will culminate with the execution of a Phase Acceptance and Close document signifying the County’s acceptance of the services rendered to date and authorization for Woolpert to proceed with work on subsequent phases. In some cases, work in subsequent phases will not begin until the deliverables in previous phases have been accepted by the County. In other cases, work in multiple phases will occur simultaneously.

The foundation of the County’s Asset Management Program will be developed, and the Cityworks AMS solution will be configured per this Statement of Work (Scope of Services) for the divisions within Public Works (PW), Utilities (UTIL), Real Estate Management (REM), Solid Waste (SW), and Parks & Conservation Resources (PCR) in two tracks as identified in the following table:



TRACK 1		
Departments	Divisions	
Public Works Department	<ul style="list-style-type: none"> • Customer Service • Mosquito Control & Vegetation • Roadway Maintenance 	<ul style="list-style-type: none"> • Stormwater • Transportation
Utilities Department	<ul style="list-style-type: none"> • Customer, Field Service (Admin) • Maintenance 	<ul style="list-style-type: none"> • Water Quality

TRACK 2		
Departments	Divisions	
Public Works (PW)	<ul style="list-style-type: none"> • Environmental Management • Stormwater Engineering 	
Utilities (UTIL)	<ul style="list-style-type: none"> • Plant Operations 	
Real Estate Management (REM)	<ul style="list-style-type: none"> • Building Design & Construction • Real Estate Management • Real Property • Fleet Management • Southeast Section 	<ul style="list-style-type: none"> • Detection Section • Facility Operations • Maintenance Programs • Northwest Section • Star Center
Solid Waste (SW)	<ul style="list-style-type: none"> • Business & Financial Services • Customer Outreach 	<ul style="list-style-type: none"> • Infrastructure Management • Operations Management
Parks & Conservation Resources (PCR)	<ul style="list-style-type: none"> • Air Quality • County Horticulture Operations • Ft DeSoto • Heritage Village • PCR Trades 	<ul style="list-style-type: none"> • Park North District • Park South District • PCR Administration • Resources and Asset Management

NOTE: Divisions that perform similar tasks may be grouped into a single set of configuration workshops.

Our project plan, its associated budget, and schedule were developed based on many bounding assumptions inferred from information provided to us by the County and discussions with County staff. Both parties (Woolpert and County) agree to these bounding assumptions and understand that if they are not adhered to, there is risk for scope, schedule, and budget impact. The following assumptions apply to this scope of work:

- The make-up of the County’s project team will be as follows:
 - **County Program Sponsor** – The County Program Sponsor will liaise between the County project team and both the Assistant County Administrator assigned to the Asset Management Program and the Directors from each of the five (5) operating departments that will implement the Cityworks solution. Program Sponsor is expected to be a visible and vocal advocate of the Cityworks implementation and asset management program development to stakeholders within the County’s employ and beyond, such as County



citizens, businesses and commissioners. Sponsor should ensure that each department provides the appropriate amount of emphasis on communicating the coming changes, address senior and mid-level managers within the departments who are not acting as visible and vocal advocates of the coming changes, and participate in Leadership Action Plan meetings, own and assign action items and ensure their timely completion.

- **County Project Manager** – The County is to identify and empower a Project Manager who will jointly manage the project along with the Woolpert Project Manager. The County Project Manager will be responsible for ensuring the availability, readiness, and participation of the County resources including County-directed sub-consultants, as well as the execution of the County-assigned tasks and completion of the County-assigned deliverables.
- **County Implementation Team** – The County is to identify and empower a set of individuals that constitute the County Core Team, also referred to as the Implementation Team. The Team will consist of Subject Matter Experts from each of the implementing divisions/departments/groups. The selected representatives from each of the participating departments will be available for the project throughout its entirety. Woolpert recommends two power users from each of the divisions to be implemented. We recognize that this will result in a large number of staff being involved in the project, so Team Members who can represent multiple divisions are encouraged. We also strongly recommend that no single set of expertise is single threaded; each division should be championed by multiple core team members so that staff workloads and turnover does not unduly affect the project.
- **County Technical Team** – The County is to identify and empower a set of IT professionals to support this project. These individuals will be known collectively as the Technical Team. The selected representatives from each of the participating departments will be available for the project throughout its entirety. The Technical Team will be comprised of experts on each of the software and hardware components involved in this project including, but not limited to, County servers and workstations, County network infrastructure, Esri GIS and the County’s Esri deployment, each of the software solutions from which data may be migrated, and each of the software solutions to which Cityworks may be integrated. When Technical Team participation is noted within the detailed scope of services, the expectation is that the appropriate Technical Team experts will participate, not all of the team members.
- **County Cityworks Subject Matter Experts** – The County is to identify at least two individuals as Cityworks System Administrators. The selected individuals will serve as System Administrators for the Cityworks AMS solution once it has been deployed in a Production environment. System Administrators are expected to be involved in the project tasks that directly relate to system configuration decisions, such as business process and configuration workshops, as well as tasks that indirectly relate to system configuration such as integration workshops. These individuals will benefit from learning both how the system can be/is configured but also how external systems can affect/drive its configuration.
- **Organizational Change Management Lead** – The County is to identify and empower a Change Management Lead who will support the County PM in ensuring the readiness of the organization, from executive leadership through front line operators and technicians. This individual will work across departments/divisions to prepare the organization for upcoming tasks. The Change Management Lead is responsible for looking well into the future of the project and identifying potential issues related to readiness or willingness to adopt the coming changes and for taking the necessary steps to mitigate those issues. The County

Change Management Lead will also be responsible for measuring the adoption and benefit of the implemented solution.

- **Communications Lead** – The County is to identify and empower a Communications Lead who will support the County PM in ensuring that the appropriate messaging is permeated throughout the organization during all of phases of the project. The Communications Lead will set meetings, coordinate mass e-mail communications, author/edit project newsletters, maintain a project website, and organize readiness activities.

NOTE: The County may elect to assign multiple roles to a single individual.

- System Configuration will be performed during Phase 3: Core System Design and Configuration in each Track. The implemented system will support a multitude of service request, work order, and inspection workflows through the Cityworks AMS software. Cityworks Work Orders will be configured to support a variety of maintenance activities including preventive maintenance, scheduled corrective maintenance, and unplanned reactive maintenance. If, during the Track 2 Configuration Phase, it is determined that neither standard nor advanced configuration options are able to satisfy a County requirement, Woolpert will develop a business use case, and upon County’s formal request by the Project Manager, a specification and scope to address the requirement via system customization, application development, system integration and/or implementation of a third-party solution. Execution of these customization-related efforts will be scoped and contracted external to this scope of services.

NOTE: A set of customizations have been identified, scoped and included in this document for Track 1. The effort to deliver these items is included in Phase 11: System Customizations.

- The County desires that the required effort and resulting benefit of migrating data from legacy software solutions (to be retired as a result of this project) be evaluated. The effort included in this scope of work is to perform an analysis for the migration from each of these systems. Upon acceptance of the migration requirements, Woolpert will perform the migrations.

Woolpert will evaluate, develop, and deploy the migration of data from the following legacy software solutions:

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ Maximo 4.0.3 (Utilities & Star Center) & 6.2 (REM) ○ Agile Assets ○ ProLease ○ VCMS | <ul style="list-style-type: none"> ○ Traffic Copp ○ LINKO ○ Maximus |
|--|--|

- The County desires that several existing County software solutions be integrated with the Cityworks solution for providing a true enterprise asset management program solution. The effort in this scope of work is to develop a Software Requirements Specification (SRS) document for each system integration. Upon acceptance of the integration SRS documents, Woolpert will develop the integrations.

Woolpert will plan, develop, and deploy integrations to the following, existing County software solutions:



- | | |
|--|---|
| <ul style="list-style-type: none"> ○ Oracle eBusiness Suite R12.1.3 (Track 1) ○ SAP Customer Information System (Hosted Solution) (Track 1) ○ GraniteNet (Track 1) ○ Fuel Management System (Track 2) ○ PAVER 7 (Track 2) | <ul style="list-style-type: none"> ○ SeeClickFix (Track 1) ○ NAPA Spare Parts Inventory (TRACS) (Track 2) ○ Wonderware (SCADA) (Track 2) |
|--|---|

NOTE: The Grainger Keepstock program will also be vetted as a possible integration between Cityworks and the Grainger inventory management solution.

- The County desires that Woolpert provide a formal Organizational Change Management (OCM) resource to lead the OCM activities throughout the Track 1 implementation. Per Change Control Notice (CCN) # 6, the County has taken over full ownership and execution of the OCM related tasks in Track 1 post June 1, 2018. The County will continue to assume full ownership and execution of the OCM activities in Track 2.
- Woolpert has included a dedicated full-time resource into the project scope and fee for the duration of the current scope of work. The currently scoped duration of Track 1 is 120 weeks. Reducing PM effort for known holidays, Woolpert has included 115 weeks of PM time to manage Track 1. The currently scoped duration of Track 2 is 114 weeks. Reducing PM effort for known holidays, Woolpert has included 109 weeks of PM time to manage Track 2. The Woolpert Project Manager will be on-site as much as necessary to support Project tasks but may work remotely at times. While working remotely as needed, the Woolpert Project Manager will be accessible and available for meetings, conversations, and phone calls as needed by the County.
- The County and Woolpert will jointly ensure that enterprise GIS structure and data for those asset classes that are covered by the implementation in Tracks 1 and 2 are available before Woolpert can begin configuration of Cityworks AMS software. QA/QC of the GIS data to be consumed by the Cityworks AMS software will be the County's responsibility. Specific roles and responsibilities around GIS readiness are identified in Phase 8: GIS Readiness.

Technical Approach

The Woolpert approach will consist of the following phases for both Tracks:

Phase 1: Project Management	Support Phase
Phase 2: Implementation Planning (completed)	Technical Phase
Phase 3: Core System Design and Configuration	Technical Phase
Phase 4: Advanced Configuration and Functionality	Technical Phase
Phase 5: System Deployment	Technical Phase
Phase 6: Extended Support	Technical Phase
Phase 7: Organizational Change Management	Support Phase
Phase 8: GIS Readiness Support	Technical Phase
Phase 9: ISO 55K EAM Program Development Support	Program Phase
Phase 10: Owner Directed Funds	Program Phase
Phase 11: Track 1 System Customizations	Technical Phase
Phase 12: Cityworks Upgrade	Technical Phase

The Technical Phases are executed in conjunction with the Project Management and Organizational Change Management activities (Support Phases) defined in phases 1 and 7, respectively. GIS Preparedness, Phase 8, is Technical in nature and executed in advance of Track 2. In Track 1, Phase 8 work follows the technical Phases 3–6. Each phase will also include the Quality Management activities and the intrinsic Knowledge Transfer that occurs naturally throughout the implementation by our teams’ many collaborative activities. Deliberate execution of each technical phase, with continuous County involvement and feedback enables Woolpert to ensure a successfully planned, designed, configured, and deployed asset management solution that is used and useful immediately upon “Go-Live,” provides the tools and resources needed to support current and planned asset management activities, and enables the means to monitor and measure continuous improvement activities.

Phase 9 is a Program Phase and is a continuation of foundational work in ISO EAM Framework development started in the Implementation Planning Phase conducted prior to Track 1 kickoff.

Phase 10 is a Program Phase and will be used to fund new scope items as identified, justified and ultimately approved by the County.

Phase 11 is a Technical Phase that defines the scope for developing and deploying the known Track 1 Cityworks customizations.

Phase 12 is a Technical Phase that describes the expectations and responsibilities as related to periodic system upgrades.

Each of the technical phases is performed as laid out in the project schedule, with specific phase deliverables achieving County sign-off in each of the appropriately defined Tasks or Sub-Tasks. The culmination of each phase is solidified by a Phase Acceptance and Close-out process that signifies delivery and acceptance of the Phase Tasks/Sub-Tasks and clears the way to proceed with the subsequent phase.

Each of the phases is presented in detail in the subsequent sections of this Statement of Work document.



Quality Management Process

Aligning expectations between the Woolpert and County teams is critical to producing results that satisfy the County. As each task is planned and executed, the Woolpert and County project managers will discuss the scoped deliverables. The Woolpert team will describe the deliverables that they intend to produce (agendas, documents, software configurations, software code, etc.). Where possible, the Woolpert team will provide samples created on similar projects to illustrate the deliverable. No task should begin until both Woolpert and the County expectations of the deliverables are aligned.

Each type of deliverable on a project serves a purpose. And the quality review process exists to ensure that the purpose is met. In general, the deliverables that are intended for a larger audience or are expected to be used for a longer time and possibly “survive” the project (be used beyond software go-live) will undergo a more intense quality review. Other deliverables are simply a stepping stone to move the project forward. These are considered “disposable” deliverables. The following examples illustrate how different deliverables serve different purposes.

- **Disposable Example: Meeting Agenda** will ensure that a meeting is planned according to expectations (topics and durations), that the right attendees are invited, and that the time and place for the meeting are appropriate. After the meeting, the agenda serves no further purpose. Agendas will be lightly peer-reviewed by an appropriate team member to ensure that its content and message is appropriate. The review will not place emphasis on writing style.
- **Surviving Example: AM Program Foundational Document** will be held to a high-quality standard. The DRAFT deliverable will be reviewed for content, message, and writing style. The FINAL version will be reviewed for content, message, writing style, grammar and spelling and mistakes will be corrected prior to final delivery to the County.

Deliverables will be reviewed for the following items, as appropriate for the deliverable:

1. **Content:** ensure that the deliverable contains the correct information and that the information is accurate
2. **Messaging:** ensure that the voice and tone of the writing conveys the appropriate message; ensure that the message is clear and easily understood by the intended audience
3. **Writing Style:** ensure that the writing is easily read and presents the content in a logical manner; writing is professional and uses minimal slang and jargon
4. **Grammar:** ensure that writing is free of grammatical errors that could affect the meaning of the statements
5. **Spelling and Typos:** ensure that the deliverable is free from spelling and typographical errors

The following table lists the typical types of deliverables that will be produced on this project and the extent and focus of Woolpert’s quality reviews.

Deliverable	Extent of Review	Areas of Focus
Meeting/Workshop Agenda	Low	Content
On-site Prep Sheets	Low	Content
Meeting/Workshop Presentation	Medium	Content, Messaging



Deliverable	Extent of Review	Areas of Focus
Stakeholder Presentation (for audiences outside of the project team)	Medium	Content, Messaging
Stakeholder Documents (for audiences outside of the project team)	DRAFT Version: Medium FINAL Version: High	Content, Messaging Content, Messaging, Grammar and Spelling
Industry Presentations	Medium	Content, Messaging
Industry Documents (trade journal articles)	DRAFT Version: Medium FINAL Version: High	Content, Messaging Content, Messaging, Grammar and Spelling
AM Foundational Document	DRAFT Version: Medium FINAL Version: High	Content, Messaging Content, Messaging, Grammar and Spelling
System Configuration	High	Content
Integration Components	High	Content
Reports	High	Content

In general, Woolpert employs five types of quality control methods. The appropriate quality control activities are executed prior to delivering to the County the DRAFT and FINAL versions of a deliverable.

- **Subject Matter Expert (SME) Peer Review** – A Woolpert SME that is not involved in the project will review the deliverable prior to delivery to the County. External SMEs will review documents that do not require intimate knowledge of the County’s project.
- **Project Team Member Peer Review** – Many Woolpert deliverables will be produced by a two-person team after a great deal of interaction with County team members. These deliverables require that the reviewer have detailed working knowledge of the County’s project. Deliverables that require such knowledge will be created by one member of the two-person Woolpert team and reviewed by the other. In some instances, the Woolpert project manager will also review the documents. Along with providing feedback on their quality, the project manager will also perform periodic reviews so that they can stay abreast of decisions made by others, particularly in the areas of system configuration, systems integrations and organizational change management.
- **Technical Writing Review** – Woolpert employs several technical writers who routinely review documents that require the highest level of polish. Deliverables reviewed by these individuals are typically externally facing documents that are designed to survive the project.
- **Internal Demos to Peers** – The Woolpert team stages an internal demonstration of deliverables such as system configuration and integration code (non-document deliverables) to one or more Woolpert peers who are not involved in the project as though they were providing the demonstration to the County team. The peer(s) prepares for the demonstration by reviewing the project documentation (configuration and/or integrations documents). They then sit through the demonstration and ask specific configuration and process questions of the presenters. Along with ensuring that the look and feel of the deliverables are up to Woolpert standards, any gaps in the configuration or documentation are addressed prior to delivery.



- **Client Reviews** – Woolpert employs an iterative approach to configuration. As a result, this approach reduces defects and mitigates configuration issues because we’re getting valuable feedback from the County throughout the project.

Any time Woolpert observes or is otherwise made aware of a project deliverable or staff performance deficiency, the Woolpert project manager will immediately undertake the efforts required to resolve the identified issue(s). This can include executing a more rigorous quality control process, re-visiting/clarifying assumptions, or removing non-performing project team members. Each quality issue often has its own set of unique circumstances that need to be addressed. Woolpert’s team dedicated to this Project takes quality and client satisfaction issues very seriously. Processes are in place internally to immediately engage all necessary parties and employ all appropriate strategies to resolve all quality issues that arise on this project.

As a matter of practice, Woolpert embeds each phase in the Technical Approach with an associated Quality Control sub-phase estimated at 5% of the phase fee to cover a combination of the quality control methods that will be employed as appropriate and described in this section.

Phase 1 - Project Management

The development of an Asset Management Program and the implementation of a Cityworks Asset Management System (AMS) are complex endeavors that present a variety of strategic, technical and organizational challenges that will need to be identified, analyzed, understood, and continually managed in order to ensure a successful outcome.

Woolpert’s Project Management approach provides the resources and tools needed to successfully manage the project through all phases/processes, including:

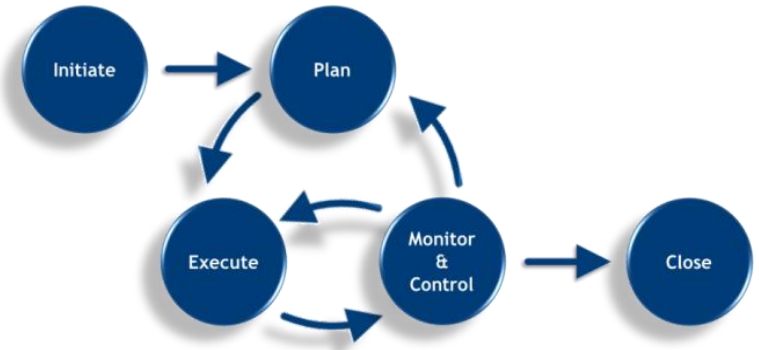


Figure 1 - Project Life-Cycle Process Groups

- **Initiation:** Project authorizations and expectations.
- **Planning:** Project definitions, objectives, deliverables, analysis of alternatives.
- **Execution:** Coordination of resources, quality management, product and service delivery.
- **Monitoring and Controlling:** Monitoring and measuring to identify variances and imitate corrective actions.
- **Close-Out:** Acceptance of project deliverables and results.

To fulfill each of these objectives, Woolpert will employ the various project management tools described in the following sections.

WBS Task 1.1: Ongoing Project Management Tasks

Woolpert will continue to provide ongoing project management tasks (as defined in the original scope of work) as described below.

Project Administration

This task was completed prior to the Implementation Planning phase. Deliverables in this task will be revisited as necessary. Woolpert will provide the following general project management services:

- Develop, in cooperation with the County’s Project Manager, a project plan and schedule.

- Proactively manage and update project plan and schedule, as required, throughout the duration of the project. Project plan and schedule modifications will be facilitated upon common agreement between the County and Woolpert Project Managers in accordance with the issue control process detailed in the project plan; acceptance by county will be within 5 working days of submission.
- Coordinate project events with the County Project Manager and Woolpert team members.
- Author, edit, review, and distribute project documentation and technical reports as required.
- Facilitate in-process review meetings with the County Project Manager, committees, management, and end-users as scheduled, and appropriate, throughout the duration of the project.
- Maintain a secure project collaboration web site to post project schedule details, in-process tasks and responsible parties, technical documentation, as well as other project collaboration tools.
- Perform miscellaneous project administration (e.g., arrange travel, internal project updates).
- Anticipate problem areas and propose and facilitate solutions.

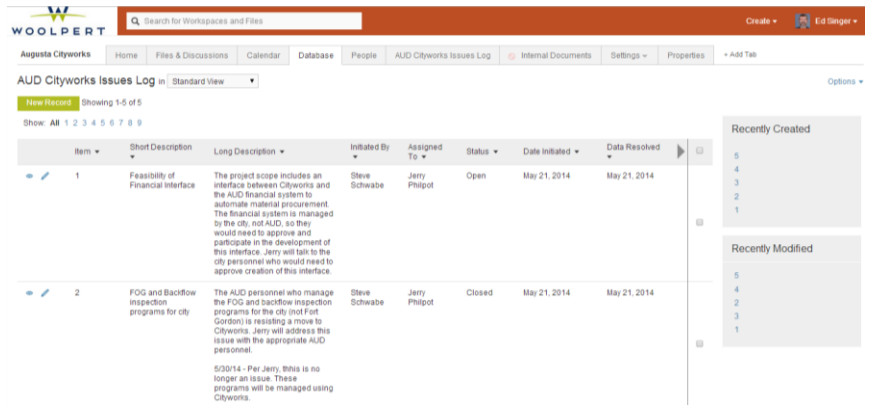


Figure 2 - Woolpert's Project Collaboration Web Site

Project Schedule Coordination

Project schedule coordination and management will be performed using Microsoft Project software. Project schedules and tasks will be monitored and adjusted as needed, depending upon the County's priorities and ability to make its staff and facilities available at the appropriate times throughout the project. An updated project schedule delineating resources, scheduled tasks, and completed tasks will be maintained and available to all Woolpert and County project participants.

Deliverables

- Woolpert to maintain a project schedule in Microsoft Project and to update the project schedule with significant changes and percent completes on a regular basis.

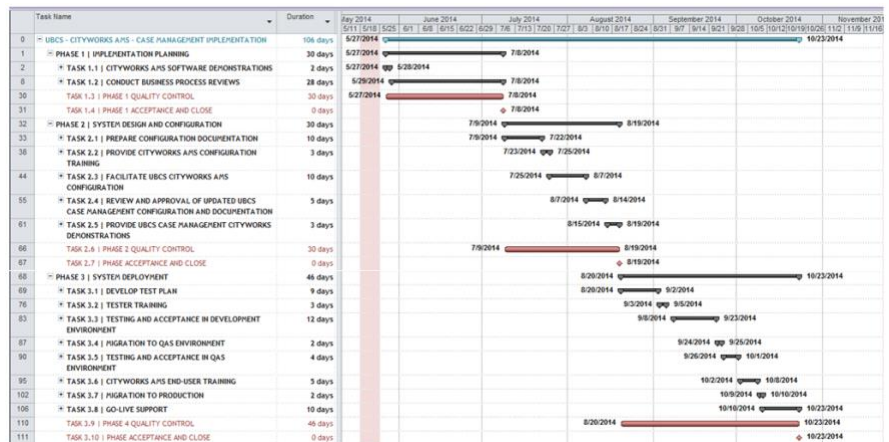


Figure 3 - Microsoft Project Gantt Chart



Assumptions

- The activities discussed in this section are a continuation of the activities conducted during the initial effort to develop the ISO 55000 framework and perform implementation planning tasks; no significant changes were incorporated.
- These activities are included in this scope of services for the duration of this effort, as currently scoped.
- Refer to Overview Section, page 2, for details around project duration and PM time.

County Responsibilities

- County to participate in project schedule reviews on a regular basis.

Project Manager Status Meetings

Woolpert will facilitate regular Project Manager Status Meetings with the County Project Manager. The Woolpert Project Manager and other Woolpert project team members, as appropriate, will participate in regularly scheduled project status meetings with the County Project Manager and designees, as appropriate, for the purpose of reviewing project issues including: 1) activities, action items, and deliverables completed to date; 2) activities, action items, and deliverables in process or scheduled; 3) upcoming activities, action items, and deliverables; and 4) technical or contractual issues that require corrective action. Woolpert meeting participants will include Woolpert’s Project Manager and ad hoc team members, as required. County meeting participants will be as determined by the County Project Manager, or as requested by the Woolpert Project Manager.

When feasible, Project Manager Status Meetings will be held on-site at County facilities in conjunction with other scheduled on-site tasks. Otherwise, Project Manager Status Meetings will be facilitated remotely using teleconference and web meeting tools.

Deliverables

- Woolpert to facilitate weekly Project Manager meetings.
- Woolpert to author Meeting Minutes for each Project Manager meeting and to upload the minutes to project website.

Assumptions

- Refer to Overview Section, page 2, for details around project duration and PM time.

County Responsibilities

- County to schedule appropriate internal staff and provide facilities for on-site meetings and off-site conference calls.
- County to review and accept project status reports, or otherwise provide comments within a reasonable time frame.
- County to schedule meeting space and supporting technology peripherals suitable for on-site meetings.
- County to coordinate and schedule meeting attendees.



Internal Coordination Meetings

Internal Woolpert-resource coordination meetings will be held on a regular basis to ensure continuous communication about tasks in process, scheduled tasks, and any issues impacting a successful implementation. The Woolpert Project Manager will utilize these meetings to gather information from project team members required to manage on-going resource loading.

Deliverables

- Regularly scheduled internal coordination meetings attended by Woolpert team members.

Assumptions

- See previous assumptions.

County Responsibilities

- None.

Change Control

This section defines how changes to the original objectives and/or deliverables defined in this Statement of Work will be handled. Both Woolpert and the County recognize that change is a normal part of the project life cycle. Woolpert believes that managing change to project scope, cost, and schedule is critical to a project’s success. We employ a comprehensive approach to change control. Woolpert’s established change control process is documented as follows.

Any project team member (County or Woolpert), through their respective PM, may initiate a change request whenever there is a perceived need for a change that will affect the desired or anticipated outcome of the work or any element of the project. The project team member will use a Change Control Notice (CCN) form as appropriate for the change:

- As required by PMs, agreement to a change and execution of the CCN signifies agreement to a change in overall costs, functionality, time scales, schedule or other identified project impact.
- Changes will be identified and communicated by/to the respective Project Managers by any of the prescribed communication channels. Change requests may be introduced via verbal conversation or other form of communication but must be supported by the appropriate CCN document.
- All CCN’s will be signed by both the County and Woolpert Project Managers to indicate acceptance of the changes.

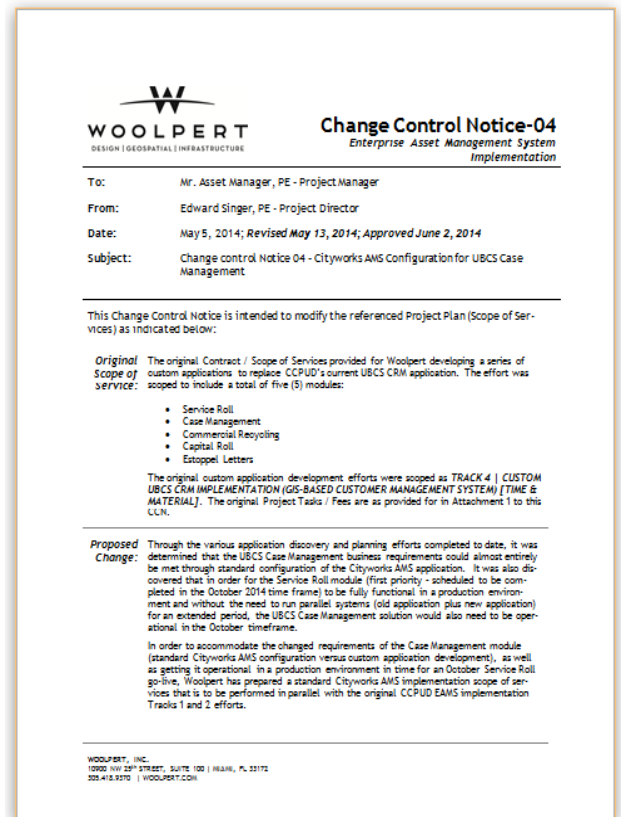


Figure 4 - Sample Change Control Notice



- All project participants should understand that time is of the essence when initiating, reviewing, negotiating, and approving requested changes, as any delays to work in progress caused by a CCN may impact the overall project schedule and budget.

All change requests should be managed from their initiation through to their completion (acceptance or rejection) within five (5) business days from the start of the process. If the County and Woolpert Project Managers cannot reach common agreement on the request change within this time frame, the issue will be elevated to the next level of management (both County and Woolpert) for resolution. During the resolution process, all downstream project tasks potentially impacted by the requested change will be placed on hold until such time that resolution is achieved.

The following workflow diagram graphically depicts the above detailed process:

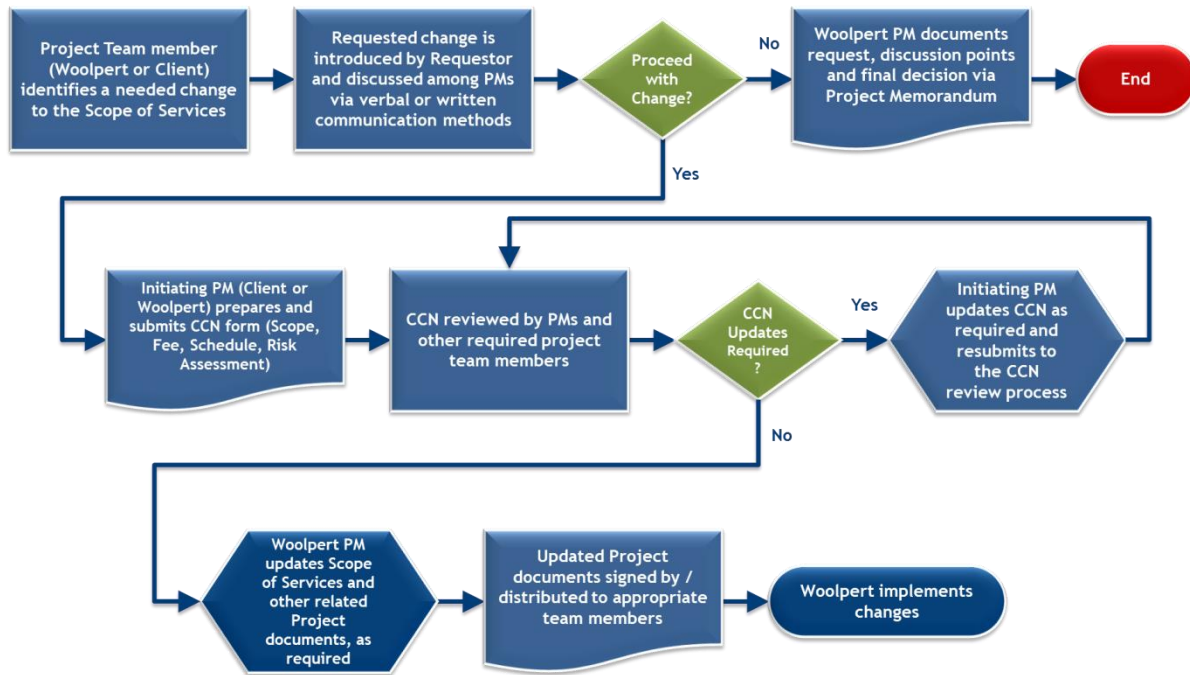


Figure 5 - Change Control Process

Each Change Control Notice (CCN) will clearly document the following:

- Date
- Change Control Number
- CCN Initiated By
- Original Scope of Services (language from the original scope that is being considered for change)
- Proposed Change (narrative of the proposed change(s) being sought)
- Schedule Impact (details about the proposed change(s) impact to the overall project schedule)
- Fee Impact (details on the proposed change(s) impact to the project budget)
- Risk Assessment (narrative discussion about the risks the proposed change(s) will introduce to the project and the ways in which said risk will be mitigated)
- Acceptance Signatures (Woolpert and County Project Managers)

Phase 2 – Implementation Planning

This phase is complete. To maintain phase numbers that have been adopted by the project team, Phase 2 tasks were deleted from this scope of work, but Phase number 2 will not be repurposed for the subsequent efforts. Both Tracks will have a Phase 2 in the MPP but without any tasks, activities or resources assigned to it.

Phase 3 – Core System Design and Configuration



Using the “road map” developed in Phase 2 as our guide Woolpert will lead the County’s Implementation Team through the AMS software design and configuration tasks and will create the software configuration document. The end result of Phase 3 activities will be a fully configured Cityworks AMS solution deployed to the County’s development environment, but without working system integrations, any legacy transactional data records or the development of software customizations, custom application development or the implementation of third-party software solutions that may have been identified during the configuration tasks.



The data migration and system integration efforts, included in Phase 4 of this scope of services, will run concurrently with the Phase 3 tasks. At the conclusion of the Phase 4 tasks, all legacy data migrations and system integrations will be fully developed and in-place, ready for system testing activities. The intent is to complete all system configuration, data migration and system integration development work prior to moving to *Phase 5: System Deployment*.



It was decided during the *Phase 2: Implementation Planning* activities that software customizations will be kept to only those that are absolutely required or that provide a great deal of value to the deployed system and future business processes. Should any software customizations, custom application development and/or implementation of third-party software solutions be identified as required during the configuration phase, Woolpert and the County will evaluate each effort and determine how to proceed with the delivery of each. The delivery of these solutions is not included within this scope of services.

Woolpert will work with all the divisions included in this scope of work to design and configure Cityworks for their work management requirements. Intertwined in this phase (Phase 3) during the Track 1 tasks is the development of an Asset Specific Plan (carry over task from Phase 2: Implementation Planning) for County pavement assets in Track 1. However, for Track 2, this phase is solely focused on the Core System Design and Configuration tasks.

In *Phase 2: Project Planning*, the Global Configuration Standards task resulted in a document called *Global Asset Management Business Processes and System Configurations*. The work processes and configuration items defined in this document will serve as the starting point of the configuration workshops for both Tracks. Woolpert will initiate the configuration activities by developing a set of configuration documents. The documents will include the baseline information from the *Global Asset Management Business Processes and System Configurations* document. Woolpert will submit the baseline configuration document to the County Implementation Team for the purpose of gaining a level of familiarity with the various aspects of the system components that will need to be configured (service requests, work orders, inspections, job plans, work crews, default schedule dates, etc.). Then, Woolpert will deliver a Configuration Prep Info Session so that the County Implementation Team can understand how the Configuration Document ties to the actual

Key Core System Design and Configuration (Phase 3) Deliverables

- **System Configuration for Track 1 & 2 to include:**
 - Development of a baseline Configuration Document for each Track
 - Cityworks Introduction Training for the Track’s Core Team
 - Multiple Rounds of Configuration Workshops and a Configured Solution
 - On-site Software Demonstrations for Track Acceptance

system configuration. In essence, the Configuration Prep Info Session is about telling the County Implementation Team what information they will be asked for during the Configuration Workshops.

Following the Cityworks AMS Configuration Prep Info Session, Woolpert will facilitate three rounds of on-site configuration workshops, whereby the Cityworks AMS software solution will be iteratively configured and loaded with information provided by the County Implementation Team.

- First round of configuration workshops gather specific information pertaining to types of service requests, activities performed against assets by County's employees for both work orders and inspections and information pertaining to reporting.
- The second round of configuration workshops explores the recently configured Cityworks AMS software with the County Implementation Team. Round 2 workshops provide the County Implementation Team more exposure to the software and allows them the opportunity to make changes once viewing the information within the actual software.
- A third round of workshops will be used to refine the system configuration ever further. We expect that nearly all of the system will be configured prior to these workshops and that these last workshops will be used to tailor the system to the final known details.

From a project standpoint, it is necessary to freeze the core system configuration activities four (4) weeks beyond the end of Round 3 workshops so that the project team members can move on to system deployment activities. Woolpert and the County will jointly determine how to record the core configuration change requests beyond the freeze date in order to ensure that they are addressed after system go-live. Core Configuration changes beyond the freeze date will need to be scoped out and approved by County. Configuration changes resulting from System Integration, Reporting, or Legacy Data Migration phases are not subject to the freeze date. These configuration changes will be made within the scope and schedule required to complete these phases.

Within each round of workshops will be multiple cycles. A cycle is three weeks in duration in Track 1 and four weeks in duration for Track 2. In each cycle, the first week is the on-site workshop effort. In Track 1, the second week is the remote system configuration and documentation effort. In Track 2, the second and third week are used for remote system configuration and documentation effort. In Track 1, the third week is a collaborative effort between Woolpert and County resources where Woolpert provides a remote demonstration of the configured solution to the workshop participants. The workshop participants then use the system, creating records as directed by the Woolpert team. At the end of the week, Woolpert will configure summary report(s) of the records created and processed by the workshop participants which the County can run to monitor activity. In Track 2, this is done in week four. The final week of each cycle in both Tracks is to ensure that the workshop participants "put hands on" the system so that they are more prepared with feedback for the Woolpert configuration team at subsequent workshops. The workshop participants are encouraged to continue "playing" with the system beyond the final week of their cycle, but no formal tracking of their activities will be reported of those activities.

Once all the configuration activities have been completed, Woolpert will facilitate a series of on-site system demonstrations. These demonstrations will "walk" the system through asset/maintenance management workflows in the manner they were configured and provide the County Implementation Team, Stakeholders and end-users an opportunity to view the system fully configured.

WBS Task 3.1: System Design and Configuration

The divisions to be configured in Track 1 are those in the Utilities and Public Works Departments. Workshops will be conducted for the following nine (9) Division/groups as listed in the following tables:

Department	Grouping
Utilities	Customer, Field Services Division
	Water Quality
	Maintenance Division
Public Works	Mosquito Control and Vegetation Management
	Stormwater
	Customer Service
	Transportation
	Roadway Maintenance

The divisions to be configured in Track 2 are those in the Utilities, Public Works, Real Estate Management, Solid Waste, and Parks and Conservation Resources Departments. Workshops will be conducted for the following nineteen (19) Division/groups as follows:

Department	Grouping
Utilities	Plant Operations
Solid Waste	Customer Outreach
	Infrastructure Management
	Operations Management
Public Works	Business & Financial Services
	Environmental Management
	Stormwater Engineering
Real Estate Management	Building Design & Construction, Real Estate Management
	Detention Section, Facility Operations, Maintenance Programs, Northwest Section, Southeast Section
	Real Property
	Fleet Management
Parks and Conservation Resources	Air Quality
	County Horticulture Operations
	Ft DeSoto, Park North District, Park South District
	Heritage Village
	PCR Trades
	PCR Administration
	Resources and Asset Management

WBS Task 3.1.1: Prepare Configuration Document

Woolpert will compile the asset management program data gathered and documented through the multiple on-site workshops and other related project meetings completed project-to-date (Departmental Readiness



Assessment, Global Configuration Standards, etc.) and distill this information into an organized configuration document. This configuration documentation, consisting of standard Cityworks AMS system elements, as well as the customized details required to support the County’s specific asset management program, will be used to guide the configuration of the Cityworks AMS system such that it is localized to the County’s specific work tracking and asset management requirements.

Deliverables

- Woolpert will develop a Cityworks AMS configuration document.
- Woolpert will facilitate one (1) remote review meetings up to four (4) hours in duration each with the County Implementation Team to review the Cityworks AMS Configuration Document.

Assumptions

- All tasks will be performed remotely.
- County Implementation Team will attend and actively participate in the document review meeting.

County Responsibilities

- Review the prepared Cityworks AMS Configuration Document prior to the review meeting.
- Participate in the remote review meeting.

WBS Task 3.1.2: Conduct Configuration Preparation Info Session for Implementation Team

Woolpert will facilitate on-site Configuration Preparation Info Session for providing the Department Implementation Team with the Cityworks AMS software knowledgebase needed to support the system design and implementation decisions. Configuration Prep Info Session will be comprised of a curriculum designed to cover all relative aspects of the Cityworks AMS configuration. Completion of the configuration prep info session will ensure the Department project participants (those with implementation responsibilities) are provided with enough exposure to, and understanding of, the Cityworks AMS software work order and asset management functionality such that they are able to make smart and informed configuration decisions as they relate to the overall implementation objectives. The intent of the info session is not to provide the skills needed to maintain the daily operations of the system. This End-User Training is provided later.

Configuration Prep Info Session will be facilitated in a classroom environment (computer lab or training room) on-site at County facilities.

Deliverables

- Woolpert will develop a Configuration Prep Info Session agenda and submit it to the County Project Manager.
- Woolpert will conduct up to thirty-two (32) hours of Configuration Prep Info Session in multiple blocks of time on-site at County facilities for both tracks. The breakdown of the session (number of and duration of sessions) will be determined by the project team.

Assumptions

- Info session will be facilitated utilizing the installed on-premise Cityworks AMS software environment.
- Info Session to be conducted over four (4) consecutive business days within a single business week (Monday – Friday).
- Woolpert has access to the Cityworks AMS software environment installed on-premise to perform demo of the solution during the info session.

County Responsibilities

- County to review and accept agenda for info session.
- County to schedule the appropriate County project team members such that they are available, without undue interruption, for the required number of days.
- County will provide a conference room or meeting room with a projector. During Configuration info session, individual computers are not needed for the participants. The software functionality will be demonstrated from the instructor’s computer.

WBS Task 3.1.3: Core Cityworks AMS Configuration

Woolpert will facilitate the Core Cityworks AMS Software Configuration for each Department through a series of three (3) rounds of on-site configuration workshops in both Tracks. Each round of workshops will allow each of the configuration groups to define their system requirements for *both work and spare part inventory management* such that the Woolpert Implementation Team can configure the Cityworks solution to their needs. Also, during this task, the Department Implementation Team members will collect or develop, and deliver to Woolpert, data that will be loaded into the Cityworks solution.

Within each round of workshops will be multiple cycles. A cycle is three weeks in Track 1 and four weeks in duration in Track 2. The first week is the on-site workshop effort. The second week is the remote system configuration and documentation effort. In Track 2, this continues for the third week as well. In Track 1, the third week is a collaborative effort between Woolpert and County resources where Woolpert provides a remote demonstration of the configured solution to the workshop participants. The workshop participants then use the system, creating records as directed by the Woolpert team. Woolpert has configured a summary report of the records created and processed by the workshop participants which the County can run to monitor progress. In Track 2, this is conducted in week four. In both Tracks, the final week is to ensure that the workshop participants “put hands on” the system so that they are more prepared with feedback for the Woolpert configuration team at subsequent workshops. The workshop participants are encouraged to continue “playing” with the system beyond week three, and the County is free to track their use, but the spirit of the report is to ensure that County participants are prepared with feedback during the next set of configuration workshops.

Cityworks is a complex and powerful software product. But too often, it is implemented in a less than optimal manner and as a result does not deliver the desired results. Our three-round configuration process is a critical factor in capturing user requirements and refining workflows before testing begins. Not all implementation firms use this approach, but our long history shows that the extra time spent at this stage helps make the remainder of the project much smoother.

Each successive round of workshops will address the following topics at increasing level of detail:

- **Domains.** This is the security architecture that determines how employees, work orders and other asset maintenance management information can be shared across organization-al boundaries.
- **Employee Hierarchy.** Determines security protocols for each user of the system as well as practical grouping of employees for assignments to work orders, inspections, and service requests (e.g., crews).
- **Work Orders.** Templates for each of the type of maintenance activities that will be per-formed on each asset in the system
- **Tasks.** Individual work items associated with a work order. For example, a repair sewer main work order might have tasks for establish traffic control, utility locate, excavate, etc.
- **Materials Hierarchy.** Organization and rules for items that are used to repair assets. Examples of materials are things such as pipes and meters.
- **Equipment Hierarchy.** Organization and rules for items that are utilized to complete a work order but are not consumed. Examples are items such as backhoes, vehicles, vacuum trucks, etc.
- **Service Requests.** Templates for requests for service. Many times maintenance activities are initiated starting with a service request whose purpose is to determine if a work is necessary or not.
- **Inspections.** Templates for each type of periodic and ad-hoc asset inspection where detailed attributes need to be stored as individual data elements.
- **Reporting.** Current or future expected reports will be discussed and designed.
- **Projects.** Projects to be managed within the AMS software

At the end of each round of workshops, there will be a set of action items for the Department Implementation Team members, such as compiling a list of employees, work crews, and contractors, as well as hard copies of work orders, reports, inspection forms, and other relevant data sets. Woolpert and County to define process and ensure AIs are assigned / owned when created. Business use cases are usually created to define system customizations, custom software development, third-party solutions or other methods to satisfy County requirements that cannot be satisfied using out-of-the-box Cityworks functionality. As a rule, the County agreed that customizations and business cases documenting them will not be entertained as part of Track 1 and 2 implementations. However, PLEASE NOTE that business use case evaluations will only be created for requirements that are necessary and/or provide a high value to the final solution. Should any business case documentation and subsequent evaluation be deemed worth the effort, Woolpert can prepare a scope of services and fee for documentation and its execution for the County's consideration.

Round 1 is about collecting quantity at a moderate level of detail. At the end of the first round of configuration workshops and subsequent WebEx meetings, Woolpert expects to have gathered enough information to configure a majority of the maintenance management functionality that can be satisfied with standard Cityworks configuration. Workshops in subsequent rounds will add detail to these work activities.

Round 2 is about collecting details on work activities identified in Round 1 as well as additional maintenance management activities. At the end of the second-round workshops and subsequent WebEx meetings, Woolpert expects to have gathered enough information to configure most of the asset maintenance management functionality at a nearly complete level of detail that can be satisfied with standard Cityworks configuration.

Round 3 is about finalizing the details of the maintenance management activities configured in Rounds 1 and 2 as well as determining final user groups and permissions. At the end of the third round of configuration and subsequent WebEx meetings, Woolpert expects to have gathered enough information to configure all maintenance activities and user access settings that can be satisfied with standard Cityworks configuration.

In Track 2, Three rounds of configuration will be conducted in parallel by two sets of Woolpert Analyst Teams. To optimize the length of the configuration phase, each cycle will be 4 weeks long and staggered instead of being sequential. Thereby, 13 cycles of configuration across 3 rounds spanning 39 weeks (if executed sequentially) can now be accomplished in 28 weeks effectively. However, this approach requires careful and efficient coordination and communication between the Woolpert Analyst teams, County Project, Core and Implementation Teams.

Deliverables

- Woolpert will deliver an On-site Prep Sheet (OPS) at least four weeks prior to each week of on-site activity. OPS will describe the purpose of the workshops and recommend the County skillsets that should attend.
- Round 1 Workshop Deliverables:
 - Woolpert will facilitate Round 1 workshop sessions for each of the nine (9) configuration groups in Track 1 and nineteen (19) in Track 2. Although workshop time can be reallocated between the implementation groups and may vary in duration depending on how they are grouped, the total amount of workshop time will not exceed one hundred and twenty-eight (128) hours or four on-site weeks for Track 1 and one hundred and ninety-two (192) hours or six on-site weeks for Track 2 – one on-site week per cycle and 32 hours/on-site week.
 - Woolpert will perform up to one (1) follow-up remote meetings via WebEx for each of the Round 1 Workshops weeks. Each meeting will be no longer than four (4) hours. This meeting will be held during the third week of each cycle and be used to show the County Implementation Team how to “play with” the system by creating records and experiencing the system’s configuration and functionality.
 - Woolpert will configure a report that the County project team can run at the end of each cycle’s week 3 to show the records created by the County Implementation Team.
 - Woolpert will perform system configuration in the County on premise development environment based on the outcome of the Round 1 workshops.
 - Woolpert will document business case evaluations for potential customizations based on the outcome of the Round 1 workshops.
 - Woolpert will conduct one (1) remote meeting with the County Cityworks System Administrator Team Members to show the technical details of system configuration built at the end of Round 1.
- Round 2 Workshop Deliverables:
 - Woolpert will facilitate Round 2 workshop sessions for each of the nine (9) configuration groups in Track 1 and nineteen (19) in Track 2. Although workshop time can be reallocated between the implementation groups and may vary in duration depending on how they are grouped, the total amount of workshop time will not exceed ninety-six (96) hours or three on-site weeks for Track 1 and one hundred and twenty-eight (128) hours or four on-site weeks for Track 2 – one on-site week per cycle and 32 hours/on-site week.
 - Woolpert will perform up to one (1) follow-up remote meetings via WebEx for each of the Round 2 Workshops weeks. Each meeting will be no longer than four (4) hours. This meeting will be held during the third week of each cycle and be used to show the County Implementation Team how to “play with” the system by creating records and experiencing the system’s configuration and functionality.
 - Woolpert will update the configuration documentation based on the outcome of the Round 2 configuration workshops.

- Woolpert will perform system configuration in the County on-premise development environment based on the outcome of the Round 2 workshops.
- Woolpert will document business case evaluations for potential customizations based on the outcome of the Round 2 workshops.
- Round 3 Workshop Deliverables:
 - Woolpert will facilitate Round 3 workshop sessions for each of the nine (9) configuration groups in Track 1 and nineteen (19) in Track 2. Although workshop time can be reallocated between the implementation groups and may vary in duration depending on how they are grouped, the total amount of workshop time will not exceed sixty-four (64) hours or two on-site weeks for Track 1 and ninety-six (96) hours or three on-site weeks for Track 2—one on-site week per cycle and 32 hours/on-site week.
 - Woolpert will perform up to one (1) follow-up remote meetings via WebEx for each of the Round 3 Workshops weeks. Each meeting will be no longer than four (4) hours. This meeting will be held during the third week of each cycle and be used to show the County Implementation Team how to “play with” the system by creating records and experiencing the system’s configuration and functionality.
 - Woolpert will update the configuration documentation based on the outcome of the Round 3 configuration workshops.
 - Woolpert will perform system configuration in the County on-premise development environment based on the outcome of the Round 3 workshops.
- Woolpert will document business case evaluations for potential customizations based on the outcome of the Round 3 workshops.

Assumptions

- All work aside from the actual workshops and the one week of on-site system configuration will be performed remotely.
- All Round 1 workshops will take place over the course of four (4) business weeks (Monday – Friday) for Track 1 and six (6) business weeks for Track 2.
- All Round 2 workshops will take place over the course of three (3) business weeks (Monday – Friday) for Track 1 and four (4) business weeks for Track 2.
- All Round 3 workshops will take place over the course of two (2) business weeks (Monday – Friday) for Track 1 and three (3) business weeks for Track 2.
- Actual workshops will be administered on-site at County facilities.
- County staff participating in the Configuration workshops will do so uninterrupted.
- The GIS data and structure for assets owned and maintained by the participating divisions will be complete before the starting of Round 1 of the Cityworks configuration workshops. This information is essential for Woolpert to configure Cityworks in a timely manner. Any delay in the completion of GIS data and structure prior to Configuration kickoff will impact the budget and schedule of this phase.
- Woolpert will provide the County GIS team the services defined in Phase 8 to prepare GIS data and structures.
- A map service and geocoding service will be available for Woolpert to consume specific to the AMS divisions.

County Responsibilities

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, for the required number of days.
- County will provide a conference room or training room with a projector. During Configuration Training, individual computers are not needed for the participants. The software functionality will be demonstrated from the instructor’s computer.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County Technical Team will provide Woolpert a map service and geocoding service for Woolpert to consume, specific to the AMS divisions.
- County will ensure that Workshop participants “play” in the system at the end of each cycle and generate reporting on system use.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 3.1.4: Review and Approval of Updated System and Configuration Documentation

Woolpert will provide an updated system configuration document for review by the County. This document will represent everything that is configured within the database and must be approved before the final demonstration of the Cityworks AMS system can be performed. Woolpert will perform a thorough remote review of this document with the County implementation team. However, the document is long and complicated. If the County team does not take the time throughout the Phase to learn the document’s sections and information, it will be very difficult for the County team to recommend with any degree of confidence the acceptance of the document. Hence, Woolpert strongly recommends that the County team immerse themselves in learning this document throughout this phase.

Deliverables

- Woolpert to submit updated configuration documentation to the County Project Manager.
- Woolpert to facilitate a remote configuration documentation review meeting, up to four (4) hours in duration in Track 1 and twenty-four (24) hours in duration in Track 2, with the County Implementation Team.
- Woolpert will update the configuration documentation based on the outcome of the County review and re-submit the updated documentation to the County Project Manager.

Assumptions

- County implementation team members will understand the documentation for its accuracy.
- Configuration Document will be accepted by County before official Testing of the system can begin.

County Responsibilities

- County Project Manager and Implementation team will review and provide feedback on the configuration document.

- County Project Manager and technical team will participate in a remote configuration document review meeting.
- The County Project Manager will approve and sign the configuration document.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 3.1.5: Provide Roadshow (Demonstrations) of Core Cityworks AMS Configured Solution

After completion of the core AMS software configuration and approval of the updated configuration documentation, Woolpert will facilitate a Roadshow in which Woolpert will provide a series of on-site full AMS software demonstrations to the entire future user community and project stakeholders for the configured groups. Woolpert will provide the same demonstration as many times as necessary and possible/reasonable over a five-day (5) period to accommodate the 545 Stakeholders in Track 1 and 506 Stakeholders in Track 2. Similar to the demonstrations in Implementation Planning phase, this Roadshow provides an opportunity for the County to assess the readiness of their staff. Should any apprehension or reluctance to adopt the new system become apparent, the County still has time to address those concerns and maximize staff readiness prior to Go-Live. After the Roadshow, the Woolpert implementation team and Project Manager and the County Project Manager and stakeholders, will hold a wrap up meeting to discuss the plan to address the need to develop business use cases for requirements that could not be met with standard or advanced Cityworks configurations and for deployment activities.

This task doubles as an opportunity for the County to evaluate the readiness of their workforce. Staff apprehension early in the project can be re-evaluated. New and continuing concerns can be noted at this point in the project as there is still time to ready the organization prior to Go-Live.

Deliverables

- Woolpert will provide agendas for the on-site roadshow.
- Woolpert will provide on-site Cityworks AMS software solution demonstrations for five (5) consecutive business days in Track 1 and Track 2.
- Woolpert to facilitate one (1) configuration wrap-up meeting for up to four (4) hours.

Assumptions

- All demonstration preparation activities will be performed remotely.
- County staff participating in the roadshow will do so un-interrupted.

County Responsibilities

- Secure an appropriate facility for demo.
- Coordinate and schedule roadshow participants.
- Coordinate and schedule a configuration wrap-up meeting.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 3.2: Strategy and Planning | Asset-Specific Plan (Track 1 Task)

The development of a single Asset-Specific Plan was originally part of Phase 2: Implementation Planning in the previous Project 1-Project 2 structure. When the decision to move to a multi-track implementation structure



from the original Project 1-Project 2 structure was made, it was decided that the development of the plan is more appropriate during the Phase 3: Core System Design and Configuration phase in Track 1 since the plan will be created for Pavement assets. The Pavement group within Public Works was also part of the Track 1 Cityworks AMS software implementation. This WBS Task pertains to Track 1 only. A similar WBS Task does not exist in Track 2.

Woolpert will facilitate workshops and develop, in conjunction with the appropriate County asset subject matter experts, a single Asset-Specific Plan to document the ISO 55000 subjects of Technical Standards and Legislation, Asset Creation and Acquisition, Systems Engineering, Configuration Management, Maintenance Delivery, Reliability Engineering, Asset Operations, Resource Management, Shutdown and Outage Management, Fault and Incident Response Management and Asset Decommissioning and Disposal, as each subject relates to the asset. Workshops will be repetitive in nature, meaning that Round 2 workshops will cover the same topics as Round 1 workshops, but in greater depth. The expectation is that much of the content will be readily available within the organization and that these workshops will be to assemble that content, identify and fill the gaps and knit it together into a single life-cycle plan for assets of that type.

The final deliverable for this task is a single Microsoft Word document that defines the life-cycle activities for the selected asset type. The document may contain, at a minimum, a section for each of the ISO subjects or equivalent topics determined to be applicable to the production of the Asset Specific Management Plan. Within each subject section, the document will identify specific tactics that will be applied as well as potential tactics that should be considered under various circumstances and asset conditions. The document will be focused on a single asset type and may reference yet-to-be-created documents so that its focus is not diluted with content specific to other types of assets.

Deliverables

- Woolpert will develop a Request for Information and submit it to the County Project Manager.
- Woolpert will perform a desktop audit of the information.
- Woolpert will develop an agenda and submit it to the County Project Manager.
- Woolpert will facilitate up to thirty-six (36) hours within a single business week (Monday – Friday) for Round 1 of Asset Planning workshops covering a selection of topics that may include:
 - Technical Standards and Legislation
 - Asset Creation and Acquisition
 - Configuration Management
 - Maintenance Delivery
 - Reliability Engineering
 - Asset Operations
 - Resource Management
 - Shutdown and Outage Management
 - Fault and Incident Management
 - Asset Decommissioning and Disposal
- Woolpert will develop a DRAFT version of the Asset Specific Plan and submit it to the County Project Manager.
- Woolpert will facilitate up to thirty-six (36) hours within a single business week (Monday – Friday) for Round 2 of Asset Planning workshops covering the same topics as in Round 1 or any additional that are deemed necessary based on Round 1 discussions.

- Woolpert will develop a FINAL version of the Asset Specific Plan and submit it to the County Project Manager.

Assumptions

- All County maintenance, operations, engineering, planning and other personnel involved in the life cycle of the pavement assets for which the ASP is developed will participate in all workshops will participate in the appropriate workshops.
- All activities, other than the actual workshops, will be performed remotely.
- The DRAFT document will not require joint reviews, only review by County staff in preparation for the Round 2 workshops.
- The FINAL version of the document will be submitted after the second round of workshops; no joint review or County feedback will be required.
- All Round 1 workshops will take place within a single business week (Monday – Friday).
- All Round 2 workshops will take place within a single business week (Monday – Friday).
- This task applies only to Track 1. At the writing of this scope, a similar ASP is NOT planned in Track 2.

County Responsibilities

- County Project Manager will schedule all County workshop attendees and ensure site readiness and staff participation for the workshops.
- County workshop attendees will review the DRAFT versions of the documents in preparation for the Round 2 workshops.
- County will accept the FINAL version of the ASP.

WBS Task 3.3: Phase 3 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 3 tasks, activities and deliverables.

WBS Task 3.4: Phase 3 Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered the Configuration phase in accordance with the Scope of Work and Project Plan.

Phase 4 – Advanced Configuration and Functionality



While Phase 3 is focused on configuring the Core Cityworks asset management functionality that supports work/asset maintenance management activities, Phase 4 tasks are undertaken to define and develop a more robust enterprise Cityworks AMS solution.



During *Phase 2: Implementation Planning*, five (5) systems that contain legacy data for the divisions involved in Track 1 and four (4) systems in Track 2 were deemed important enough to consider for migration. Also during that phase, four (4) existing County software solutions were identified which the new Cityworks AMS will need to interface in Track 1. Similarly, four (4) existing County software solutions were identified for interface with Cityworks AMS in Track 2. Included in this scope of services is the effort to evaluate the data migration and system integration efforts as well as to perform the actual data migration and develop the system integration components for Tracks 1 and 2.



Custom reports and dashboard requirements will be defined and refined throughout the Advanced Configuration phase. Woolpert will develop report specifications based on information previously gathered and develop saved searches, dashboards, inboxes and custom reports as required to meet the County users’ requirements.

Completion of Phase 4 tasks will result in the following:

Key Advanced Configuration and Functionality (Phase 4) Deliverables

- Legacy Data Conversions
- Custom Reports and Dashboards
- Software Development for System Integrations

1. Migrated legacy data from five (5) identified existing systems in Track 1 and six (6) in Track 2.
2. Integrations with the four (4) identified existing business solutions in Track 1 and five (5) in Track 2.
3. A set of dashboards, saved searched, KPIs and custom reports as identified in *Phase 3: Core System Design and Configuration*.

WBS Task 4.1: Legacy Data Migrations

Woolpert will perform the necessary data migration planning, data mapping and data migration script development activities to migrate historical work history records (transactional data) from the identified legacy software solutions to Cityworks AMS. Qualifying historical work activities will be migrated to Cityworks AMS as work orders. Historical work activities qualify for migration if they are associated to an asset in the legacy system and contain information about the work performed or costs of the work effort. In support of the work order migration, certain static data will be preserved. This includes data for validated fields on a work order such as Employees, Failure Codes, etc. Migration effort does NOT include migration of asset data into the Esri GIS.

WBS Task 4.1.1: Data Migration Planning

The County has identified the following solutions for Track 1 and Track 2 as containing data that may need to be migrated to the new Cityworks AMS.

Track 1		
Data	Current Environment	Legacy System
Work Management	Oracle 8i	Maximo 4.0.3
Mosquito Control	Oracle 10g	VCMS



Track 1		
Data	Current Environment	Legacy System
Work Management	Access DB	Traffic Copp
Work Management	Oracle 10g	Agile Assets
Compliance Tracking	Oracle 10g	LINKO

Track 2		
Data	Current Environment	Legacy System
Work Management	Oracle 8i	Maximo 4.0.3
Work Management	Oracle 8i	Maximo 6.2
Work Management	Oracle 10g	ProLease
Work Management	Oracle 10g	Maximus
Historical Inspections	Oracle 10g	Agile Assets PAVER data
Work Management	Oracle 8i	Maximo 4.0.3 (Star Center)

Woolpert will begin the analysis with a remote discussion with the legacy systems’ data managers and stakeholders. The discussion will be to set the expectations for this migration evaluation task and learn a little about the data to be converted. Woolpert will follow up those discussions with a request for information about each legacy dataset. Once the County has provided the requested information, Woolpert analysts can examine it for completeness and accuracy as well as evaluate its overall data structure as it relates to migrating into the Cityworks data structures. Woolpert will then facilitate on-site workshops to further evaluate the data with the County legacy data managers and users. Woolpert will author a Technical Memorandum evaluating the pros and cons of migrating the data from each legacy solution. Where appropriate, Woolpert will recommend alternate methods to archive legacy data such that it remains in an accessible, reportable format. Woolpert will facilitate a joint review of the Tech Memo and validate the scope of data migration activities.

Deliverables

- Woolpert to facilitate up to five (5) remote discussions in Track 1 and four (4) in Track 2, each up to one (1) hour in duration, with the managers and stakeholders of the legacy systems being evaluated.
- Woolpert to develop a Request for Information for each of the legacy data systems and submit them to the County Project Manager.
- Woolpert to perform a desktop evaluation of each legacy system.
- Woolpert to facilitate five (5) on-site workshops in Track 1, each four (4) hours in duration, with the managers, stakeholders and key users of each legacy system.
- Woolpert to facilitate on-site workshops in Track 2 with the managers, stakeholders and key users of each legacy system spread over a period of five days. Total on-site workshop time is not to exceed thirty-two (32) hours.
- Woolpert to develop one Tech Memo each in Tracks 1 and 2 and evaluating the effort to migrate the data from each legacy system and other options that might be available to properly maintain the history of the systems and submit the memo to the County Project Manager.
- Woolpert to facilitate a remote review with the County to review the Tech Memo for a duration of no more than four (4) hours.



- Woolpert to modify the Tech Memos based on County feedback provided during the remote review session.

Assumptions

- County Technical Team and business unit staff familiar with the legacy data and legacy data system will be available and attend each workshop.
- Workshops will be grouped to occur over the course of consecutive business days within a single business week (Monday – Friday).

County Responsibilities

- County to participate in pre-RFI discussions.
- County to thoroughly respond to request for information.
- County to secure an appropriate meeting facility for the on-site workshops and to coordinate and schedule workshop participants.
- Workshop participants shall actively participate in workshop activities without undue interruption.
- County team members to thoroughly read and prepare comments/talking points for document review WebEx meetings.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.1.2: Data Migration Development

For each legacy data migration effort, Woolpert will perform the following tasks:

1. Woolpert will develop a data migration mapping document for each of the legacy software solutions from which data will be migrated to Cityworks AMS.
2. Woolpert will submit the data mapping document to the County team for review and then facilitate a joint, remote review of the of the document. During this task, Woolpert and the County team will review the data types involved in the mapping and agree to any data manipulation, such as truncating and concatenating fields, that will be automated in the load scripts. During the task, the Woolpert and County team will also discuss the importance for the data to be standardized, normalized, deduplicated and in other ways, cleaned prior to loading in Cityworks. To a small degree, these data clean-up tasks can be performed in the load scripts, but more likely, the data clean-up will need to be performed by the County in the legacy system or on the extracted load files before they are delivered to Woolpert.
3. As appropriate, Woolpert will update the data migration document.

Upon agreement of the data mapping, Woolpert will develop the necessary scripts to load the data into the Cityworks data structures. The necessary data cleansing tasks on the source data will be performed as per the agreement in the data mapping task. It will be the County's responsibility to extract the source data and provide it to Woolpert in MS SQL format since the County's Cityworks application runs on SQL.

Woolpert will load the data in a test environment to be identified by the project team. Woolpert will facilitate a joint, remote review of the loaded data. As appropriate, Woolpert will revise the data mapping document to ensure common agreement to the requested changes. Woolpert will revise the data loading scripts per County

feedback. The County will perform additional data clean-up and re-extract data in the SQL format, as defined in the mpp.

Woolpert will load the data a second time into a test environment. Woolpert will facilitate a joint, remote review of the loaded data. As appropriate, Woolpert will revise the data mapping document to ensure common agreement to the requested changes. Woolpert will revise the data loading scripts per County feedback. The County will perform additional data clean-up and re extract data in the SQL format, as defined in the mpp.

This task will conclude with the second loading of the data into a test environment. Subsequent loading of the data, as defined in *WBS 4.1.3 Data Migration Deployment*, will be performed prior to User Acceptance Testing (UAT), End User Training (EUT), and Go-Live. After the UAT and EUT loads, minor changes to the data migration scripts and additional data clean-up may still be required and will be reviewed on a per case basis as long as it does not impact Go Live.

Deliverables

- Woolpert to develop a data mapping document for each legacy data migration effort.
- Woolpert to provide County with all SQL scripts developed to facilitate data migration.
- Woolpert to facilitate a joint, remote review of the data mapping document and make updates, as appropriate.
- Woolpert to load the source data from each system up to twice in a test Cityworks environment. After each load, Woolpert will facilitate a joint, remote review of the data in the test environment. As appropriate, Woolpert will update the data mapping documents and migration scripts.

Assumptions

- If data source is from a non-RDBMS, normalization of the data will be completed by the County.
- One Cityworks transactional record will be created within Cityworks AMS based on field mapping requirements.
- Each required field within the source system will have an identified field on the same Cityworks module record type (e.g., service request, work order, inspection). The source systems' required fields for one record will not span across multiple Cityworks modules (service request, work order, inspection).
- Child work orders and linked records are excluded from this scope of work.
- All employee names from the previous data from the source system will be migrated 'as-is'. This means they will not be searchable in Cityworks.
- The costs associated to labor, materials and equipment that will be added as part of the transactional work order record but will not be added to the template information pertaining to labor, materials or equipment.
- The information used for dropdown menus within the source system must be identified for configuration within Cityworks AMS in order for the fields to be searchable within Cityworks AMS. In addition, the content within the dropdown fields must match exact.
- If the County requires an attached asset for the Cityworks AMS record, an x and y value must be provided within the source data as well as a unique identification number for said asset. Utilizing a geocoding service based on an address to collect spatial information in order to attach an

asset to the Cityworks Legacy case is excluded from this scope of work. Only updating values that already exist within the source system will be completed.

- Any track 1 data migration items (e.g., tables or fields) that were not addressed in Track 1 will not be considered for Track 2 unless negotiated for change request with the Woolpert PM.
- Changes to configuration that impact the Data Migration process may impact schedule.
- All work will be performed remotely.

County Responsibilities

- County to perform the required clean-up on the legacy data either in the legacy system or in the data sets after they have been extracted and converted to SQL and before they are delivered to Woolpert.
- County to participate in the joint, remote reviews of the migrated data. County to provide feedback on the mapping and to make the necessary updates to the source data as agreed-to during this task.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.1.3: Data Migration Deployment

For each legacy data migration effort, Woolpert will perform the following tasks:

1. Prior to User Acceptance Testing (UAT), Woolpert will load the data in the environment that will be used for UAT.
2. Prior to End User Training (EUT), Woolpert will load the data in the environment that will be used for EUT.
3. Prior to Go-Live, Woolpert will load the data in the environment that will be used for Go-Live.

County will extract the legacy data and provide it to Woolpert in SQL format each time that Woolpert is required to load the data. Woolpert will load the data in an environment to be identified by the project team prior to UAT, EUT and Go-Live. County personnel involved in UAT and EUT will provide the necessary feedback to Woolpert if any changed need to be made to the loaded data. As appropriate, Woolpert will revise the data mapping document to ensure common agreement to the requested changes. Woolpert will revise the data loading scripts per County feedback. The County will perform additional data clean-up and re-extract data in the SQL format, as necessary. The revised data will not be reloaded until the next scheduled load activity. In other words, changes identified during UAT will not be reloaded for UAT but will be loaded for EUT. Likewise, changes identified during EUT will not be reloaded for EUT but will be loaded for Go-Live.

Deliverables

- Woolpert to load the data one (1) time for UAT.
- Woolpert to update the data mapping documents and data loading scripts, as appropriate, from the feedback of the testing team.
- Woolpert to load the data one (1) time for EUT.
- Woolpert to update the data mapping documents and data loading scripts, as appropriate, from the feedback of the training team.
- Woolpert to load the data one (1) time for Go-Live.

Assumptions

- All work will be performed remotely.

County Responsibilities

- County to perform the required clean-up on the legacy data either in the legacy system or in the data sets after they have been extracted and before they are delivered to Woolpert.
- County to extract the legacy data and provide it to Woolpert in the SQL format each time that Woolpert is required to load the data.
- County testers and trainers will provide the necessary feedback on the legacy data during the UAT and EUT tasks.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.2: Custom Reports and Metrics

Woolpert will develop the necessary inboxes, dashboards, saved searches, KPIs, metrics and custom reports for the appropriate Departments/divisions in Tracks 1 and 2.

WBS Task 4.2.1: Report and Metric Planning

During *Phase 3: Core System Design and Configuration*, County and Woolpert will develop a list of existing and desired reports that should be producible with the new Cityworks AMS software. During this task, County will provide a prioritized list of reports ranked from most to least critical for each Department/division in Track 1 and 2. Woolpert’s implementation/report development team will develop a report specification document detailing how the report will look to include items such as data elements, grouping, sections, sums, charts/graphs, etc. Each of the nine (9) Divisions/groups in Track 1 and nineteen (19) in Track 2 will have a prioritized list of reports aggregated at the Department level or as deemed appropriate by the Woolpert implementation team and the County. During this task, Woolpert will develop specifications for as many of the identified reports as possible in their order of priority within the allocated time and budget. Woolpert will facilitate an on-site review of the report specification document with each Department before finalizing the specifications and commencing report development.

In Track 2, Woolpert reporting involvement is reduced but the scope remains to develop report specifications for as many reports as possible in the order of their priority, as assigned by the County, within the allocated time and budget. The County is responsible for developing the specifications for remaining reports .

Deliverables

- Woolpert to develop a report specification document for as many reports as possible within the allocated budget using the priority list provided by the County to determine the order (from highest to lowest priority) in which they are developed.
- Woolpert to facilitate an on-site review of the report specification document for up to five (5) business days.
- Woolpert to provide guidance on industry standards, best practices, and recommended KPIs and metrics to be developed.



Assumptions

- All work will be performed remotely except for the report specification review.

County Responsibilities

- County to prioritize the list of reports for which specifications and reports will be developed.
- County team to thoroughly review the report specification document and provide the necessary feedback.
- County team to participate in the on-site review of the report specification document.
- County team to develop the remaining specifications for reports beyond those covered in Woolpert's specification document.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.2.2: Report and Metric Development

During this task, Woolpert will develop and deploy as many of the identified reports as possible within the allocated budget. Woolpert will deploy the reports and metrics via Cityworks Saved Queries, Cityworks Dashboards and KPIs, Cityworks Inboxes or custom-developed Crystal Reports. The reports will be reviewed with, and informally tested by, the County staff through a series of in-process development reviews. Woolpert will incorporate requested changes into the reports. The reports will be formally tested as part of the overall User Acceptance Testing efforts. In addition to reporting, Woolpert will work with the County Technical Teams to ensure that they know how the reports, dashboards and metrics were created such that they can create related items once the system is live.

In Track 1, Woolpert has primary responsibility for the development and deployment of the identified reports subject to allocated budget in WBS Task 4.2.1 for each of the nine (9) Divisions/groups.

Deliverables

- Woolpert to develop as many identified reports as possible within the allocated budgets in Track 1 and 2 from a prioritized list.
- Woolpert to facilitate periodic remote review and approvals of the reports in batches with the County team.
- Woolpert to provide guidance on industry standards, best practices, and recommended KPIs and metrics to be developed.
- Woolpert to provide a final list of the reports to be developed, which the County will accept and approved.

Assumptions

- All report development and review work will be performed remotely.
- Woolpert will work with the County on each reporting batch until final acceptance is received from the County. The estimate of number of hours/report/batch was based on one review session with feedback by the County. If the County requires more than one (1) review session/batch, there will be an impact on the number of batches completed within this task. As

an example, if Batches 1–3 consume more than one review cycle each, reports in Batches 5 and 6 may not be developed.

- County will provide a prioritize list of reports for Woolpert to author.

County Responsibilities

- County team to develop the remaining reports beyond those that can be developed by Woolpert within the time and budget constraints.
- County team to participate in the periodic remote review and approval of the reports in batches and provide the necessary feedback in both Tracks.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.3: System Integrations

The County has identified the following solutions (target systems) as existing County solutions that need to be integrated to the new Cityworks AMS during Tracks 1 and 2. NOTE: Woolpert understands that the County requires that the Esri GIS solution be a required integration. However, that integration will be configured on an ongoing basis as part of the *Phase 3: Core System Design and Configuration* tasks.

Track 1		
Data	Current Environment	Current System
ERP	Oracle 11g DB	Oracle eBusiness Suite R12.1.3 (OPUS)
ERP	Oracle 11g DB	SAP (CIS – Customer Information System, Hosted Solution)
CCTV	Oracle 10g	GraniteNet
Customer Requests		SeeClickFix

Track 2		
Data	Current Environment	Current System
SCADA		Wonderware
Spare Parts Inventory		NAPA TRACS
Fuel Management		Fleet Fuel System
Pavement Inspection		PAVER 7
Customer Requests		SeeClickFix

NOTE: During Track 2, a potential interface to support the Grainger Keepstock program used by PCR will be vetted as part of the onsite integration planning workshops. If an interface is deemed necessary by the County, it will be incorporated into the scoped deliverables via a Change Control Notice.

Woolpert’s technical approach to building the integrations will remain consistent for both Tracks, which involve the use of the County’s development environment to access the Software AG platform (Integration Server and WebMethods); use of a combination of elements including Flow and Java services, separate Web APIs, and a



JMS Messaging Provider as is determined to provide reasonable manageability for the County while providing necessary efficiency and reliability.

The Software AG integration platform will be used for all custom integrations; COTS integrations (GraniteNet, Paver, and SeeClickFix) will not use the Software AG platform.

The detail included in each of the descriptions below represents a preliminary expectation of integration effort based on a combination of Woolpert's understanding of the needs, data, and processes at the County, as well as our experience building similar integrations for other clients, and serves as a starting point for aligning expectations for all stakeholders. **As part of WBS 4.3.1 - System Integrations Planning, the requirements and technical specifications defined in this scope will be discussed, explored, refined and updated.** It is expected that the changes resulting from these requirements meetings will not represent a significant difference in the total estimated level of effort. If a significant variance is recognized, Woolpert and the County will collaboratively determine options for addressing anything that exceeds the original scope.

Oracle eBusiness Suite Vendors Integration: One-way

This will be a one-way integration going from Oracle into Cityworks. Vendors from Oracle will be pushed into Cityworks as both Contractors and Suppliers. Vendors that are no longer active in Oracle eBusiness Suite will be set to inactive in Cityworks.

The following Vendor information will be sent to Cityworks:

- Oracle eBusiness Suite Vendor ID
- Vendor Name
- Active status

Oracle eBusiness Suite and LDAP Employees Integration: One-way

This will be a one-way integration going from Oracle eBusiness Suite into Cityworks. Employees from Oracle and from LDAP will be pushed into Cityworks. Employees that are no longer active will be set to inactive in Cityworks. Employee internal and external rates will be calculated based on a multiplier applied at the division level, based on multipliers stored in configuration. Certain changes such as a new employee, or a change to employee title, department, division, or login name, will generate a service request for a Cityworks administrator to review the employee's permissions and settings within Cityworks.

The following Employee information will be sent to Cityworks:

- County employee ID
- Last name
- Middle initial (optional)
- First name
- Title
- Work phone
- Email
- Base rate, which will be used to calculate an Internal and External rate stored in Cityworks
- Cityworks Domain
- Department
- Division
- Source
- IsActive
- Last Update Date

GIS to SAP Integration: One-way

This will be a one-way integration going from ArcSDE into SAP. The integration will monitor for meters added to the GIS, and for meters that have been decommissioned. This integration will run nightly due the fact that it will be a resource-intensive process.

The following information is expected to be sent to SAP:

- Item number (Material number), or its component attributes
- Serial number
- Equipment category
- Manufacturer
- Construction Year
- Valid From date
- Register Group
- Inspection relevant
- Description

Assumptions:

- The integration will have access to a version of the meters table. Although the version may be dropped and recreated, the name will not change.
- Only meters will be handled via this integration.
- The County will work with the 3rd party vendor (Vertex) to ensure that the necessary APIs are available for receiving this data.

SAP Work Integration: Two-way

This will be a two-way integration linking SAP service notification (SVN) records and Cityworks service request and work order records. Information is expected to be shared across the systems at several trigger points:

- New SVN created in SAP
- New work order created in Cityworks
- Work order updated, closed, or cancelled in Cityworks

A list of service requests and work order types that will be handled by the integration need to be identified. Assets and specific data fields that will be handled will vary based on the work type, however common data fields that will be updated across systems include:

- Work type
- ID numbers (SVN/SR/WO)
- Description
- Category (preventive, corrective, predictive)
- Status
- Priority
- Location description
- Address
- Comments
- Personnel who initiated/assigned/performed work
- Asset information (e.g., meter or AMR identifier)
- Initiated date
- Projected Start date

- Projected finish date
- Actual start date
- Actual finish date
- Comments
- Instructions
- Account

Assumptions:

- The integration will have access to a version of the meters table. Although the version may be dropped and recreated, the name will not change.
- Only meters will be handled via this integration.
- The County will work with the 3rd party vendor (Vertex) to ensure that the necessary APIs are available for providing and receiving the necessary data.
- The County and Vertex are responsible for all data inserts into and extracts from SAP. An agreed-upon method for managing the handoff of this information with the County middleware will be developed.

GraniteNet

This will be a two-way integration between GraniteNet and Cityworks AMS software using a Commercial Off The Shelf (COTS) solution approach- Cityworks Software Module for GraniteNet or Cityworks' CCTV Interface.

Assumptions:

- The integration capabilities will be limited to the capabilities in the COTS integration components supplied by GraniteNet.
- Integration will not use the County middleware solution.

PAVER 7 (Moved to Track 2 due to incompatibility of Cityworks' PAVER Interface with County's PAVER version)

This will be a two-way integration between PAVER 7 and Cityworks AMS software using a Commercial Off The Shelf (COTS) solution approach- Cityworks' PAVER Interface. Note: Cityworks's current version 15.2 does not have the capability to interface with PAVER 7. It is expected that Cityworks will release an updated version 15.4 that will have the PAVER 7 interface capability. Azteca has not indicated the release date for 15.4. Since Track 1 will Go Live with 15.3, this COTS integration has been moved to Track 2. Once the County upgrades all Track 1 users to a PAVER compatible version of Cityworks post Go Live, Woolpert will consider the PAVER 7 integration along with other Track 2 integration tasks.

Assumptions:

- The integration capabilities will be limited to the capabilities in the COTS integration components supplied by Cityworks.
- Integration will not use the County middleware solution.

SeeClickFix

This will be a two-way integration between SeeClickFix and Cityworks AMS software using a Commercial Off The Shelf (COTS) solution approach.

Assumptions:

- The integration capabilities will be limited to the capabilities in the COTS integration components supplied by SeeClickFix.
- Integration will not use the County middleware solution.

Wonderware to Cityworks: One-way

NOTE 1: A SCADA integration can include the automatic creation of work orders in Cityworks based on SCADA warning and alarm messages. This type of integration is only successful if the messages are valid and justified. Many organization's SCADA systems are programmed to generate messages that are not actionable. They serve to alert operators of potential issues that never raise to the level of requiring human intervention. Automated work order creation for non-actionable messages are an unnecessary nuisance and can cause O&M personnel to ignore actionable SCADA-triggered work orders. Hence, they are not included in this integration at this time. If, during Discovery, these types of SCADA messages warrant auto-creation of work orders, Woolpert will provide recommendations on an approach to this integration requirement. If the integration is desired by the County, it will be incorporated into the scope via a Change Control Notice.

NOTE 2: A SCADA message will only create a work order in Cityworks, never a Service Request. Work orders should be assigned to an asset record, similar to the SCADA alarm, which monitors and generates messages for specific assets within the system.

This integration is scoped as a one-way integration going from Wonderware to Cityworks and will be executed on predetermined schedule (once a day, most likely nightly). Wonderware readings are captured in a historical equipment reading database. An integration will retrieve these equipment readings on a regular interval and send them to be recorded as readings in Cityworks through the Cityworks API (..\Reading\Add method). Cityworks out-of-the-box meter reading functionality will be configured for assets that will accept periodic readings through the interface and will generate work orders when the readings meet or exceed the thresholds configured for the asset within Cityworks.

A one-way integration will import values from the SCADA readings database to Cityworks. Information can include:

- Point Id
- Reading type
- Last reading value
- Notes

Assumptions:

- Full evaluation of all SCADA (Wonderware) functionality used by the County will be led by Woolpert
- The SCADA point id will match the asset id in GIS
- All readings are available in one reading database
- The County will manually update a table or file to indicate when SCADA devices are swapped, providing the fresh start reading
- The SCADA reading database supports retrieval of the information described here on a regular basis
- The county will obtain a license for the Cityworks Readings API

Fuel Management System: One-way

This will be a one-way integration going from Fuel Management System (FMS) to Cityworks and will be executed on predetermined schedule (once a day, most likely nightly). This integration will take mileage readings from FMS and record them in Cityworks through the Cityworks API (..\Reading\Add method) as readings associated with specific Cityworks asset (a vehicle). Readings will then be configured in Cityworks to create work orders or inspections based on the predetermined thresholds (for example every 3,000 miles oil change work order will be generated).

Grainger KeepStock (Vendor Managed Inventory)

A potential interface to support the Grainger Keepstock program used by PCR will be vetted. If that interface is deemed necessary by the County, it will be incorporated into the scoped deliverables via a Change Control Notice. The driver for this interface is to facilitate recording material charges for Grainger-supplied items on work orders.

A one-way integration will import values from the FMS to Cityworks. Information can include:

- Vehicle Id
- Reading type
- Last reading value
- Notes

Assumptions:

- The vehicle Id from FMS will match the asset Id in GIS
- All readings are available in one FMS database
- The County will manually update a table or file to indicate when readings are reset, providing the fresh start reading
- The FMS database supports retrieval of the information described here on a regular basis
- The county will obtain a license for the Cityworks Metrics API

NAPA TRACS – Costs Integration: One-way

This will be a one-way integration going from NAPA TRACS to Cityworks. Using the NAPA TRACS Accounting Link or other means, NAPA personnel will periodically export from NAPA TRACS information detailing the parts (materials) issued to work orders. The integration will retrieve this information and add the material items as costs on the work orders. The materials are added as Contractor Materials. Any parts that cannot be successfully added to a work order will be reported for manual review.

A one-way integration will import values from the NAPA TRACS to Cityworks. Information can include:

- Item Id/number
- Item description/stock number/account number
- Item quantity
- Item cost
- Date issued
- Issued by/name
- Issued from

Assumptions:

- NAPA TRACS Accounting Link information will include item number, description, cost, quantity, Cityworks work order ID, date issued, and name of person issued to and issued from
- NAPA TRACS Accounting Link can export information into a standard file format that can be consumed by the integration
- The County will be responsible for any licensing and management of the Accounting Link module or other customizations or configuration needed to NAPA TRACS
- Inventory of the materials used are not managed in Cityworks Storeroom; the integration will not update or sync their quantities in Cityworks Storeroom.
- The integration will run once a day (nightly).
- Cityworks work order number will be recoded in NAPA TRACS and will be associated with each material or part that needs to be recorded in Cityworks.

- Each NAPA TRACS record that needs to be processed will contain DateTime stamp that will be used to determine new transactions that need to be processed since that last integration run.
- Item returns will be managed through NAPA TRACS and integration will delete them from work order in Cityworks. It is assumed that when item is returned in NAPA TRACS, it is no longer associated with a work order or is somehow marked as being returned. This is required so that integration code can identify material or part that was returned.
- For work orders with multiple attached assets, the material quantity (and therefore the cost) will be evenly redistributed against all assets attached to the work order. NOTE: Cityworks does not allow for splitting the material so if material quantity cannot be equally redistributed, first attached asset will receive the portion of the leftover quantity/cost.
- The county will obtain a license for the Cityworks Extended Work order API

NAPA TRACS Analysis: Remote Inventory Management

Based on the information uncovered in the Departmental Readiness Assessment conducted as part of Phase 2: Integration Planning phase, there seems to be a lag in the time it takes to get information about parts issued in remote storerooms into the NAPA TRACS system. There may be solutions that could reduce the time it takes to get the information into NAPA TRACS, however, based on current understanding, the solution does not involve an integration built by Woolpert. A requirements-gathering workshop is required to discuss the issue, and then determine if there is a simple solution, such as through NAPA TRACS, Cityworks configuration, or using simple technologies such as email workflows. The output of such a workshop will be a recommendations document.

Assumptions:

- The County will provide a Subject Matter Expert familiar with the NAPA TRACS system and its capabilities for the discussion.

WBS Task 4.3.1: System Integration Planning

Woolpert will begin the planning task developing potential workflows for the integrations between Cityworks and each of the systems identified for integration in Tracks 1 and 2. The potential workflows will be based on Woolpert experience integrating Cityworks with these and similar software solutions for other clients and on discussions about these integrations during the *Phase 2: Integration Planning* phase. Woolpert will then facilitate on-site discussion with the data managers and stakeholders of each system. The discussion will be to formalize the expectations for the integrations. Woolpert will author a Software Requirement Specification (SRS) documents for each target system integration. Each SRS document will provide the following sections, as appropriate for the integration:

- Woolpert to facilitate remote reviews of the SRS documents with the County for no more than twenty-seven (27) hours; an average of three (3) hours per document.
- Woolpert to modify the SRS documents based on County feedback provided during the remote review session and submit FINAL versions to the County.

Assumptions

- Woolpert will develop integration components that extract data from, or insert data into, the Cityworks and Esri GIS software solutions.
- County Technical Team of third-party contractors will be responsible for developing the integration components that extract data from, or insert data into, software systems other than Cityworks and the Esri GIS.
- All 3rd party software has documented interface capabilities (flat file, interface tables, or web APIs) that support the necessary data exchange
- County Technical Team and business unit staff familiar with the target system will be available and attend each workshop; where County relies on external contractors as subject matter experts, such as Vertex Group for SAP CIS, County will ensure that these external experts attend, are prepared for and actively participate in the workshops.
- All comments and feedback on the SRS documents will be provided during the scheduled document review session. These comments will remain open until they are suitably addressed by Woolpert and accepted by the County. New comments and feedback received after that review session will be considered as enhancements and out of scope for the development effort. The Woolpert/County team will determine the best method for addressing these items.
- Workshops will be grouped to occur over the course of consecutive business days within a single business week (Monday – Friday).

County Responsibilities

- County to participate in pre-workshop discussions.
- County to secure an appropriate meeting facility for the on-site workshops and to coordinate and schedule workshop participants.
- Workshop participants shall actively participate in workshop activities without undue interruption.
- County to review the SRS documents prior to the joint review.
- County will accept the SRS document upon update after the remote review.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.3.2: System Integration Development and Testing

For each system integration development effort, Woolpert will perform the following tasks:

1. Coding

- a. Custom Integrations - Woolpert to develop integration components on County infrastructure in Software AG DEV environment for those interfaces that warrant use of the middleware. **NOTE:** For integrations that require use of the middleware, integration components that insert data into or extract data from systems other than Cityworks and Esri will be developed by the County or third-

party consultants contracted by the County. For clarity and unless otherwise noted, integration components will be referred to a Woolpert-developed (Cityworks and Esri inserts and extracts) and County-developed (inserts and extracts for softwares other than Cityworks and Esri).

- b. COTS integrations – PAVER, GraniteNet, and SeeClickFix will not be developed in the County’s middleware. No County-developed integration components are expected.

2. Deployment and Testing

- a. Woolpert to create and test installers, installation scripts, etc. to deploy the Woolpert-developed integration components on County infrastructure in Software AG TEST environment. During this time, County should create similar items for County-developed integrations.
- b. Woolpert to support County integration testing Round 1.
- c. Woolpert to modify the Woolpert-developed integration components on County DEV infrastructure, as appropriate. Woolpert to update the Integration SRS documents, as appropriate. During this time, County will modify County-developed integration components on County infrastructure, as appropriate.
- d. Woolpert to re-deploy Woolpert-developed integration components from the DEV to the TEST County environment. During this time, County should re-deploy County-developed integration components, as appropriate.
- e. Woolpert to support County integration testing Round 2. Round 2 component testing will address bugs identified in Round 1.
- f. Woolpert to modify integration components on County infrastructure, as appropriate. Woolpert to update the Integration SRS documents, as appropriate. During this time, County will modify integration components on County infrastructure, as appropriate.
- g. Woolpert to support County integration testing Round 3. Round 3 component testing will test that the full integration, data flowing out of the source system and into the target system, functions successfully.
- h. Prior to End User Training (EUT), Woolpert will deploy the Woolpert-developed integration components in the environment that will be used for EUT. County will deploy the County-developed integration components in the same environment.

1. Go-Live Planning

- a. Woolpert will work with the County to develop a rollout plan and provide production deployment support.
- b. Prior to Go-Live, Woolpert will assist County IT in deploying the Woolpert-developed integration components in the environment that will be used for Go-Live. County will deploy the County-developed integration components in the same environment.

Deliverables

- Woolpert to develop and iteratively test, with participation from the County team, the integration components for each system interface.
- Woolpert to update the Integration SRS documents as appropriate based on the learnings from the development efforts.
- Woolpert to develop Draft and Final versions of the Integration Administrator’s Guide.

- Woolpert to develop integration installers and supporting scripts.

Assumptions

- All tasks will be performed remotely.
- The County is responsible for working with 3rd party software vendors to ensure that any configuration necessary to support the integration is tested by the vendor. The County will provide evidence of successful testing prior to Integration Acceptance Testing (IAT).
- The County will coordinate with the 3rd party software vendor for support during testing (IAT).
- Any necessary Cityworks configuration to support the integration will be coordinated with and performed prior to UAT Testing.
- Once an SRS has been approved by the County, any requested changes that add a new, or change an approved integration requirement as defined in the SRS document will be considered an enhancement and out of the development scope of work. The Woolpert/County team will collectively determine how to handle the requirement.
- The County is responsible for the maintenance and administration of the systems and architecture supporting the integrations, including Software AG WebMethods Integration Server and the County's chosen JMS messaging provider.
- The County will provide development workstations with access to all necessary software.
- The County will provide Woolpert with access to source control tool that allows Comparing and Merging code. Lack of access to this tool could lead to loss of work and duplicated effort resulting in schedule and cost delays.
- GIS readiness responsibilities are defined in Phase 8.

County Responsibilities

- County will develop a suitable testing environment that includes a testing version of all the source and target software solutions. The environment should include, at a minimum, Cityworks, Esri, OPUS, SAP, SeeClickFix, PAVER 7, GraniteNet, Wonderware, Fuel Management System, NAPA and TRACS. The testing environment should match, as closely as possible, all aspects of these systems' production environments, including, but not limited to, server specifications, project version, network architecture (firewalls, switches, security, etc.), system configuration, etc., and a recent version of the production database should be restored to each testing system prior to testing activities.
- County to be responsible for the development of the integration components as identified during the previous task.
- County Technical Team to actively participate in the testing sessions of the integration components.
- County Technical Team to identify Lead Integration Administrator for each integration (can be same or different people for each integration) who will be responsible for installing, configuring, and managing the integration under the direction of the Woolpert Lead Integration Developer.
- County to identify Integration Testing Team to develop Integration Acceptance Test Scripts, conduct testing, and document results.
- County will license the necessary Cityworks APIs (Metrics, Inspections, Work Order – Advanced, etc.).
- County to review the SRS documents prior to the joint review.



- County will accept the SRS document upon update after the remote review and verification by the County that updates accurately reflect County feedback and comments have been addressed.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 4.4: Phase 4 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 4 tasks, activities and deliverables.

WBS Task 4.5: Phase 4 Acceptance and Close

This is the Phase exit document that County signs indicating Woolpert has delivered the Advanced Functionality Phase in accordance with the Scope of Work and Project Plan.

Phase 5 – System Deployment



Once the Cityworks solution has been configured and the advanced functionality items deployed, Woolpert will lead the County Implementation Team through a series of related deployment tasks that will ensure a fully tested and accepted solution, as well as a County team of fully trained system administrators and end users who are ready to put the system to use daily.



Woolpert recognizes that there will be approximately 545 stakeholders in Track 1 and 506 in Track 2 in the system once it is fully utilized by all planned users in their respective tracks. To reduce risk associated with Go-Live, Woolpert will perform two distinct Go-Live efforts, one for the Public Works divisions and one for the Utilities divisions in Track 1 and five distinct Go-Live efforts in Track 2 for divisions within each of the five participating departments plus a separate one for the REM department’s Fleet division.

Woolpert will develop a thorough Testing and Acceptance Plan (TAP) for all aspects of the new system. The TAP documents entry and exit criteria for User Acceptance Testing (UAT). The test plan (an accompanying document to the TAP) is designed to step the testers through the configured solution and ensure that all the configurations meet the specifications defined by the business. The Test Plan as well as the Testing and Acceptance Plan will be developed with assistance and input from the County team and then submitted to the County for review and acceptance.

Following acceptance of the UAT planning documents, Woolpert will facilitate on-site Tester Training sessions.

In Track 1, Woolpert will be responsible for tasks and activities related to preparing the UAT Planning and on-site testing. In Track 2, UAT Planning will be the sole responsibility of the County whereas on-site testing will be equally shared by the County and Woolpert.

Woolpert will follow a structured End User Training (EUT) program and develop the following training materials to support End User Training activities:

1. Training Videos
2. Training Class Plans and Handout Materials
3. Training Class Assessments

**Key Enterprise System Deployment
(Phase 5) Deliverables**

- UAT Planning Documents
- User Acceptance Testing
- End User Training
- Go-Live Support

Woolpert will provide a Training Curriculum that describes the training classes, pre-requisites for each class, intended audience, learning objectives, etc. Logistical details about the training itself will be developed closer to delivery of these services and included as an addendum to the training curriculum.

Training Videos

Woolpert will create video tutorials for common work steps that will be performed by many end-users. The goal is for the County to have a repository of supplementary training videos that illustrate functions that will need to be reinforced to existing staff and while onboarding new staff. These videos will also serve as a supplement to on-site End User Training reinforcement activities. A sample list of Training Videos may include the tutorials listed in the table below.



Training Video Library		
<ul style="list-style-type: none"> • Navigating the user interface • Using the Inbox • Using the map 1 - Navigation • Using the Map 2 – Working with layers • Using the Map 3 – Locating an address or intersection • Using the Map 4 – Creating and using Bookmarks • Using the Map X – Whichever other tools are relevant to Pinellas Co • Creating a service request 	<ul style="list-style-type: none"> • Working with service request search results • Creating a saved service request search • Creating an unattached work order • Creating an attached work order • Creating a work order from a service request • Creating a child work order • Searching for work orders • Creating a saved work order search • Searching for service requests 	<ul style="list-style-type: none"> • Working with work order search results • Creating an unattached inspection • Creating an attached inspection • Creating an inspection from a work order • Searching for inspection • Creating a saved inspection search • Working with inspection search results

A sample Training Video that Woolpert has created on “[Using the Quick Search Tool in GIS Viewer](#)” is available on the Woolpert iMeet site created for this project.

Majority of the Training Videos will be created in Track 1. Track 2 implementation may warrant creation of some additional videos to supplement those that were created in Track 1. Woolpert and the County will collectively agree and prioritize the topics for these videos to be created in Tracks 1 and 2 within the allocated budget.

Training Class Plans and Handout Materials

Once the training classes have been identified, class plans will be developed to summarize the objectives, target audience, and key concepts/system functions that will be taught. A sample list of Training classes will include the following:

1. *System/Domain Administrator Training* – Administration training is designed for those individuals who after go-live will maintain the system with updates, additions, deletions, security management, and system troubleshooting. These individuals are identified prior to configuration workshop rounds. Cityworks Administrator training consists of the Cityworks Designer Module. This is a thorough training of all components applicable to the County for system administrators
2. *AMS A & B* – End User Training for work management includes training of the inbox, map, service request, work order, and inspection modules of the Cityworks AMS end-user product. This training is designed for all users who will require access to Cityworks to perform their daily job functions. This end-user training is a slower paced training course and allows the Woolpert trainer and the training room proctor (Woolpert or County team member) to manage the room and attend to the participants’ learning pace appropriately.
3. *Reporting/Dashboard Training* – End User Training for reporting, and dashboards is designed for County staff interested in pulling information from Cityworks rather than the day-to-day use of Cityworks. Topics



include learning how to create saved searches and add them to the map (event layers), create charts and graphs from searches, run reports, etc.



4. *Storeroom Admin/Transaction Training* – Storeroom training is for the Warehouse staff to learn and understand how the Storeroom module functions. This training is designed for all users who will require access to Cityworks Storeroom to perform their daily job functions. This end-user training is a slower paced training course and allows the training room proctor (Woolpert or County team member) to manage the room and attend to the participants’ learning pace appropriately.

Customized hand out materials/slide decks/demos for each Division/group will be developed for use and distribution during the training classes. For example, AMS A Training class will have identical structure and topics throughout Tracks 1 and 2. However, end users from respective division/groups will work within their Department’s Cityworks domain during training and handouts/demo will refer to their division’s assets, workflows, and maps where possible.

Training Class Assessments

Trainee assessment questionnaires will be used to gauge the readiness of each trainee for system use in a production environment. The objective of the in-class self-assessment is to quickly gage the effectiveness of the training and offer the opportunity for reinforcement training prior to Go Live.

Woolpert will develop electronic assessment forms customized to the content of the Training Class. The forms will be created in Cityworks itself where the users will be required to take the assessment before logging off at the end of their training class. Woolpert will develop a method to query the assessment results once they are submitted by the end users and display it instantly for the Woolpert Trainer/Classroom Proctor and County Project/Core Team members. This exercise is expected to help instantly identify those end users that may need follow up reinforcement training and facilitate scheduling of a follow up class to be offered during the same week or the next.

TRACK 1 END USER TRAINING (EUT)

ASSET MANAGEMENT PROGRAM / CITYWORK IMPLEMENTATION

ASSET MANAGEMENT SYSTEM CLASS A (AMS A) SYLLABUS

Training Class: AMS A	Department: Public Works
Class Limit: 20	Division/group: Mosquito Control & Vegetation Management
Audience: End Users	

Prerequisites
This class is targeted towards end users with *low to medium technical skills* – users who will perform job functions that will require updates within the Cityworks AMS application. Users are expected to have basic computer skills such as word processing, email, and accessing the internet.

Objective(s)
To provide the end users with an overview of the Cityworks AMS application and familiarize them with key elements of the application that they will use to perform their daily job function.

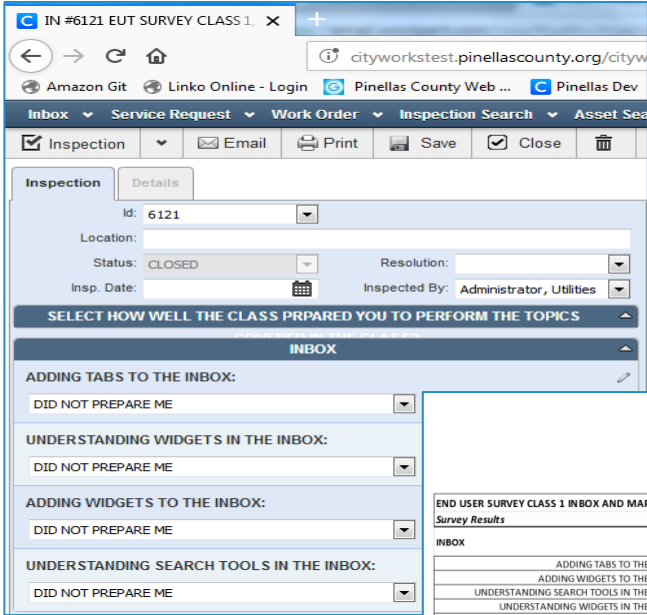
Description
End User Training Class ‘AMS A’ includes overview of Cityworks AMS – orientation and navigation, training on how to use the inbox, map, and service request functionality within the Public Works Domain of the Cityworks AMS application. This training is designed for all Public Works users from Mosquito Control and Vegetation Management Division who will require access to Cityworks to perform their daily job functions. This end-user training is a slower paced training course and allows the Woolpert trainer and the Woolpert proctor to manage the room and attend to the participants’ learning pace appropriately. This training class is organized as follows -

Duration	Description
2 hours	Overview of Cityworks AMS – This session trains users how to navigate through the application, use the Inbox, Map, and Saved Searches.
2 hours	Service Request Training – Training users how to create new service requests, updating information on the service request and searching for existing requests

Training Outcome(s)
End users should be able to perform the following activities with acceptable proficiency

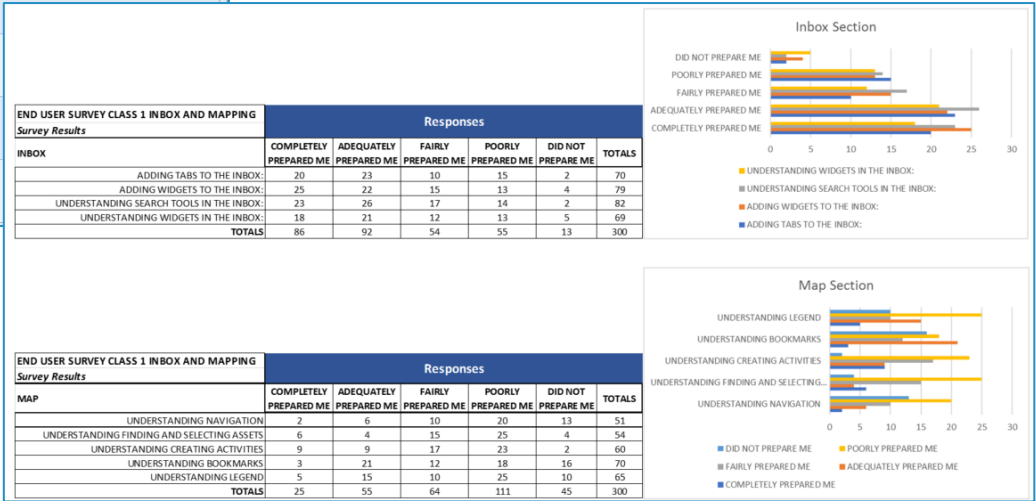
1. Login to Cityworks AMS and navigate through the application
2. Recognize elements in the Inbox and how to use information available in the Inbox
3. Launch a Map within Cityworks AMS and locate their assets
4. Create new service requests, search for existing service requests, and update information on existing requests





All training materials will be developed in conjunction with the County’s input and feedback. Two scheduled reviews of training materials (Interim and Final) will provide formal feedback. However, it is expected that informal reviews of the materials prior to Final review will also be a normal part of material development process. A final, formal review and acceptance of the training materials will be conducted to ensure both Woolpert and County personnel are fully aligned with the materials.

End User Training will be scheduled and delivered immediately prior to the Go-Live activities to ensure system administrators and end users are prepared to adopt and embrace the new technology solution right out of the gate. With a user community as large as the ones in both implementation tracks, all training for end users within the same department will occur within one (1) month prior to Go-Live for that Department. To accomplish training the number of users involved in both implementation tracks, Woolpert expects that County Core and Implementation Team members will be heavily involved as Proctors in the classroom training.



Prior to User Acceptance Testing, End User Training and Go-Live activities, Woolpert and the County system administrators will construct and/or validate that the appropriate environments are established for each set of activities. Ensuring that the appropriate environments exist will be a shared responsibility. Requirements prior to each activity include ensuring that the necessary test versions of each system are properly installed and configured for the system integrations, performing all Cityworks database configurations, migrating legacy data, and installing integration components.

Woolpert will support the Go-Live activities for two (2) distinct waves; one for the Public Works divisions and one for the Utilities divisions in Track 1.

Woolpert will support the Go-Live activities for five (5) distinct waves; one each for Utilities, Real Estate Management, Fleet, Solid Waste, and one combined for Parks Conversation and Resources and Public Works divisions in Track 2.



WBS Task 5.1: Test Plans

The focus of system testing efforts is to thoroughly test the newly installed/configured Cityworks AMS solution and ensure all global and application workflows and configuration templates (SR/WO/Inspection) are functioning properly.

Woolpert will take the lead on developing a Testing and Acceptance Plan and a Test Plan (collectively referred to as “UAT Planning documents” henceforth) in Track 1. This will be a County owned responsibility in Track 2. Woolpert will facilitate one (1) week of on-site workshops in Track 1 with the involved divisions to collectively define the test plans. UAT Planning documents will derive their focus from the previously prepared AMS system configuration documents, business process workflows, user rights and permissions defined in the global configuration workshops. Test scenarios designed to step testers through the UAT process will be developed as part of this plan. Final plan contents will be a combination of configuration element testing and scenario-based scripts that will allow users to test real situations utilizing the software.

Woolpert will submit a draft version of the UAT Planning documents for County review. Woolpert will facilitate a joint review of these documents. Woolpert will make the requested updates to the UAT Planning document and resubmit the documents in their final version. Actual UAT will only begin after the County accepts the UAT Planning documents.

The County will take on all UAT Planning documentation development in Track 2.

Deliverables

- Woolpert will facilitate up to five (5) days of on-site workshop with the County implementation team to identify the test plan requirements/components. It is estimated that Divisions/groups within Utilities and Public Works will require one and a half (1.5) and two and a half (2.5) days of workshops, respectively, in Track 1. However, the workshop days can be reallocated as necessary if it is believed that some groups will require additional (or less) time to define their testing requirements.
- Woolpert will develop the test plans as defined in the workshops in Track 1.
- Woolpert will facilitate one remote review meeting with the County Testing Team for up to four (4) hours in duration in Track 1.
- Woolpert will update the UAT Planning documents per the results of the review meeting and re-submit the final version to the County in Track 1.

Assumptions

- Test plan collaborative workshops will be conducted over the course of one (1) business week in both Tracks, Monday – Friday.
- UAT is testing for system configuration only. Integration, Migration and Reporting Testing is handled separately.
- Woolpert will have no involvement in the development of these materials or in executing this task (WBS Task 5.1) in Track 2.

County Responsibilities

- County testing team will attend and actively participate in the appropriate Test Plan development workshops.

- County testing team will participate in the remote reviews of the UAT plans.
- County testing team will accept the UAT Planning documents.
- County will take full ownership of this task (WBS Task 5.1) in Track 2.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 5.2: User Acceptance Testing (UAT)

Woolpert and County team members will ensure that an appropriate UAT environment exists prior to UAT activities. The specifications of the UAT environment will be determined provided in the UAT Planning documents, however, it is expected that the environment will contain:

1. All of the Cityworks configurations and customizations that will be included in the production environment.
2. A copy of the production GIS.

Once the UAT environment is established, there are two (2) main components to UAT; tester training and user acceptance testing. It will be the responsibility of the County to select a Testing Team consisting of implementation team members, future end-users and application support staff who will execute the testing of the newly configured Cityworks solution and other items associated with the enterprise Cityworks AMS solution.

To effectively test the system in accordance with the Test Plans, training will be provided to the testing team. The training will take place over four (4) days for Track 1 and five (5) days for Track 2; each within a single business week. In Track 1, Tester training has been estimated as two (2) days for each of the Utilities and Public Works testers, but the actual use of the four days of tester training will be determined by the Woolpert/County project team closer to the scheduled date of testing. Similarly, in Track 2, Tester training has been estimated as one (1) day each for Utilities, REM, PCR, Solid Waste, and Public Works testers, but the actual use of the five days of tester training will be determined by the Woolpert/County project team closer to the scheduled date of testing.

During the tester training, Woolpert will instruct the testers how to read the test scripts, how to record a test scenario as Pass or Fail, what to do when they think they find an error, and the information they must record to ensure that the error can be recreated. Woolpert will instruct the testers how to process work transactions including, but not limited to, Service Requests, Work Orders and Inspections. **This instruction will not include the additional context that end users receive during end user training, only enough direction to complete the testing tasks.** Woolpert will instruct the testers how to process inventory and replenishment transactions, including, but not limited to, low-stock and ad-hoc replenishment requisitions, receiving materials into stock, and transferring/issuing materials between storerooms and to work orders. **This instruction will not include the additional context that end users receive during training, only enough direction to complete the testing tasks.**

Once all testers have been trained, the County testing groups will, one-by-one, execute the UAT test scenarios defined within the plan in the designated Cityworks testing environment. There will be two rounds on on-site testing activities in both Tracks 1 and 2. In Track 1, each round will be 1 week of on-site testing support; a total of 2 on-site weeks. In Track 2 each round will be 3 weeks of on-site testing support, a total of 6 on-site weeks. Most of the required corrections will be completed while Woolpert is on-site and the County testing team can retest immediately. Failed test scenarios that require additional time to correct will be completed remotely and retested during subsequent testing sessions or via a WebEx meeting.

All test scenarios will be marked as either “pass” or “fail” with appropriate notes and screen shots provided to Woolpert for resolution. Testing and related configuration updates will continue until acceptable performance is achieved as defined within the Test Plan.

Deliverables

- Woolpert to develop all tester training materials in Track 1.
- Woolpert and County to share tester training material development effort in Track 2.
- Woolpert and County to jointly prepare the UAT environment.
- Woolpert will provide up to four (4) days of tester training in Track 1. Tester training has been estimated as two (2) days for each of the Utilities and Public Works testers. However, the actual use of the four days of tester training will be determined by the Woolpert/County project team closer to the scheduled date of testing.
- Woolpert will provide up to five (5) days of tester training in Track 2. Tester training in this track has been estimated as one (1) day each for Utilities, REM (including Fleet), PCR, Solid Waste, and Public Works testers, but the actual use of the five days of tester training will be determined by the Woolpert/County project team closer to the scheduled date of testing.
- Woolpert will provide up to five (5) days during each of the two rounds of system testing in Track 1. Each 5-day round to be completed during a single business week. Woolpert on-site testing support for all Utilities Divisions/groups will be scheduled over two (2) days during the week and on-site testing support for all Public Works Divisions/groups will be scheduled over a different two (2) days within the week. For the fifth day in the week, the Woolpert/County team will determine where to staff Woolpert support. The Woolpert/County project team can reallocate Woolpert’s on-site testing support resource, as necessary, to deliver testing support as the team deems most appropriate.

Both Round 1 and Round 2 on-site testing support are currently scoped as follows:

- Utilities Divisions/Groups2 days/16 hours
- Public Works Divisions/Groups2 days/16 hours
- Overflow Testing Time (used at PMs’ discretion)1 days/8 hours

- Woolpert will provide up to fifteen (15) days for each of the two rounds of system testing in Track 2 over three (3) business weeks. Testing activities for all Divisions/groups in each of the five departments are scheduled such that they do not overlap. For example, all Solid Waste Division/groups are scheduled to go through UAT with Woolpert on-site support over a single two (2) day period. Subsequent Track 2 Division/groups will test over other 1 or 2 day spans during which time the remaining Division/groups will not perform testing with Woolpert support. The Woolpert/County project team can reallocate these days, as necessary, to deliver testing support as the team deems most appropriate.

The three-week breakdown for both Round 1 and Round 2 testing support are currently scoped as follows:

Week 1 UAT

- Utilities and Solid Waste Divisions/Groups2 days/16 hours
- REM Divisions/Groups2 days/16 hours
- Overflow Testing Time (used at PMs’ discretion).....1 days/8 hours

Week 2 UAT

- REM Divisions/Groups2 days/16 hours



- PCR Divisions/Groups2 days/16 hours
- Overflow Testing Time (used at PMS’ discretion).....1 days/8 hours

Week 3 UAT

- PCR Divisions/Groups2 days/16 hours
 - PW Divisions/Groups2 days/16 hours
 - Overflow Testing Time (used at PMS’ discretion).....1 days/8 hours
- Woolpert will make the necessary updates to the Cityworks AMS Configuration, Cityworks AMS Configuration Document, System Integrations and System Integration Documents where testing results show a deviation from the documented requirements.

Assumptions

- All on-site Tester Training activities will occur within a single business week (Monday – Friday) in both Track 1 and Track 2.
- All on-site Testing Support for Round 1 will occur within one business week (Monday – Friday) in Track 1 and three business weeks in Track 2.
- All on-site Testing Support for Round 2 will occur within one business week (Monday – Friday) in Track 1 and three business weeks in Track 2.
- County will ensure the key team members are available to support the testing updates.
- All defects (“fail” scenarios) will be catalogued and prioritized to be addressed either before Go Live or post Go Live. Prioritization criteria will be defined in the Testing and Acceptance Plan document.
- In some instances, defects that cannot be corrected and successfully retested during the on-site testing periods will be corrected remotely and validated by the County testers during a WebEx demonstration. Woolpert or County team members will retest the failed scenarios and the County will provide acceptance of the fix. This applies only to those defects that are categorized as ones that need to be addressed before Go Live.

County Responsibilities

- Participate in the preparation of the UAT environment.
- Assume full ownership of UAT Planning documentation in Track 2.
- Provide one (1) lead resource to share the level of effort with Woolpert UAT Lead for on-site testing in Track 2.
- Ensure that the appropriate testers attend the tester training and user testing activities. Testers will include users in systems integrated in Track 1 and 2.
- Distribute training materials to the County testing team prior to the scheduled training sessions.
- Secure appropriate training facilities and schedule/ensure that trainees attend sessions.
- Schedule and accommodate the appropriate County testing team members such that they are available, without undue interruption, for the required number of days.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.



WBS Task 5.3: End-User Training (EUT)

Woolpert and County team members will ensure that an appropriate EUT environment exists prior to EUT activities. The specifications of the EUT environment will be determined when the team is preparing for EUT activities, however, it is expected that the environment will contain:

1. All of the Cityworks configurations and customizations that will be included in the production environment.
2. A copy of the production GIS.
3. All legacy data migrated per the migration task.
4. A working version of all system interfaces with test versions of those target systems.

Once the EUT environment is established, there are two (2) main components to EUT; 1) development of training materials and 2) delivery of end user training. The Woolpert/County team will collectively identify the complete list of roles configured in Cityworks/Global Workflows at the outset of this task. The team will determine the duration of the training effort, number of classes required to train each group, general overview of class content, timing of training relative to Go-Live (e.g., 1 week before, 2 weeks before), and criteria for self-assessment. The Woolpert/County team will develop a complete list of supplementary training videos, classroom plans, trainee assessments, and classroom training materials.

Once this complete list is agreed-upon, Woolpert will take the lead in developing all training materials within allocated budget in both Tracks. County team's direct involvement in the development of materials, if any, will be determined once the complete list of materials is known. At a minimum, County team will provide periodic review and feedback of the training materials. County reviews of training materials are scoped twice (interim and final) through the development process but can be performed more or less frequently as determined by the project team. County will provide formal acceptance for all materials prior to beginning end user training.

Woolpert will provide up to six (6) weeks of on-site end user training in each Tracks. In Track 1, on-site weeks 1, 2, 4, and 5 will consist of up to forty (40) hours of training time from two (2) Woolpert trainers, each leading a training session and each supported by one (1) County team member as Proctor. Weeks 3 and 6 are Reinforcement Training weeks consisting of up to twenty-four (24) hours of training time from two (2) Woolpert trainers, each leading a training session and each supported by one (1) County team member as Proctor.

In Track 2, first four on-site weeks will consist of up to forty (40) hours of training time from one (1) Woolpert trainer and one (1) County trainer each leading a training session and each supported by one (1) County team member as Proctor. The fifth on-site week will consist of up to sixteen (16) hours of training time from one (1) Woolpert trainer and one (1) County trainer each leading a training session and each supported by one (1) County team member as Proctor. The sixth on-site week will consist of up to thirty-two (32) hours of training time from one (1) Woolpert trainer and one (1) County trainer each leading a training session and each supported by one (1) County team member as Proctor.

A training class is run by one trainer and assisted by a second. Maximum class size is assumed at 20 participants. In Track 1, the County will staff a second trainer/Proctor in each class allowing the two (2) Woolpert trainers to offer two classes simultaneously. Estimated training hours (assumes 2 Woolpert trainers each supported by one County trainer in each class in Track 1 and only one Woolpert trainer in Track 2) are shown in the following table. The actual training schedule will be determined when this task is executed. To optimize the duration of EUT and accommodate the number of stakeholder in each Department/Division/group within the constraints of a class size of 20, classes are designed to run currently in 4-hour blocks of time.

Below is a breakdown of the planned training courses to be led by Woolpert.

Track 1 → Week 1 & 2 → Public Works (5 Days)

1. AMS A → eight 4-hour classes → 2 classes running concurrently..... 2 Days
2. AMS B → eight 4-hour classes → 2 classes running concurrently..... 2 Days
3. System Administration → two 4-hour classes 0.5 Days
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Days

Track 1 → Week 3 → Public Works Reinforcement (3 Days)

1. AMS A → four 4-hour classes → 2 classes running concurrently1 Day
2. AMS B → four 4-hour classes → 2 classes running concurrently 1 Day
3. System Administration → two 4-hour classes 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Day

Track 1 → Week 4 & 5 → Utilities (5 Days)

1. AMS A → eight 4-hour classes → 2 classes running concurrently..... 2 Days
2. AMS B → eight 4-hour classes → 2 classes running concurrently..... 2 Days
3. System Administration → two 4-hour classes 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Day

Track 1 → Week 6 → Utilities Reinforcement (3 Days)

1. AMS A → four 4-hour classes → 2 classes running concurrently1 Day
2. AMS B → four 4-hour classes → 2 classes running concurrently 1 Day
3. System Administration → two 4-hour classes 0.5 Day
1. Storeroom Transaction/Admin → two 4-hour class 0.5 Day

Track 2 → Week 1 → Utilities Plant Operations

1. AMS A → five 4-hour classes → 2 classes running concurrently1.5 Days
2. AMS B → five 4-hour classes → 2 classes running concurrently1.5 Days
3. System Administration → one 4-hour class 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Day
5. AMS A (Reinforcement)→ three 4-hour classes → running concurrently..... 0.5 Day
6. AMS B (Reinforcement)→ three 4-hour classes → running concurrently..... 0.5 Day

Track 2 → Week 2 → PCR

1. AMS A → eight 4-hour classes → 2 classes running concurrently..... 2 Days
2. AMS B → eight 4-hour classes → 2 classes running concurrently..... 2 Days
3. System Administration → one 4-hour class 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Day

Track 2 → Week 3 → PCR & Public Works

1. AMS A → two 4-hour classes → 2 classes running concurrently..... 0.5 Day
2. AMS B → two 4-hour classes → 2 classes running concurrently..... 0.5 Day
3. System Administration → one 4-hour class 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour classes..... 0.5 Day
5. AMS A (Reinforcement)→ six 4-hour classes running concurrently1.5 Days
6. AMS B (Reinforcement)→ six 4-hour classes running concurrently 1.5 Days



Track 2 → Week 4 → REM

1. AMS A → seven 4-hour classes → 2 classes running concurrently 1.75 Days
2. AMS B → seven 4-hour classes → 2 classes running concurrently..... 1.75 Days
3. System Administration → one 4-hour classes 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour class 0.5 Day
5. AMS A (Reinforcement)→ one 4-hour class runs concurrently with Sys Admin 0.5 Day
6. AMS B (Reinforcement)→ two 4-hour classes running concurrently 0.5 Day

Track 2 → Week 5 → REM Reinforcement

1. AMS A (Reinforcement)→ four 4-hour classes running concurrently 1 Day
2. AMS B (Reinforcement)→ four 4-hour classes running concurrently 1 Day

Track 2 → Week 6 → Solid Waste

1. AMS A → four 4-hour classes → 2 classes running concurrently 1 Day
2. AMS B → four 4-hour classes → 2 classes running concurrently 1 Day
3. System Administration → one 4-hour class 0.5 Day
4. Storeroom Transaction/Admin → two 4-hour class 0.5 Day
5. AMS A (Reinforcement)→ two 4-hour class → running concurrently..... 0.5 Day
6. AMS B (Reinforcement)→ two 4-hour classes → running concurrently 0.5 Day

Each class will be facilitated on-site at County identified training facility.

Deliverables

- Woolpert will develop a maximum of twenty-four (24) training videos in Track 1 and twelve (12) additional videos in Track 2 from a prioritized list agreed to by Woolpert and the County, duration of each video not to exceed 5 minutes.
- For each class, Woolpert will develop an Agenda, Syllabus and required custom training materials (manuals, quick reference guides, etc.) to support the class.
- Woolpert will facilitate two (2) formal reviews (interim and final) of the training materials. Woolpert may request ad-hoc reviews with County team between formal review sessions.
- Woolpert to support preparation of the EUT environment.
- Woolpert will provide two (2) analyst resources on-site for up to one hundred and ninety-two (192) hours each for End User Training in Track 1.
- Woolpert will provide one (1) analyst resource on-site for up to two hundred and eight (208) hours for End User Training in Track 2.

Assumptions

- Training will occur over six (6) business weeks (Monday – Friday). Training weeks may not be consecutive.
- Training materials will not be edited after final approval.
- Each class will be facilitated by two Woolpert trainers in Track 1 and one Woolpert trainer in Track 2.
- County has adequate training facilities that can accommodate the number of staff to be trained in the classes identified within this scope of services.



- County trainers will be staff members who have been involved with the project in a capacity that has allowed them to learn system configuration and use through their assigned role. Their participation in user training activities will not be their first introduction to the software. Upon completion of the scoped training, County trainers, who either led or supported the Woolpert-supported training classes, will be able to further train their end-users (with minimal or no support from Woolpert) if additional follow up training is required above and beyond the scoped Reinforcement training.

County Responsibilities

- Co-develop the list of County roles to be trained and details of each training class. Participate in the development of training materials as determined at that time.
- Participate in the formally-scheduled and ad-hoc training material reviews.
- Participate in the preparation of the EUT environment.
- Secure an appropriate training facility.
- Coordinate and schedule training participants.
- Participate in the training classes, as appropriate. County must provide a Trainer in Track 2 that can describe the integrations to other business systems where applicable to a training class.
- Provide hard-copies of training materials, as appropriate.
- Administer training surveys and ensure that trainees provide the requested feedback in addition to the in-class assessments planned in this scope.
- Ensure that training participants actively participate in training activities.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 5.4: Provide Go-Live Support

Woolpert and County team members will ensure that the production version of the Go-Live environment exists prior to Go-Live activities. The Go-Live environment will contain:

1. All the Cityworks configurations and customizations that will be included in the production environment.
2. A connection to the production GIS.
3. All legacy data migrated per the migration task.
4. A working version of all system interfaces with production versions of those target systems.

During Go-Live support in both Tracks, two Woolpert analyst resources will be on-site to support County end-users and system administrators as they encounter the typical issues associated with any Go-Live. As the issues subside, Woolpert will work with individuals, typically system administrators and heavy users who want to get more out of their new solution, to provide additional coaching and supplemental training services, on an as-needed and as-available basis. Go-Live week is also a time where known tasks that were identified after the configuration was 'frozen' can be executed to 'catch the system up' based on the defect prioritization scheme as discussed in the UAT section of this scope. For example, if additional employees, materials or equipment were identified after the cutoff point for new data, the System Administrator would load these items during the Go-Live week so that, if they were to run into issues, the on-site Woolpert resource could provide immediate assistance. Beyond the on-site go-live support, Woolpert has scoped remote go-live support for a period to time. During this time, the Woolpert team will ensure their availability remotely to work through with any lingering issues.

For Track 1, Go-Live has been scoped in two waves; one for Public Works and one for Utilities. The effort to develop the production-worthy environment will be performed only once. All other tasks will be performed once for each Go-Live effort. The Public Works Go-Live will immediately follow Week #3 of the Public Works Reinforcement End User Training. This is designed to swiftly facilitate the end users in Public Works, who were put through End User Training, to apply the learning in their daily function by giving them access to a live production version of Cityworks AMS. The same process occurs for Utilities as well, Go Live follows Week # 6 of the Utilities Reinforcement End User Training.

In Track 2, Go-Live has been scoped in five waves; one each for Utilities, REM, Fleet, Solid Waste and one wave for PCR and Public Works combined. Like Track 1, each Department's Go-Live wave immediately follows the End User Training imparted for Division/groups belonging to that department.

Deliverables

- Woolpert will support deployment of Cityworks AMS into the Production environment for each wave.
- Woolpert to provide on-site support for up to forty (40) hours each for two Analysts to support the Go-Live activities for each Go-Live week in Tracks 1 and 2.
- In Track 1, Woolpert will provide up to one hundred (100) hours of remote post go-live support immediately following the on-site go-live support, hours begin immediately after completion of the on-site support for first go-live support wave and all hours to be consumed no later than one (1) month after the end of the second on-site Go-Live support wave.
- In Track 2, Woolpert will provide up to two hundred (200) hours of remote post go-live support, hours begin immediately after completion of the on-site support for first go-live support, and all hours to be consumed no later than one (1) month after the end of the fifth on-site Go-Live support wave.

Assumptions

- County will sign-off and accept the end user training prior to the go-live cutover tasks and on-site end user and system administrator support efforts.
- County Project Manager will provide project sign-off within agreed upon timeframe following Go-Live.

County Responsibilities

- County Project Manager and IT support staff should equally assist in administering the Go-Live tasks to make sure it is clear to the End-Users that County is internally capable of supporting the newly deployed Enterprise solution. The County system administrators and IT support staff will benefit from learning basic Cityworks troubleshooting routines during this time beyond the admin training class that they will also attend.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 5.5: Phase 5 Quality Control



Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 5 tasks, activities and deliverables.

WBS Task 5.6: Phase Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered Deployment phase services in accordance with the Scope of Work and Project Plan.

Phase 6 – Extended Support

Post Go-Live, as the Asset Management System is leveraged to support daily maintenance management and asset sustainability objectives, the system end-users will undoubtedly identify additional system modifications and enhancements they would like to see implemented into the configuration. Users will identify workflow enhancements, new user- defined custom fields to capture additional data, modifications to in-boxes and dashboards, new and modified custom reports, and even perhaps additional system integrations. Some of these elements may have been already identified as “nice to have” during the core system implementation but were not made part of the scope at that time – we refer to this as “being placed in the parking lot for future consideration.”

WBS Task 6.1: Extended Review and Modifications

Woolpert will facilitate a series of extended system configuration reviews and modifications. The intent of these extended reviews/modifications is to give the County system users and administrators an opportunity to monitor and assess system usage and efficiencies over an extended period of time post Go-Live. During scheduled reviews, the County will likely identify configuration modifications that are desired to support new or modified business objectives. Woolpert will facilitate up to two (2) review/modification sessions, one at thirty (30) days and one at ninety (90) days after the last Go-Live wave in Track 1. Because the County will be positioned to make administrative changes as required, Woolpert will not provide any Extended Support after Track 2 Go Live.

Each extended review session will have three (3) parts; an on-site review of the County issue list, a technical memorandum from Woolpert proposing the items that should be addressed and how they should be addressed, and the effort to address the items. The review of the County issue list will be performed on-site at County facilities. Woolpert will work through the issue list as prioritized by the County. Woolpert will meet with the necessary system administrators and end users to more fully understand the issues. After the on-site review sessions, Woolpert will work remotely to document all the meeting discussion points and decisions and use this information to generate a Modifications Plan. This Technical Memorandum will be submitted to the County for review and then Woolpert will facilitate a joint review of the document. Upon agreement, Woolpert will work remotely with the County system administrators to execute the modifications.

Any items of the County issue list that were not able to be addressed within the allocated number of hours will be revisited, as their priority dictates, during the next extended review period.

Deliverables

- The following deliverables are applicable to each of the two (2) review sessions:
 - Woolpert will facilitate an on-site Modifications Review Meeting up to three (3) days in duration with the County system administrators and end users.
 - Woolpert will generate a Modification Plan technical memorandum.
 - Woolpert will facilitate a review meeting up to four (4) hours in duration with the County team to review the tech memo.
 - Woolpert will deliver up to a total of forty (40) hours of system design, configuration, testing, and deployment services to achieve the goals of the 30-day Modification Plan in Track 1.

- Woolpert will deliver up to a total of sixteen (16) hours of system design, configuration, testing, and deployment services to achieve the goals of the 90-day Modification Plan in Track 1.

Assumptions

- All system design, configuration, testing, training and deployment tasks are scoped to be performed remotely.
- Any work that the Client determines needs to be performed on-site, instead of remotely, will need to be fit within the allocated budget, or the budget will need to be adjusted accordingly.

County Responsibilities

- County will compile a prioritized list of desired system configuration modifications/enhancements and provide same to Woolpert no later than one (1) week prior to the scheduled on-site review meeting.
- County will ensure site readiness and staff participation for the on-site review meeting, as well as the remote Plan review meeting.
- County will secure an appropriate meeting facility in which Woolpert will conduct the on-site review meeting.
- County will participate in the discovery sessions to collect the details describing the desired modifications/enhancements.
- County will review the tech memo and prepare comments.
- County will participate in a review meeting with the Woolpert project manager or senior systems analyst.
- County will participate in making the modification as defined and agreed-to in the tech memo.
- County will be responsible for extended support to Track 2 end users after Go Live.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 6.2: Phase 6 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 6 tasks, activities and deliverables.

WBS Task 6.3: Phase Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered Extended Support phase services in accordance with the Scope of Work and Project Plan.

Phase 7 – Organizational Change Management

Per Change Control Notice (CCN) # 6, the County has taken over full ownership and execution of the OCM related tasks in Track 1 post June 1, 2018. The County will continue to assume full ownership and execution of the OCM activities in Track 2.

Phase 8 – GIS Readiness Support for **Track 1**

Woolpert will provide GIS services to Pinellas County in support of the Enterprise Asset Management (EAM) implementation project. The goal of this support is to help build a strong asset registry that will act as the foundation on which the Enterprise Asset Management (EAM) program can be built.

Woolpert will provide continued GIS support for the Track 1 Cityworks Implementation Project. As identified, GIS tools and automated processes will be developed as requested for asset data collection and maintenance. Since Cityworks is a GIS-centric solution and all of the assets to which work orders will be written are maintained in the GIS, these newly developed tools can be incorporated into the future work and maintenance workflows. Using the tools to collect the data in advance of the Cityworks Go-Live allows EAM stakeholders to start using GIS tools and adopt data management processes that will continue to be utilized once Cityworks is fully implemented.

Key Core GIS Services Deliverables

- **GIS Data Migration and Tools for GIS**
 - GIS Data Maintenance Tools (Optional Task)
- **GIS Implementation Support**
 - Ongoing GIS Support
 - Asset Data Maintenance Plan

WBS Task 8.1 and 8.2: Publish GIS Schema

NOTE: WBS Tasks 8.1 and 8.2 are currently scoped to be fully executed by the County.

Additionally, the County needs to establish a plan for collecting and improving GIS data. GIS data collection/maintenance tools will also need to be developed to support the data migration / collection / maintenance efforts. The planning and tool development tasks owned by the County can be summarized as follows:

- GIS Data Planning – The County will conduct activities to provide overarching strategies and specific plans to migrate, collect and maintain asset records in the GIS.
- Develop GIS Data Maintenance Tools – Optional, time and materials, not-to-exceed task for developing and deploying new GIS data maintenance tools identified in the GIS Data Plan as requested.

A GIS Data Plan document developed by the County will be used as a road map for the asset data migration (County), asset data maintenance plans (Woolpert), WBS 8.4.2, and the development of GIS tools to support the collection/maintenance of asset data (County)

WBS Task 8.3: Data Maintenance Tools for GIS (T&M Task)

If requested, Woolpert will work with the County to develop, test, and deploy GIS data maintenance tools described in the GIS Data Planning document. The work for this task will not exceed the planned level of effort outlined in the Deliverable section below.

The County will prioritize the potential list of GIS data maintenance tools to be developed. Using that prioritized list and the level of effort estimated in the GIS Data Planning document, the County and Woolpert will mutually agree upon the tools that will be developed under this scope of work.

Develop GIS Data Maintenance Tools. The GIS data maintenance tool development can begin once the list of tools is agreed upon. Woolpert will develop these tools locally in a Woolpert environment and later deploy the tools to the County development environment. Development progress will be reported to County GIS

resources and demonstrations of partially working tools may be provided to solicit feedback during the development process.

Test GIS Data Maintenance Tools. Once deployed to the County development environment, Woolpert will work with County GIS resources to develop a testing plan in preparation for an on-site GIS data maintenance tool testing workshop. A Woolpert Developer and Senior System Analysis will both be on-site address any concerns raised during the testing sessions. After the workshop, Woolpert will make updates in the Woolpert environment and later deploy the updates to the County Development environment. Once this second version of the tools have been deployed, Woolpert will facilitate a remote meeting to review the tool feedback.

Deploy GIS Data Maintenance Tools. Woolpert, with oversight from a County GIS Resource, will develop user guides for the newly developed tools. In preparation for end user training, the tools will be deployed to the County test, training, and production environments. Woolpert and County team members will ensure that the production version of the Go-Live environment exists prior to Go-Live activities.

GIS Data Maintenance Go-Live Support. During Go-Live support, two (2) Woolpert resources will be on-site to support County end-users and County GIS Resources as they encounter the typical issues associated with any Go-Live. As the issues subside, Woolpert will work with individuals, County GIS Resources and heavy users who want to get more out of their new solution, to provide additional coaching and supplemental training services, on an as-needed and as-available basis.

Deliverables

- **If requested, Woolpert System Analysis and Developer will facilitate up to five (5) on-site workshops.**

Assumptions

- **This is an optional, time and materials task.**
- The County will mutually agree on the scope, level of effort, and deliverables in writing before any work will be performed for this task.
- All work aside from the actual workshops will be performed remotely.
- County staff participating in the workshops will do so uninterrupted.
- The GIS Data Planning document will provide all tool development specifications.
- County will have Development, Testing, Training, and Production system environments, as appropriate.

County Responsibilities (If Woolpert is requested to take over ownership of Task)

- County will coordinate with Woolpert and provide ample time to identify Woolpert resources to work on this task.
- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County Technical Team will provide Woolpert access to Development, Testing, Training, and Production system environments, as appropriate.

- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.4: GIS Implementation Support

During the Track 1 Cityworks Implementation project, Woolpert will consult on GIS as it related to the project. Woolpert will meet with County GIS Resources on a regular basis to provide project related GIS leadership and guidance. Prior to the Go-Live of the Cityworks software, Woolpert will work with the County to develop an Asset Data Maintenance Plan.

WBS Task 8.4.1: Bi-Weekly GIS Support Meeting

Woolpert will attend meetings facilitated by the County on a regular basis to provide project related GIS consulting and guidance. County GIS Resources will present project related GIS challenges/opportunities to Woolpert for discussion. Woolpert will share GIS experiences, best practices, and make recommendations to help County GIS Resources work through the challenges/opportunities.

Deliverables

- Woolpert to attend two hours bi-weekly GIS Support meetings through the month of October 2019.
- Woolpert will provide 6 hours of ad-hoc GIS support between meetings.

Assumptions

- All work will be performed remotely.
- This will span the entire Track 1 project from Kickoff to Go Live.

County Responsibilities

- County will facilitate and host the meeting and provide meeting minutes.
- County to schedule the appropriate staff members such that they are available, without undue interruption, to participate in the remote meetings.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.4.2: Asset Data Maintenance Plan

Woolpert will work with County stakeholders to develop an ongoing Asset Data Maintenance Plan document for assets types included in the Track 1 Cityworks Implementation project. The plan document will detail asset maintenance strategies for each asset type. The objective is to develop an Asset Data Maintenance Plan that:

- Aligns with the County Asset Management Policy.
- Aligns with the County Asset Management Strategy and Objectives.
- Aligns with County Asset Information Management Plan.
- Considers individual department business needs.
- Follows industry best practices.
- Leverages Cityworks and Esri technology opportunities to improve accuracy and efficiency.
- Streamlines asset data maintenance processes.
- Empowers department end users.

This plan will define how the asset register is maintained during the entire life cycle of the asset. Woolpert will work with County stakeholders to develop a “to be” plan for Asset Data Maintenance Plan that includes procedures for:

- One-at-a-time commissioning assets.
- Bulk/Mass commissioning assets.
- Updating asset information.
- Decommissioning assets.
- Rebuilt assets.

Woolpert will document the following for each procedure:

- Responsible stakeholder.
- Hardware/Software utilized.
- Unique ID management.
- Quality control assurances.
- Asset data timing.

Deliverables

- Woolpert will develop an Asset Data Maintenance Planning Workshop agenda and submit it to the County Project Manager.
- Woolpert will facilitate workshop sessions for each of the two (2) departments. Each session is allocated eight (8) hours. Workshop time can be reallocated between the Asset Data Maintenance Planning workshops. However, the total amount of workshop time will not exceed sixteen (16) hours during a single on-site week.
- Woolpert will provide Asset Data Maintenance documentation for the County to review before each remote review meeting.
- Woolpert will perform 1 Round of remote review meetings via WebEx. Each session will be no longer than one-and-a-half (1.5) hours. This meeting will be used to discuss updates to the Asset Data Maintenance Plan documentation.
- Woolpert will provide a final Asset Data Maintenance Plan document.

Assumptions

- All work aside from the actual workshops will be performed remotely.
- Actual workshops will be administered on-site at County facilities over the course of a single business week.
- County staff participating in the workshops will do so uninterrupted.
- The GIS Data Planning documentation will provide valuable information to support this task.
- The EAM Program’s ISO Foundational document - Asset Information Plan will provide valuable information to support this task.
- This work is limited to GIS objects associated to the Track 1 Cityworks Implementation.

County Responsibilities

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.3: Phase 8 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 8 tasks, activities and deliverables.

WBS Task 8.4: Phase Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered GIS Readiness Support phase services in accordance with the Scope of Work and Project Plan.

Phase 8 – GIS Readiness Support for **Track 2**

Woolpert will provide GIS services to Pinellas County in support of the Enterprise Asset Management (EAM) implementation project. The goal of this support is to help build a strong asset registry that will act as the foundation on which the EAM Asset Management program can be built. This will be accomplished by designing and implementing GIS data models that support department business needs and are structured to also support EAM objectives. Standardized data model templates will be leveraged as much as possible and best practice data models will be developed where the standard data models do not exist or don't support the EAM objectives. Once the data models are designed and implemented, plans will be developed to migrate existing data into the new data models. Primarily, this asset data migration will consist of Facility data and Utility Plant data that exists in legacy Maximo systems. Where data does not exist, tools and processes will be developed for asset data collection and integration into the GIS system. Since Cityworks is a GIS centric solution, these data collection tools can be incorporated into the future asset data maintenance workflows.

Key Core GIS Services Deliverables

- **Esri Geodatabase Data Model Development**
- **GIS Data Migration and Tools for GIS**
 - **GIS Data Planning**
 - **Develop GIS Data Maintenance Tools (Optional Task)**
 - **Migrate Legacy Data to New GIS Database**
- **GIS Implementation Support**

These GIS services will reorganize selected existing GIS data to support EAM needs, migrate data from outside systems into GIS, establish processes for data maintenance, and provide GIS support for the implementation of the following Track 2 Cityworks asset needs:

- Building Facility Assets
- Utilities Plant Assets
- Parks Assets
- Recycle Center Assets
- Data Models Shared with Solid Waste; NOTE: Assets in the Waste to Energy (W2E) facility will not be modeled to match the level of detail / hierarchy that may exist in the CMMS solution currently in place for that facility. However, W2E assets may be created to support assignment of Cityworks inspections.
- Environmental Management Assets
- Fleet Assets

These services will result in a stronger GIS foundation with tools and processes for GIS data models identified above. Implementing these services in advance of Track 2 Cityworks Configuration Workshops will mitigate project risk that could arise if the asset registry schema was not well established. More important, in some cases, it will allow EAM stakeholders to start using GIS tools and adopt data management processes now that will continue to be utilized once Cityworks is fully implemented.

WBS Task 8.1: Geodatabase Data Model Development

Woolpert will develop Esri based (Geodatabase) data model schemas for each of the critical asset data tables that need to be populated to be ready for use by Cityworks at a future date. These Geodatabase tables include:

- **Building Facility Data Model** – While this data model will primarily support the Real Estate Management Department's management of Building Facility assets, it will be utilized to a lesser extent by other EAM participating departments.



- Utilities Plant Data Model – This data model will support the Utilities Department’s management of Water Plants, Wastewater Plants, Pump Stations, and SCADA systems. Solid Waste maintains many of the same asset types and will follow the direction established by the Utilities Department.
- Parks Data Model – This data model will support Parks’ management of Parks and Recreation type assets.
- Recycle Center Data Model and Shared Data Models – This data model will support Solid Waste’s management of Recycling type assets. In addition, shared aspects of the Solid Waste department’s use of the Utilities Plants, Facility, and Road data models will be planned and implemented.
- Environmental Management Data Model – This data model will support Public Works management of Waterbodies, Navigation Markers, and Beach type assets.
- Fleet Data Model – This data model will support the Real Estate Management of Fleet assets.

WBS Task 8.1.1: Woolpert to Facilitate Geodatabase Workshops

Woolpert will facilitate a series of data modeling workshops to develop an Esri geodatabase. The workshops will be conducted in four rounds, each round of workshops will build upon the previous round, with each iteration getting closer to a final data model that will be put into production. The completed data models will be deployed in the County development environment and will be loaded with sample data to enable department stakeholders to conduct their review and provide acceptance and validation of the models. The main objective of each round of workshops is detailed below:

Round 1: Identifying Asset Types

- Perform discovery with County and identify a list of potential assets types.
- Review existing asset types used in existing source system with stakeholders.
- Review and analyze application of Esri ArcGIS for Local Government Solutions with stakeholders.
- Establish a proposed list of EAM asset types with stakeholders.
- Vertical asset types will be arranged hierarchically into process and sub process and / or location-based groupings, as appropriate, with stakeholders.
- Build data model using asset types from Round 1 feedback.

Round 2: Identifying Attribution

- Review updated data model with stakeholders.
- Validate asset types and update as necessary with stakeholders.
- Establish process and sub processes categories for Utility Plant asset types with stakeholders.
- Review attribution and identify attributes that are specific by asset type with stakeholders.
- Update data model using information from Round 2.

Round 3: Finalizing Model

- Review updated data model with stakeholders.
- Finalize asset types with stakeholders.
- Finalize asset attribution with stakeholders.

- Review attribute domain values and identify lists of values with stakeholders.
- Update data model using information from Round 3.

Round 4: Validating Usability

- Prepare for workshops by adding sample data records.
- Review updated data model with stakeholders.
- Test/validate data model with stakeholders.
- Further develop attribute domains with stakeholders.
- Identify preferred method for maintaining and developing data with stakeholders (if necessary).

Woolpert will deploy the final data model to the County development environment. Attribute domain values will not be finalized as part of this task. The domain values will continue to mature as the newly developed data models are populated with data.

Deliverables

- Woolpert will develop On-site Session agendas and submit it to the County Project Manager.
- Round 1 Workshop Deliverables
 - Woolpert will facilitate Round 1 workshop sessions for each of the data models. Each session is allocated between four (4) and sixteen (16) hours. Workshop time can be reallocated between the data model workshops. However, the total amount of workshop time will not exceed fifty-six (56) hours or two (2) on-site weeks.
 - Woolpert will provide data model documentation for the County to review.
 - Woolpert will perform one (1) follow-up remote meeting via WebEx for each of the Round 1 workshops sessions. Each session will be no longer than two (2) hours. These sessions will be held during the fourth week of each cycle and be used to discuss updates to the data model documentation.
 - Woolpert will perform system configuration in the County on premise development environment based on the outcome of the Round 1 workshops and remote meetings.
- Round 2 Workshop Deliverables
 - Woolpert will facilitate Round 2 workshop sessions for each of the data models. Each session is allocated between four (4) and sixteen (16) hours. Workshop time can be reallocated between the data model workshops. However, the total amount of workshop time will not exceed fifty-six (56) hours or two (2) on-site weeks.
 - Woolpert will provide data model documentation for the County to review.
 - Woolpert will perform one (1) follow-up remote meeting via WebEx for each of the Round 1 workshops sessions. Each session will be no longer than two (2) hours. These sessions will be held during the fourth week of each cycle and be used to discuss updates to the data model documentation.
 - Woolpert will perform system configuration in the County on premise development environment based on the outcome of the Round 2 workshops and remote meetings.
- Round 3 Workshop Deliverables

- Woolpert will facilitate Round 3 workshop sessions for each of the data models. Each session is allocated between four (4) and sixteen (16) hours. Workshop time can be reallocated between the data model workshops. However, the total amount of workshop time will not exceed fifty-six (56) hours or two (2) on-site weeks.
- Woolpert will provide data model documentation for the County to review.
- Woolpert will perform one (1) follow-up remote meeting via WebEx for each of the Round 1 workshops sessions. Each session will be no longer than two (2) hours. These sessions will be held during the fourth week of each cycle and be used to discuss updates to the data model documentation.
- Woolpert will perform system configuration in the County on premise development environment based on the outcome of the Round 3 workshops and remote meetings.
- Round 4 Workshop Deliverables
 - Woolpert will facilitate Round 4 workshop sessions for each of the data models. Each session is allocated between four (4) and sixteen (16) hours. Workshop time can be reallocated between the data model workshops. However, the total amount of workshop time will not exceed fifty-six (56) hours or two (2) on-site weeks.
 - Woolpert will provide data model documentation for the County to review.
 - Woolpert will perform one (1) follow-up remote meeting via WebEx for each of the Round 1 workshops sessions. Each session will be no longer than two (2) hours. These sessions will be held during the fourth week of each cycle and be used to discuss updates to the data model documentation.
 - Woolpert will perform system configuration in the County on premise development environment based on the outcome of the Round 4 workshops and remote meetings.

Assumptions

- All work aside from the actual workshops will be performed remotely.
- Round 1 workshops will take place over the course of two (2) separate business weeks (Monday – Friday).
- Round 2 workshops will take place over the course of two (2) separate business weeks (Monday – Friday).
- Round 3 workshops will take place over the course of two (2) separate business weeks (Monday – Friday).
- Round 4 workshops will take over the course of two (2) separate business weeks (Monday – Friday).
- Actual workshops will be administered on-site at County facilities.
- County staff participating in the workshops will do so uninterrupted.
- The EAM Program’s ISO Foundational document – Asset Information Plan will provide valuable information to support this task .

County Responsibilities

- After the Round 4 workshops, no new information will be provided to Woolpert for inclusion into the data models. New information can be included in an Action Item for future consideration.

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County Technical Team will provide Woolpert access to GIS development environment to deploy data model.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.2: GIS Data Migration and Tools for GIS

Woolpert will develop a process to move existing data into the new GIS data models. Where data does not exist, a strategy for collecting the data will be established and GIS data collection/maintenance tools will be developed (if requested by the County – Optional Task) to support the effort. A planning effort will outline the strategy and work required to support the strategy. Following completion and acceptance of the plan, data migration scripts will be developed and GIS data maintenance tools will be developed and deployed. These tasks are detailed below:

- GIS Data Planning – provides a plan for potential asset migration, maintenance, creation, and/or data tool development requirements.
- Develop GIS Data Maintenance Tools – time and materials not-to-exceed task for and deploying new GIS data maintenance and creation tools recommended in the GIS Data Plan.
- Migrate Legacy Data to New GIS Database – time and materials not-to-exceed task for the migration of existing data into the newly created GIS data model as laid out in the GIS Data Plan.

A GIS Data Plan document will be developed and will be used as a road map for the asset data migration, asset data maintenance plans, and the development of GIS tools to support the collection/maintenance of asset data.

WBS Task 8.2.1: GIS Data Planning

Woolpert will facilitate a series of workshops and remote meetings to develop a GIS Data Plan document. Using the list of asset types developed during the Geodatabase Data Model Development task, detailed strategies will be developed and documented for each asset type and will include the following information:

- Data Migration – With the help of County stakeholders, Woolpert will perform analysis of available source data and develop a detailed mapping from the source data to the new GIS data model (if applicable). Timing for the execution of the data migration scripts will be determined and mutually agreed upon. Data migration plans must be created for the assets in the REM Maximo database and the Utilities Maximo database. Other migration plans to populate asset information may consist of moving existing GIS data into the new model and/or the identification of Excel/Access data sources that need to be migrated.
- Data Creation – With the help of County stakeholders, Woolpert will identify and prioritize data gaps. A method for collection of the data will be documented. If GIS data collection tools need to be developed, specifications will be included under the Tool Development category. The strategy will include asset onboarding plans.
- Data Maintenance – With the help of County stakeholders, Woolpert will develop plans to maintain the asset data. These plans may affirm existing processes and/or complement data migration/creation

strategies. For instance, if data is migrated into the new GIS data model, a strategy to keep the data current will be established. For Maximo data, the data may be kept current in the existing system and a final import may be performed closer to the transition from the Maximo system to the Cityworks system.

- Data Sharing – With the help of County stakeholders, Woolpert will develop plans to address changes in shared data. These may include simple process changes or more complex tool development to support the needs of the various County departments. Data “views” and/or publishing strategies may be used when the needs of multiple department/groups cannot be satisfied with a single data model schema.
- GIS Tool Development Recommendation – As required, Woolpert will provide a formal recommendation for the development of a tools or automated process which will include, at a minimum: a level of effort, list of functional requirements, and a proposed solution.
- Unique ID – Woolpert will recommend a strategy for maintaining a unique ID for each individual asset record. This strategy may vary from asset type to asset type.

This GIS Data Planning document will contain requirements necessary to execute the Develop GIS Data Maintenance Tools task and the Migrate Legacy Data to New GIS Database task included in this scope of work.

Deliverables

- Woolpert will develop On-site Session agendas and submit it to the County Project Manager.
- Woolpert will facilitate two (2) rounds of workshop sessions, each round will be conducted within a single business week, for each of the five (5) departments. Each session is allocated eight (8) hours. Workshop time can be reallocated between the Data Development Planning workshops. However, the total amount of workshop time will not exceed forty (40) hours for each round.
- Woolpert will provide GIS Data Planning documentation for the County to review before each remote review meeting.
- Woolpert will perform 3 remote review meetings via WebEx. Each review meeting will consist of five (5) sessions. Each session will be no longer than one-and-a-half (1.5) hours. This meeting will be used to discuss updates to the GIS Data Planning documentation.
- Woolpert will provide a final GIS Data Planning document.

Assumptions

- The number of datasets is unknown at the time of scoping. If the scoped workshop time in rounds 1 and 2 is insufficient to review all of the datasets and processes, Woolpert will compile only the information collected. Should the County desire additional workshop time, Woolpert can scope that as new tasks or replace other tasks in this SOW with those additional workshops.
- At the conclusion of the remote review meetings via WebEx, no new County-supplied information will be included in the Data Plan document.
- All work aside from the actual workshops will be performed remotely.
- Actual workshops for each round will be administered on-site at County facilities over the course of five (5) business weeks (Monday – Friday).
- County staff participating in the workshops will do so uninterrupted.
- The EAM Program’s ISO Foundational document – Asset Information Plan will provide valuable information to support this task.

County Responsibilities

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County Technical Team will provide Woolpert access to GIS development environment to deploy data model.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.2.2: Develop GIS Data Maintenance Tools (T&M Task)

If requested, Woolpert will work with the County to develop, test, and deploy GIS data maintenance tools described in the GIS Data Planning document. The work for this task will not exceed the planned level of effort outlined in the Deliverable section below unless additional funds are added to this task or other scoped tasks are removed. The County will prioritize the list of potential GIS data maintenance tools to be developed. Using that prioritized list and the level of effort estimated in the GIS Data Planning document, the County and Woolpert will mutually agree upon the tools that will be developed under this scope of work.

Develop GIS Data Maintenance Tools. The GIS data maintenance tool development can begin once the list of tools is agreed upon. Woolpert will develop these tools locally in a Woolpert environment and later deploy the tools to the County development environment. Development progress will be reported to County GIS resources and demonstrations of partially working tools may be provided to solicit feedback during the development process.

Test GIS Data Maintenance Tools. Once deployed to the County development environment, Woolpert will work with County GIS resources to develop a testing plan in preparation for an on-site GIS data maintenance tool testing workshop. A Woolpert Developer and Senior System Analysis will both be on-site address any concerns raised during the testing sessions. After the workshop, Woolpert will make updates in the Woolpert environment and later deploy the updates to the County Development environment. Once this second version of the tools have been deployed, Woolpert will facilitate a remote meeting to review the tool feedback.

Deploy GIS Data Maintenance Tools. Woolpert, with oversight from a County GIS Resource, will develop user guides for the newly developed tools. In preparation for end user training, the tools will be deployed to the County test, training, and production environments. Woolpert and County team members will ensure that the production version of the Go-Live environment exists prior to Go-Live activities.

GIS Data Maintenance Go-Live Support. During Go-Live support, two (2) Woolpert resources will be on-site to support County end-users and County GIS Resources as they encounter the typical issues associated with any Go-Live. As the issues subside, Woolpert will work with individuals, County GIS Resources and heavy users who want to get more out of their new solution, to provide additional coaching and supplemental training services, on an as-needed and as-available basis.

Deliverables

- **If requested**, Woolpert System Analyst and Developer will facilitate up to five (5) on-site workshops.

Assumptions

- **This is an optional, time and materials task.**
- The County will agree on the scope, level of effort, and deliverables in writing before any work will be performed for this task.
- All work aside from the actual workshops will be performed remotely.
- Actual workshops will be administered on-site at County facilities over the course of five (5) business weeks (Monday – Friday).
- County staff participating in the workshops will do so uninterrupted.
- The GIS Data Planning document will provide all tool development specifications.
- County will have Development, Testing, Training, and Production system environments, as appropriate.

County Responsibilities (If Woolpert is requested to take over ownership of Task)

- County will coordinate with Woolpert and provide ample time to identify Woolpert resources to work on this task.
- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County Technical Team will provide Woolpert access to Development, Testing, Training, and Production system environments, as appropriate, to deploy data model.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.2.3: Migrate Legacy Data to New GIS Database

Woolpert plans to migrate data from the REM Maximo system and the Utilities Maximo system into the newly developed GIS data model. Additional data sources identified in the GIS Data Plan document may be migrated into the new GIS data model, too. The work for this task will not exceed the planned level of effort outlined in the Deliverable section below. The County will prioritize the potential list of data sources to be imported into GIS. Using that prioritized list and the level of effort estimated in the GIS Data Plan document, the County and Woolpert will mutually agree upon the data to be migrated into the new GIS data model under this scope of work.

Woolpert will work with the County technical staff to undertake the tasks necessary to move the data sets from the existing data sources and prepare them for loading into the new databases. It will be the County's responsibility to extract the source data sets and provide them to Woolpert for transforming and loading into the new databases. Once Woolpert receives the data from the County, we will perform a number of tests on the data sets, checking for data cleanliness, completeness, relevancy, and conformance to the standards established in the GIS Data Plan document. Woolpert will facilitate remote data conversion review meetings to validate the

migrated data. If necessary, the County will perform additional data cleanup and/or Woolpert will update the components in the migration process.

Once this iterative process is complete, Woolpert will transform and load the data into a County development database to complete the data conversion. After the migration process has been fully tested, the entire process will be documented and Esri map services supporting Cityworks will be published.

During the GIS Implementation Support task, Woolpert will re-run the process just prior to go-live to load the legacy data into the production GIS database.

Deliverables

- Woolpert will develop two (2) Remote Session agendas and submit it to the County Project Manager.
- Woolpert will perform two (2) remote review meetings not exceeding eight (8) hours each via WebEx.
- Woolpert will provide a final GIS Data Migration document.

Assumptions

- All work will be performed remotely.
- County staff participating in the remote review meetings will do so uninterrupted.
- All data migration specifications have been detailed in the GIS Data Plan document.
- Only two iterations of data migration will be performed. Should the County fail to provide properly scrubbed data per the migration specifications in the GIS Data Planning document, additional iterations may require this work will be performed via Scope Change Order.

County Responsibilities

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in remote meetings.
- County Team Members shall participate in the remote review meetings.
- County Technical Team will provide Woolpert access to GIS development environment.
- County will perform prep, scrubbing, and extraction of data from source databases.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.3: GIS Implementation Support

During the Track 2 Cityworks Implementation project, Woolpert will consult on GIS as it related to the project. Woolpert will meet with County GIS Resources on a regular basis to provide project related GIS leadership and guidance. Prior to the Go-Live of the Cityworks software, Woolpert will work with the County to develop an Asset Data Maintenance Plan.

WBS Task 8.3.1: Bi-Weekly GIS Support Meeting

Woolpert will meet with County GIS Resources on a regular basis to provide project related GIS leadership and guidance. County GIS Resources will present project related GIS challenges/opportunities to Woolpert for

discussion. Woolpert will share GIS experiences, best practices, and make recommendations to help County GIS Resources work through the challenges/opportunities.

Deliverables

- Woolpert to facilitate bi-weekly GIS Support meetings.
- Woolpert to author Meeting Minutes for each GIS Support meeting and to upload the minutes to project website.

Assumptions

- All work will be performed remotely.
- This will span the entire Track 2 project from kickoff to Go Live.

County Responsibilities

- County to schedule the appropriate staff members such that they are available, without undue interruption, to participate in the remote meetings.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.3.2: Asset Data Maintenance Plan

Woolpert will work with County stakeholders to develop an ongoing Asset Data Maintenance Plan document for assets types included in the Track 2 Cityworks Implementation project. The plan document will detail asset maintenance strategies for each asset type. The objective is to develop an Asset Data Maintenance Plan that:

- Aligns with the County Asset Management Policy.
- Aligns with the County Asset Management Strategy and Objectives.
- Aligns with County Asset Information Management Plan.
- Considers individual department business needs.
- Follows industry best practices.
- Leverages Cityworks and Esri technology opportunities to improve accuracy and efficiency.
- Streamlines asset data maintenance processes.
- Empowers department end users.

This plan will define how the asset register is maintained during the entire life cycle of the asset. Woolpert will work with County stakeholders to develop a “to be” plan for Asset Data Maintenance Plan that includes procedures for:

- One-at-a-time onboarding assets.
- Bulk/Mass onboarding assets.
- Updating asset information.
- Decommissioning assets.
- Rebuilt assets.

Woolpert will document the following for each procedure:

- Responsible stakeholder.

- Hardware/Software utilized.
- Unique ID management.
- Quality control assurances.
- Asset data timing.

Deliverables

- Woolpert will develop On-site Session agendas and submit it to the County Project Manager.
- Woolpert will facilitate workshop sessions for each of the five (5) departments. Each session is allocated eight (8) hours. Workshop time can be reallocated between the Asset Data Maintenance Planning workshops. However, the total amount of workshop time will not exceed forty (40) hours for one on-site week. The County and Woolpert will collectively prioritize the number of assets per department that can be covered in each eight (8) hour session.
- Woolpert will provide Asset Data Maintenance documentation for the County to review before each remote review meeting.
- Woolpert will perform 2 Round of remote review meetings via WebEx. Each session will be no longer than one-and-a-half (1.5) hours. This meeting will be used to discuss updates to the Asset Data Maintenance Plan documentation.
- Woolpert will provide a final Asset Data Maintenance Plan document.

Assumptions

- The number of datasets is unknown at the time of scoping. If the scoped workshop time in Rounds 1 is insufficient to review all of the datasets and processes, Woolpert will compile only the information collected. Should the County desire additional workshop time, Woolpert can scope that as new tasks or replace other tasks in this SOW with those additional workshops.
- At the conclusion of the remote review meetings via WebEx, no new County-supplied information will be included in the Data Plan document.
- All work aside from the actual workshops will be performed remotely.
- Actual workshops will be administered on-site at County facilities over the course of five (5) business weeks (Monday – Friday).
- County staff participating in the workshops will do so uninterrupted.
- The GIS Data Planning documentation will provide important information to support this task.
- The EAM Program’s ISO Foundational document - Asset Information Plan will provide valuable information to support this task.
- This work is limited to GIS objects associated to the Track 2 Cityworks Implementation.

County Responsibilities

- County to schedule the appropriate Department project team members such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 8.4: Phase 8 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 8 tasks, activities and deliverables.

WBS Task 8.5: Phase Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered GIS Readiness Support phase services in accordance with the Scope of Work and Project Plan.

Phase 9 – ISO 55K EAM Program Development Support

In Track 1, Woolpert will provide IAM-certified Asset Management Subject Matter Experts to support the County’s ISO55000 based Enterprise Asset Management (EAM) Program development objectives. The goal of this support is to help set the County on a roadmap to executing the strategies and objectives defined during *Phase 2: Implementation Planning* efforts undertaken during 2016 and 2017. This will be accomplished by first administering an EAM maturity assessment with the County Core, Project, Leadership and key Stakeholder teams. Standardized Assessment tools such as the IAM Self-Assessment model will be leveraged as much as possible to provide an assessment of the County’s current maturity level and compare it to the previous self-determined maturity level. The assessment will also identify gaps in processes and practices to be closed over a set period to move to the County to the next logical maturity level.

Key Core Deliverables

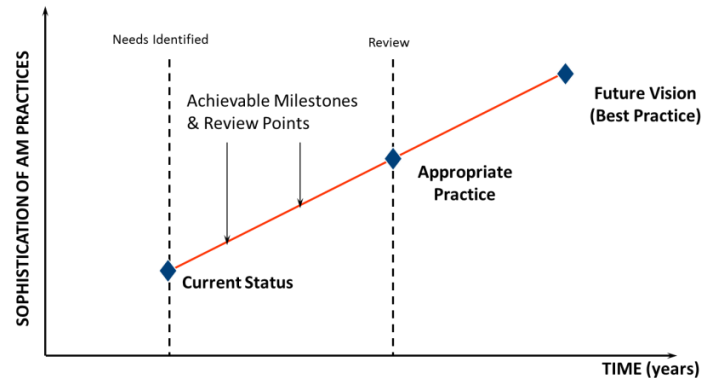
- EAM Maturity Assessment
- AM Strategy & Objectives Implementation Roadmap
- AM Strategy & Objectives Implementation Roadmap Support Scope

Linked to this effort is the prioritization of Action Items outlined in the Asset Management Strategies and Objectives document. The thirteen strategies stated in this document have associated objectives and action items that need to be vetted and prioritized for execution over a certain period, preferably the next 3–4 years. Woolpert will facilitate the development of a roadmap document with identified mini-projects representing each objective/action item within the thirteen strategies. The roadmap document will be comprehensive in nature consisting of a detailed project plan for each mini-project complete with a Gantt Chart and Resource Plan. Woolpert will prepare and submit a scope of work to support execution of the roadmap mini-projects.

WBS Task 9.1: EAM Program Maturity Assessment

Maturity assessments are a key component of any strategic planning process. IAM provides a Self-Assessment Methodology tool, Self-Assessment Methodology+ (SAM+), that is designed to measure an organization’s capabilities against the requirements of BSI PAS 55 and ISO 55000. The benefit of using SAM+ for the maturity assessment is to:

- Allow Pinellas to assess its capabilities against the requirements of ISO 55001.
- Facilitate the identification of best practices and preparation of action plans for improvement to the next maturity level.
- Allow Pinellas to track improvements in their EAM Asset Management program over time using a standard methodology.
- Position Pinellas to achieve ISO 55000 certification.



The “gap” is the distance between the “as is” of the current state and the “to be” of the desired future state of an organization. SAM+ provides a quantified approach to determining “where the County is” relative to where it needs to go within the next few years. The SAM+ Tool provides the means to quantify the basis for understanding how Pinellas can achieve its future vision.

During the creation of the Asset Management Strategies and Objectives document in 2016, Pinellas County, through an **informal self-assessment**, identified itself as between maturity levels 1 (Aware) and 2 (Developing)

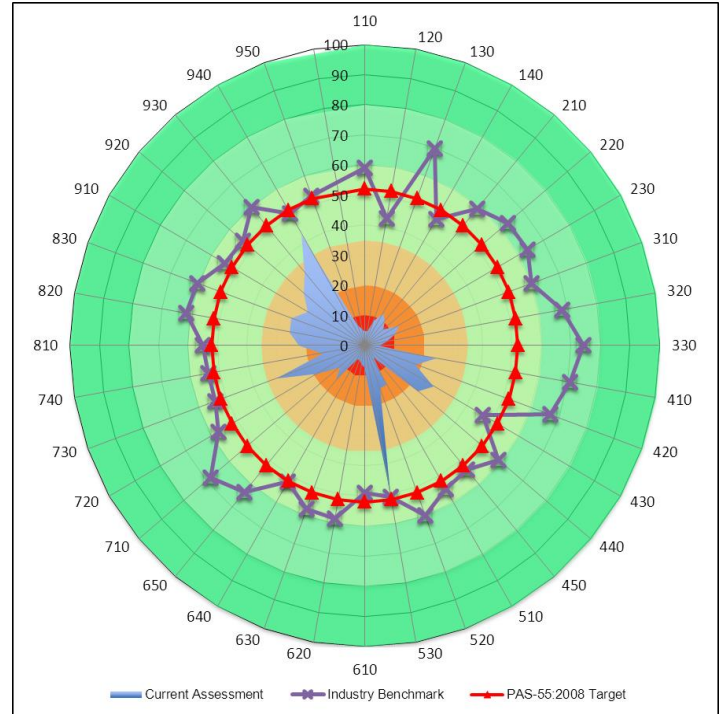


on the Asset Management Maturity Scale. In this task, Woolpert will use an IAM recommended SAM+ tool to facilitate a formal maturity assessment to confirm the current state of maturity. Since the last informal self-assessment in 2016, the County has embarked on the implementation of the Cityworks AMS application for two of its Departments, setup an organizational structure to support Enterprise Asset Management efforts, begun to address Organizational Change Management aspects, standardized work management work flows throughout the enterprise, to name a few. SAM+ will capture these developments and formalize the maturity level quantification providing a clear roadmap for achieving the County’s future vision for its EAM program.

WBS Task 9.1.1: Facilitate EAM Maturity Assessment

Woolpert will work with County Project and Core Teams to identify key participants in the AM Maturity Assessment exercise. The objective is to have stakeholders and leaders in each function area (example - operations, maintenance, work management systems, GIS, finance, inventory, materials management, etc.) be involved to develop an accurate understanding of the of the County’s current asset management related practices. It is expected that the Core and Project Teams will be able to provide a ground truth as assessments are being made during the workshops.

The statements and questions in SAM+ are designed to delve into the specific functions and capabilities that contribute to good asset and work management practice. The formal assessment will be conducted through facilitated on-site workshops consisting of a diverse group of stakeholders throughout Pinellas recommended by the County Project and Core Teams. Responses to each question will be captured in the workshops and documented in an “AM Maturity Assessment” report accompanied by scores for the elements assessed in each workshop.



The design and layout of the assessment working sessions will also be finalized in consultation with the County Project and Core Teams. If necessary, follow up meetings and discussions with relevant functional area staff will allow Woolpert to solicit additional information in support of determining the current state of asset and work management practices.

The outcome of this task will be a set of initiatives that will be required to move the organization from the current state of maturity to the desired state. Each initiative will be structured in a common layout with the intent to expand on the desired outcomes, key tasks, and resource requirements. Specifically, these initiative documents will include the following:

- Initiative Overview
- Existing Initiatives and Investments
- Priority
- Timing
- Cost Estimate

- Duration
- Team Member Roles and Responsibilities
- Team Member Staffing Requirements
- Description
- Dependencies
- Key Deliverables
- Outcomes and Benefits
- Initiative Goals and Measures
- Sustainability Needs

Based on the initiatives defined as part of the Gap Assessment activities, Woolpert will work with the County Core and Management Teams to update the Strategies and Objectives document to reflect revised action items, as required. These efforts will be completed as part of Task 9.2: AM Strategy & Objectives Implementation Roadmap.

Deliverables

- Woolpert will facilitate multiple assessment workshops over a four (4) day business week. Workshop time can be reallocated between stakeholder groups, but the total amount of workshop time will not exceed forty (32) hours for one on-site week.
- Woolpert will provide a DRAFT AM Maturity Assessment Report for the County to review before the on-site review meeting.
- Woolpert will facilitate one (1) on-site review meeting not to exceed eight (8) hours. This meeting will be used to discuss the County’s comments to the DRAFT AM Maturity Assessment Report and make edits.
- Woolpert will provide FINAL AM Maturity Assessment Report.

Assumptions

- All work aside from the actual workshops will be performed remotely.
- On-site workshops will be administered at County facilities over the course of one (1) business week (Monday – Friday).
- County staff participating in the workshops will do so uninterrupted.

PROJECT C1. ASSET MANAGEMENT TRAINING
<p>Project Description and Outcome: This project involves increasing the understanding of asset management best practices throughout the Division. This includes development of a formal definition of the Division’s asset management vision and policy and sharing it throughout the Division. Additionally, both through formal training sessions and informal education by peers will be implemented. <i>Outcome: The Division is increasingly aware of asset management best practices and can use appropriate systems to aid in practicing good asset management.</i></p>
<p>Tasks: The tasks of the project include:</p> <ul style="list-style-type: none"> • C1-1. Develop and communicate AM vision and policy. • C1-2. Provide training on asset management best practices. • C1-3. Provide Maximo training with regard to AM BP’s
<p>Major Deliverables: The major deliverables from this project are:</p> <ul style="list-style-type: none"> • A developed and documented asset management vision and asset management policy for the Division. • The asset management vision and asset management policy are formally introduced to the Minneapolis Water employees. • Appropriate members of Maximo implementation team, Infrastructure Strategy Team, Asset Management Team, etc. are given a defined responsibility to educate their peers on an informal basis. • The need for formal training on asset management best practices and use of Maximo with regard to asset management best practices is evaluated and appropriate training is set up and implemented.
<p>Estimated Level of Effort:</p>
<p>Estimated Project Duration and Dependencies: This project is scheduled to stretch from Q2 2015 to the start of Q1 2016. This project should be implemented parallel to other training tasks (Projects C2 and C3) and should be timed appropriately to be as relevant as possible with regard to the Maximo 7.5 Implementation (Project A1).</p>
<p>Related Information and/or Issues:</p> <ul style="list-style-type: none"> • EPA Asset Management Training Material: http://simple.werf.org/Books/Contents/Interactive-Training/EPA-Asset-Management-Training-Material
<p>Gap Assessment Cross Reference:</p> <ul style="list-style-type: none"> • 5.01.01: Organizational commitment to Asset Management. • 5.01.03: Asset Management roles and responsibilities. • 5.01.07: The corporate vision reflects a commitment to best practice in Asset Management. • 6.01.02: Good AM attitude and culture. • 6.01.06: Processes for the development and implementation of asset management training programs.



County Responsibilities

- County to schedule the appropriate staff such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings, as requested.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 9.2: AM Strategy & Objectives Implementation Roadmap

Pinellas County's first-generation **Asset Management Strategy** developed in 2016 includes the following thirteen (13) specific strategies:

1. Systematic Approach
2. Service Levels
3. Asset Management Plans
4. Criticality and Risk Management
5. Asset Life-Cycle Planning and Optimization
6. Asset Resiliency
7. Service Delivery and Funding Opportunities
8. Resource Management and Development
9. Asset Data
10. Asset Reporting
11. Technology Enablers
12. Continual Improvement and Innovation
13. Asset Management Performance Management

Each Asset Management Strategy has an associated list of objectives and action items that link to accomplishment of those objectives. There are fifty (50) Action Items spanning thirteen strategies that can be considered as "mini" projects (mProjects) in themselves that the County needs to undertake as part of furtherance of its Enterprise Asset Management Program. This task facilitates evaluation of these fifty (50) mProjects by developing and jointly implementing a prioritization methodology with the County. Adjustments to the current 50 mProjects will be undertaken, as necessitated by the results of the EAM Program Maturity Assessment (Task 9.1).

The outcomes from this task is a roadmap consisting of prioritized list of mProjects representing fifty (50) Action Items with owners assigned, a mProject plan consisting of a Gantt Chart and level of effort, and identification of necessary County staff to deliver these mProjects.

Deliverables

- Woolpert will facilitate one on-site AM Strategy & Objectives Review workshop with the County. Workshop time will not exceed eight (8) hours.
- Woolpert will provide a DRAFT AM Strategy & Objectives Implementation Roadmap document for the County to review before the on-site review meeting.

- Woolpert will facilitate one (1) on-site review meeting not to exceed eight (8) hours. This meeting will be used to discuss the County’s comments to the DRAFT AM Strategy & Objectives Implementation Roadmap document and make edits.
- Woolpert will submit FINAL Strategy & Objectives Implementation Roadmap document.

Assumptions

- All work aside from the actual workshops will be performed remotely.
- On-site workshops will be administered at County facilities over the course of one (1) business week (Monday – Friday).
- County staff participating in the workshops will do so uninterrupted.

County Responsibilities

- County to schedule the appropriate staff such that they are available, without undue interruption, to participate in workshops and remote meetings.
- County will provide a conference room or training room with a projector.
- Workshop participants shall actively participate in workshop activities.
- Workshop participants shall participate in the remote review meetings as requested.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 9.3: AM Strategy & Objectives Implementation Roadmap Support Scope

Upon finalization of the AM Strategy and Objectives Implementation Roadmap document, Woolpert will prepare a scope of services to support the mProjects in the Roadmap. Woolpert will work with the County to select the Roadmap mProjects to include in the support services scope.

The execution of the scope of services proposed in this task is outside the scope of Tracks 1 and 2. The County will have to approve the fees with this scope for Woolpert to assign resources to support the AM Strategy & Objectives Implementation Roadmap mProjects.

Deliverables

- Woolpert will provide a DRAFT Scope of Services to support selected Roadmap mProjects.
- Woolpert will facilitate one (1) remote review meeting not to exceed four (4) hours. This meeting will be used to discuss the County’s comments to the DRAFT Scope of Services to support selected Roadmap mProjects and make edits.
- Woolpert will submit FINAL Scope of Services to support selected Roadmap mProjects.

Assumptions

- All work will be performed remotely.



County Responsibilities

- County to work with Woolpert and select Roadmap projects for which Woolpert support scope of services need to be developed.
- County to review Woolpert’s Roadmap Projects Support Scope of Services.
- County to participate in a joint remote review of Woolpert’s Roadmap Projects Support Scope of Services.
- County to review and accept Woolpert’s Roadmap Projects Support Scope of Services.
- County will review the draft and final documents and provide feedback and approval within the defined timeframes in the project schedule.

WBS Task 9.4: Phase 8 Quality Control



QUALITY MANAGEMENT

Woolpert will apply the Quality Management Process stated earlier in this scope document to Phase 9 tasks, activities and deliverables.

WBS Task 9.5: Phase Acceptance and Close

This is the Phase exit document that the County Project Manager signs indicating Woolpert has delivered ISO55K EAM Program Development Support phase services in accordance with the Scope of Work and Project Plan.

Phase 10 – Owner-Directed Funds (ODF)

Tracked in this phase will be a contingency fund to be used for tasks as directed by the County. The funds in this phase will be encumbered by the Board of County Commissioners (BCC) at the onset of the project but will not be consumed unless they are allocated to a newly scoped set of tasks. As the collective Woolpert-County project team identifies un-scoped tasks that require Woolpert participation, the County will request of Woolpert either a scope of work with a firm-fixed fee for a set of definable services or a scope of work with a rate table for ad-hoc or loosely-defined services. The scope of services will require formal approval by the County project leadership to begin the work, but the funding, should it be equal to or less than the amount of the ODF phase, will not require commission approval. As funds are allocated from this phase to newly scoped services, the amount available for subsequent un-scoped tasks will be reduced. Similarly, if the Woolpert-County team determines that any tasks included in the original fixed-fee scope are not required, Woolpert will remove them from the fixed-fee scope and allocate their funds to this ODF phase, effectively replenishing the reserve and making more funds available for other un-scoped tasks.

Phase 11: Track 1 System Customizations

During the Track 1 configuration efforts, several system customizations were identified by the Woolpert / County configuration team as critical functionality desired at system go-live. This phase identifies and describes the tasks necessary to deliver those customizations.

NOTE: No Track 2 customizations have been identified at this time. Should a potential customization be identified, the process for Woolpert to identify and present options to the County team, and then to vet and scope one or more option, is defined elsewhere. Should the County desire that a customization be developed and deployed with Track 2, those efforts will be incorporated into the scope via a Change Request Notice.

A general description of the Track 1 customizations is as-follows:

Employee Historical Rate Tracking: Cityworks maintains multiple types of labor rates (e.g. Regular Time, Overtime, Holiday, etc.) but only the current value for each type is stored for each Employee. If historical labor rates are required for reporting, or other reasons, they cannot be retrieved from the Cityworks database. In order to provide a historical view of expired labor rates, Woolpert will create a new table in the Cityworks database and develop a trigger that populates rate information for each employee with a start and end date so that previous (non-current) labor rates are available.

The agreed-upon specification for this customization can be found in Appendix A.

Problem, Cause, Remedy (PCR) Admin Tool: Cityworks allows PCR values to be created for work order templates as custom fields. There is no logic between custom fields. Each field's pick-list is independent from the others and non-sensical Problem, Cause and Remedy combinations can be selected. This customization will allow Cityworks users to create cascading lists of values for PCR fields so that the selected values make logical sense.

The agreed-upon specification for this customization can be found in Appendix A.

Service Request Question and Answer (Q&A) Instruction Expansion: Cityworks provides functionality that allows scripted questions to be displayed to caller takers when a service request is being created. The system will prompt the call taker with questions and allow them to record the caller's responses. Some responses are configured to provide the call takers with an instruction. That instruction is not immediately or automatically visible to the user. The user must enter the response and then click on the questions panel down-arrow to expose the instructions. This customization will auto-expand the instructions panel when an instruction is configured for the selected response.

The agreed-upon specification for this customization can be found in Appendix A.

Work Order (WO) Priority Automation: Cityworks allows users assign a Category value to a Work Order Template. County has determined that different Category values equate to varying levels of priority for the work activity, Predictive / Preventive work is a lower priority that Reactive / Corrective work. County is also assigning a value to asset records to indicate the risk posed by each asset. Certain assets pose more risk to the County than others. Two assets may require the same type of work (preventive Maintenance), but if one asset has greater risk value, that work order should be prioritized higher than the work on the low risk asset.

Work Order Template categories are assigned numerical values from 1 to 3. Asset risk scores assigned asset records range from 1 to 5. A work order field called Work Priority will auto-populate with the product of multiplying

the Work Order Template Category value by the Asset Risk value. Users will prioritize work orders based on the Work Priority field.

The agreed-upon specification for this customization can be found in Appendix A.

Deliverables

- Employee Historical Rate Tracking:
 - Customization Specification
 - Customization Components; tables, triggers, code, etc.
 - Components deployed for Testing
 - Components deployed for Go-Live
- PCR Admin Tool
 - Customization Specification
 - Design Mock-up
 - Customization Components; tables, triggers, code, etc.
 - Components deployed for Testing
 - Components deployed for Go-Live
- Service Request Q&A Instruction Expansion
 - Customization Specification
 - Customization Components; tables, triggers, code, etc.
 - Components deployed for Testing
 - Components deployed for Go-Live
- WO Priority Automation
 - Customization Specification
 - Design Mock-up
 - Customization Components; tables, triggers, code, etc.
 - Components deployed for Testing
 - Components deployed for Go-Live

Assumptions

- The known customizations are fully vetted, documented, and agreed-to by the County.

County Responsibilities

- Review and approve the specifications.
- Review and provide feedback on any mock-ups
- Participate in Testing until the customization is accepted



Phase 12: Cityworks Upgrades

Cityworks releases new software versions every 12-18 months. Each version contains major upgrades to the system's functional capabilities, technology / architecture, or both. In the interim, software patches and upgrades are provided to correct bugs and provide minor functional improvements.

Track 1 will go live on Cityworks v15.3.3. Woolpert will ensure that the Cityworks environments (PROD, TEST, TRN, and DEV) are running this version of the software.

In order to configure the PAVER interface during Track 2, Cityworks needs to be upgraded to version 15.4 or higher. Cityworks is developing an out of the box integration tool with PAVER that is scheduled to be released in version 15.4. Upgrading Cityworks once Track 1 is live is the responsibility of the County.

Appendix A: Track 1 Customization Specifications

The following are the four (4) specification documents for the scoped customizations in Phase 11.



Specifications and Scope

Cityworks Track 1 Customizations
Service Request QA Instructions Expansion Script

Pinellas County

August 2018



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Revision History and Change Control


Name	Date	Change
James Lloyd	June 7, 2018	Initial draft
James Lloyd	August 21, 2018	QA/QC
Anthony Brown	October 3, 2018	QA/QC

Description

Pinellas County has identified customizations that they are interested in having Woolpert develop as part of their enterprise-wide Cityworks deployment. This document provides the technical details for the Service Request Question / Answer Expansion customization.

Cityworks provides functionality that allows questions for callers when a service request is created. The system will prompt the call taker with any number of questions. As the call taker enters responses to the questions, instructions may be configured that are associated with the specific question and response entered.

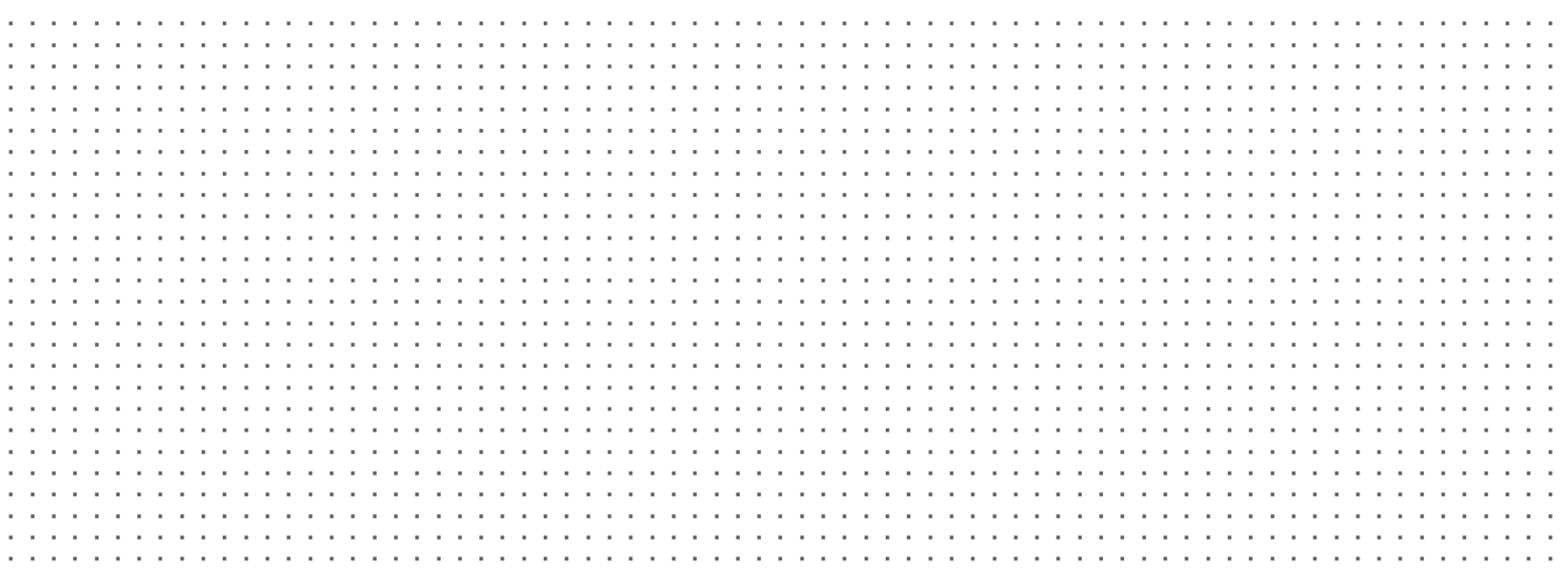
Throughout the core configuration of Cityworks for the County, there were many question and answer options configured and a number with associated instructions.

When creating a service request that is configured with instructions on question and answers, the instructions are not immediately or automatically visible to the user. The user must select an answer and then click on the questions panel down-arrow  to expose the instructions.

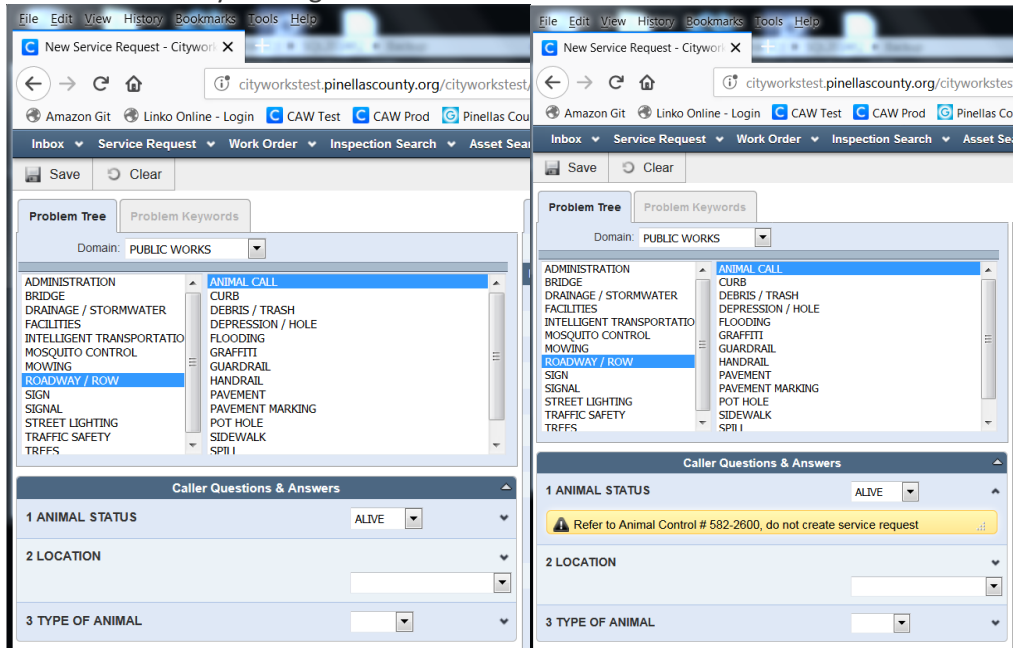
Functionality

This customization will automatically display the instructions panel when the user selects an answer to a question where instructions are configured.

The following images show an example of a question with an answer selected that has associated instructions. The image on the left has the instructions panel collapsed. This is the default state of the instructions panel. The image on the right shows the same question and answer after the user expands



the instructions by clicking on the down-arrow.



Functional Requirements

The following table lists the required functional requirements of this customization:

Table 2: Functional Requirements

Functional Requirements	
ID	Assumption
FR 1.	If instructions are associated with an answer selected, the automation will expand the instructions panel.
FR 2.	If the user changes a previously entered answer that has associated instructions to one that does not, the instruction panel will be collapsed to the default position.

This customization will consist of custom JavaScript code. The code will reside on the Cityworks application server. The code will be linked into Cityworks by modifying Cityworks-supplied XML files. The XML files are part of the core Cityworks software and are used to configure minor modifications to the application interface.

This customization will be developed on Woolpert’s local environment before being deployed to the County servers.

Estimated Schedule and Level of Effort

Table 3: Level of Effort

Task Name	Duration	Cost
Pinellas County EAM Implementation Track 1 SR QA Instructions Expansion	1.75 days	\$4,788.36
Develop Code	1 day	\$2,292.20
Deploy code to County environment	0.25 days	\$687.66
Testing	0.25 days	\$687.66
Documentation	0.25 days	\$1,120.84
County to Accept	0 days	\$0.00

Assumptions

Table 4: Systemic Assumptions

Assumptions	
ID	Description
A1.	Woolpert will provide source code to the County.



Specifications and Scope

Cityworks Track 1 Customizations

Problem Cause Remedy (PCR) Administrator Interface

Pinellas County

October 2018

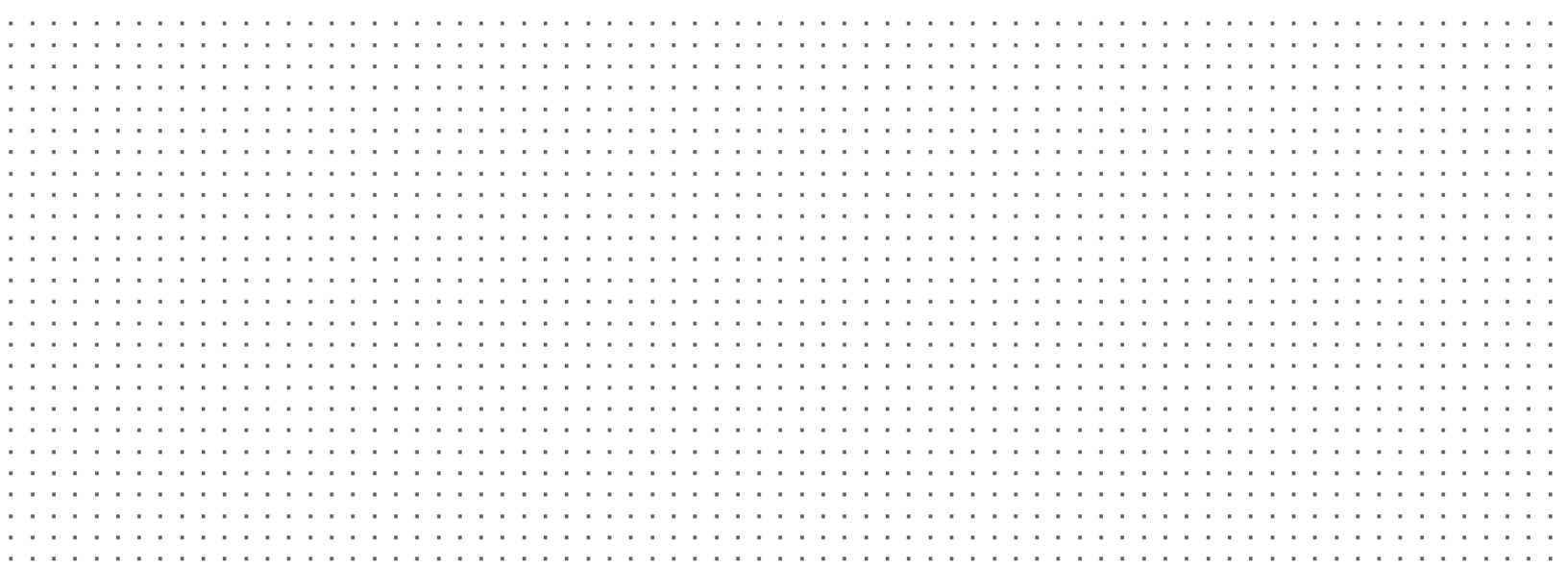


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Revision History and Change Control

Table 2: Revision History		
Name	Date	Change
James Lloyd	May 7, 2018	Initial draft
Anthony Brown	August 9, 2018	Revisions
James Lloyd	August 21, 2018	QA/QC
Anthony Brown	October 4, 2018	Questions addressed
James & Anthony	October 8, 2018	Question / Answer revision

Description

Pinellas County has identified potential customizations that they are interested in having Woolpert develop as part of their enterprise-wide Cityworks deployment. This document provides the technical details for the PCR Administrator Interface.

Pinellas County requires implementation of a Woolpert-developed set of cascading dropdown fields on work order records in Cityworks. These fields provide related input pick lists that are used on corrective work orders to capture the problem, the cause related to the problem, and the remedy used to correct the problem. These values are tailored to each work order template.

Cityworks does not provide a user interface (UI) to manage the Problem Cause Remedy (PCR) data. This document describes the requirements for the development of a UI to managing the PCR data.

Functionality

This interface should augment Cityworks Designer functionality and will include a custom menu button in the Designer screen for easy access by the Cityworks administrator. The interface will be web-based and generally function as an integrated part of Cityworks Designer.

The primary function of this interface is to manage the contents of the custom database table PROBLEMCODES.

The following image shows a sample of the contents of the custom database table:

CATEGORYID	CATEGORY	PROBLEM	CAUSE	REMEDY	ID	DOMAIN	DIVISION
97	27	MANHOLE COVER	BROKEN/ CRACKED	REPLACE BASE/FRAME	203	2	UTIL-MAINT
98	27	MANHOLE COVER	LOOSE	ADJUST	204	2	UTIL-MAINT
99	27	MANHOLE COVER	LOOSE	REPLACE BASE/FRAME	205	2	UTIL-MAINT
100	27	MANHOLE DAMAGED	CORROSION	REPAIR	206	2	UTIL-MAINT
101	27	MANHOLE DAMAGED	CORROSION	REPLACE BASE/FRAME	207	2	UTIL-MAINT
102	27	MANHOLE DAMAGED	IMPROPER INSTALL	REINSTALL	208	2	UTIL-MAINT
103	27	MANHOLE DAMAGED	ROOTS IN SYSTEM	LINE	209	2	UTIL-MAINT
104	27	MANHOLE DAMAGED	ROOTS IN SYSTEM	REMOVE	210	2	UTIL-MAINT
105	27	MANHOLE HEIGHT	ELEVATION	LOWER	211	2	UTIL-MAINT
106	27	MANHOLE HEIGHT	ELEVATION	RAISE	212	2	UTIL-MAINT
107	27	MANHOLE INFILTRATION	LOOSE	ADJUST SEAL	213	2	UTIL-MAINT
108	27	MANHOLE INFILTRATION	LOOSE	REPLACE BASE/FRAME	214	2	UTIL-MAINT
109	27	MANHOLE INFLOW	COVER	INSTALL NEW	215	2	UTIL-MAINT
110	27	MANHOLE INFLOW	COVER	REPLACE BASE/FRAME	216	2	UTIL-MAINT
111	27	MANHOLE INFLOW	DESIGN	REDESIGN	217	2	UTIL-MAINT

The interface will include pick-lists that allow the user to easily select existing custom field categories, domain, and division values.

The custom field categories will be managed using existing Cityworks Designer tools.

Functional Requirements

The following table lists the required functional requirements of this customization:

Table 2: Functional Requirements

Function Requirements	
ID	Description
FR 1.	Add, update, delete PCR related values.
FR 2.	Provide pick-lists for all related values to include CATEGORY, DOMAIN, DIVISON
FR 3.	Button added to Designer screen for access to interface.

Estimated Schedule and Level of Effort

Table 3: Estimated Schedule and Level of Effort

Task Name	Duration	Cost
Pinellas County EAM Implementation Track 1 PCR Admin Tool	13.5 days	\$21,929.34
Develop design mock-ups	1 day	\$3,183.82
County to Accept	0.5 days	\$1,808.50
Develop Code	10 days	\$11,461.00
Deploy code to County environment	0.5 days	\$1,375.32
Testing	1 day	\$2,292.20
Documentation	0.5 days	\$1,808.50
County to Accept	0 days	\$0.00

Assumptions

Table 4: Systemic Assumptions

Assumptions	
ID	Description
A1	Custom fields will continue to be managed & maintained within Designer; as well as the association of Custom Field Categories to the Work Order Templates.
A2	Woolperts' custom PCR solution is deployed to the Cityworks instance.
A3	Custom field categories will continue to be managed using build-in Cityworks Designer tools.
A4	ID value in the PROBLEM_CODES table is an auto-incremented system value.
A5	Woolpert will provide source code to the County.



Specifications and Scope

Cityworks Track 1 Customizations
Work Order Priority Automation

Pinellas County

October 2018

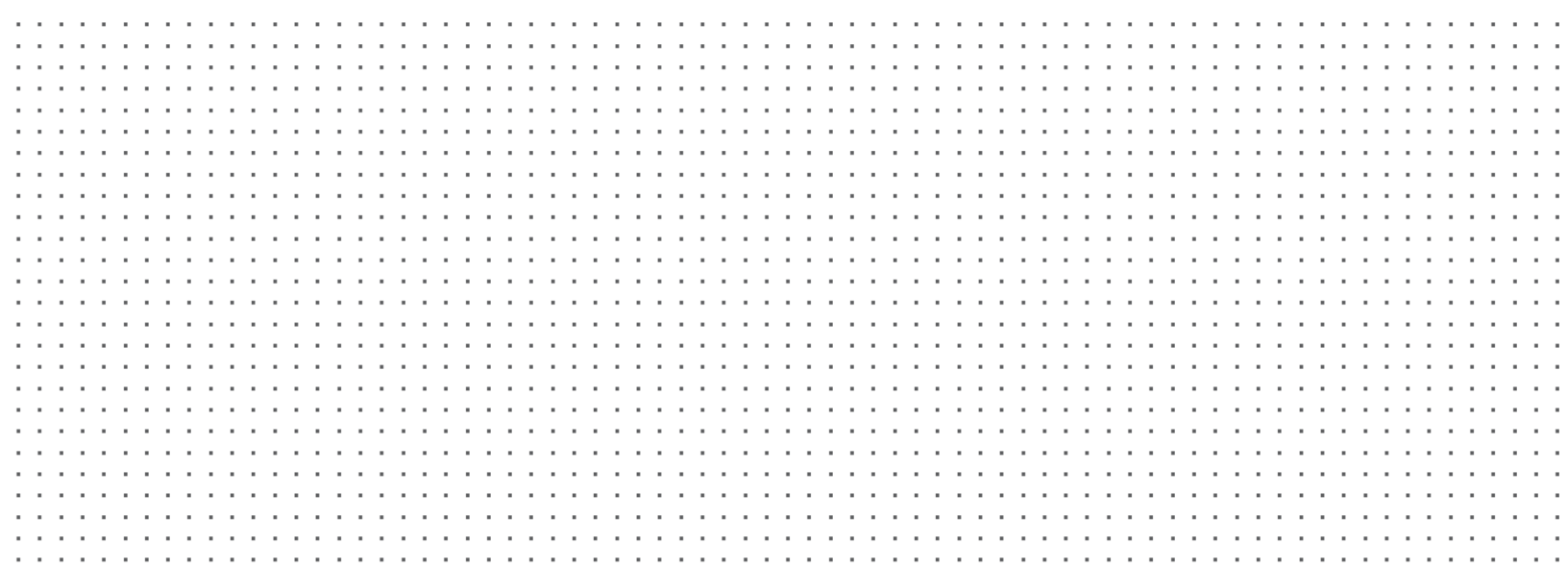


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Revision History and Change Control

Name	Date	Change
James Lloyd	June 7, 2018	Initial draft
James Lloyd	August 21, 2018	QA/QC
Anthony Brown	October 2, 2018	Questions Addressed
James & Anthony	October 8, 2018	Formatting Adjustment

Description

Pinellas County has identified customizations that they are interested in having Woolpert develop as part of their enterprise-wide Cityworks deployment. This document provides the technical details for the Work Order Priority Automation customization.

This customization involves scripting that will automatically set the priority value on a work order based on the value of the asset criticality value combined with the work order category.

Asset Criticality

Assets in the GIS have an attribute field called “Criticality”. This numeric value, unless manually set, is a calculated field and a function of “Likelihood of Failure” value multiplied by the “Consequence of Failure” value. These two values are impacted by other details of the asset that may include install date, material, proximity or service to critical infrastructure or customers. The potential asset criticality values the County has established as an enterprise range for all assets is one (1) to five (5) with one (1) being the lowest impact in the event of a failure and five (5) being the highest.

Work Category

Each work order template in Cityworks has been configured with a default work category value. The following table lists each category, their basic definition, as well as the score value assigned to each:

Table 4: Work Categories

Work Category	Work Priority Score
<p>Reactive Action Repairs that are completed either after the asset has already failed, is close to breaking down, impacts safety or does not meet the required level of service. This type of maintenance is generally unplanned, can be carried out in response to service requests, requires an immediate response and may result in a break of scheduled work. <i>These</i> activities, although corrective in nature, do not generally result from preventive maintenance work and focus on restoring the asset to operating conditions and to maintain its level of service, security, and integrity.</p>	3
<p>Corrective Action Activities generated from preventive/predictive maintenance inspections, routine operational requests, and routine service requirements carried out prior to the asset failing. These activities make up the maintenance backlog and typically are planned and scheduled in advance.</p>	3
<p>Preventive Action Performance of regularly scheduled maintenance activities on an asset to prevent the possibility of malfunctions and failures, to extend asset life, and to reduce maintenance and operating costs. Activities such as inspections, tests, service, replacement, repairs and other tasks performed as cyclic work intended to help reduce the impact and frequency of asset failures.</p>	2

<p>Predictive Action Activities which allow failures to be forecasted through analysis of asset’s condition. The analysis is generally conducted through some form of trending of a parameter, such as vibration, temperature, flow, sonics and oil analysis. Preventive maintenance differs from predictive maintenance in that it focuses on time-based tasks, whereas PdM uses some form of technology or measurement to allow assets to be repaired at times that do not interfere with production schedules. An extension of PdM is condition-based maintenance, which is maintenance performed as needed based on an asset’s condition score.</p>	1
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Functionality

This customization will multiply the work category score by the asset criticality score. The product range determines the resulting work order priority.

The table below illustrates the resulting work order priority values that are to be computed and set based on this calculation:

		Work Category			
		3 Reactive / Corrective	2 Preventive	1 Predictive	
Asset Criticality	5	15	10	5	Adjusted Work Order Priority EMERGENCY: 15 HIGH: 8, 9, 10, 12 MEDIUM: 5, 6 LOW: 1, 2, 3, 4
	4	12	8	4	
	3	9	6	3	
	2	6	4	2	
	1	3	2	1	

For example: If a work order with a default status value of LOW and a work category 1 (predictive) is attached an asset with a criticality value of 5, the resulting value of 5 (green box, top-right) means that the new work order status will be set to MEDIUM.

Functional Requirements

The following table lists the required functional requirements of this customization:

Table 5: Functional Requirements

Function Requirements	
ID	Description
FR 1.	Work order templates that have a default priority of “EMERGENCY” will be exempt from this automation. When created, the priority on these work orders will remain at the EMERGENCY level unless manually lowered by the Cityworks user.
FR 2.	This functionality will execute when a work order is created, and/or an asset is attached.

FR 3.	If the asset criticality value on the asset or assets attached to a work order are null, the functionality will not adjust the work order status value.
FR 4.	If there are multiple assets on a work order, this customization will use the highest asset criticality value of the assets attached for the computation.
FR 5.	If a user manually selects a different work order priority, the customization will not re-compute the priority.
FR 6.	If the user manually selects a different work category, the customization will re-compute the priority.

This customization will consist of custom JavaScript code. The code will reside on the Cityworks application server. The code will be linked into Cityworks by modifying Cityworks-supplied XML files. The XML files are part of the core Cityworks software and are used to configure minor modifications to the application interface.

In addition, this customization will employ the use of server-side technologies to include webservices.

Estimated Schedule and Level of Effort

Table 4: Level of Effort

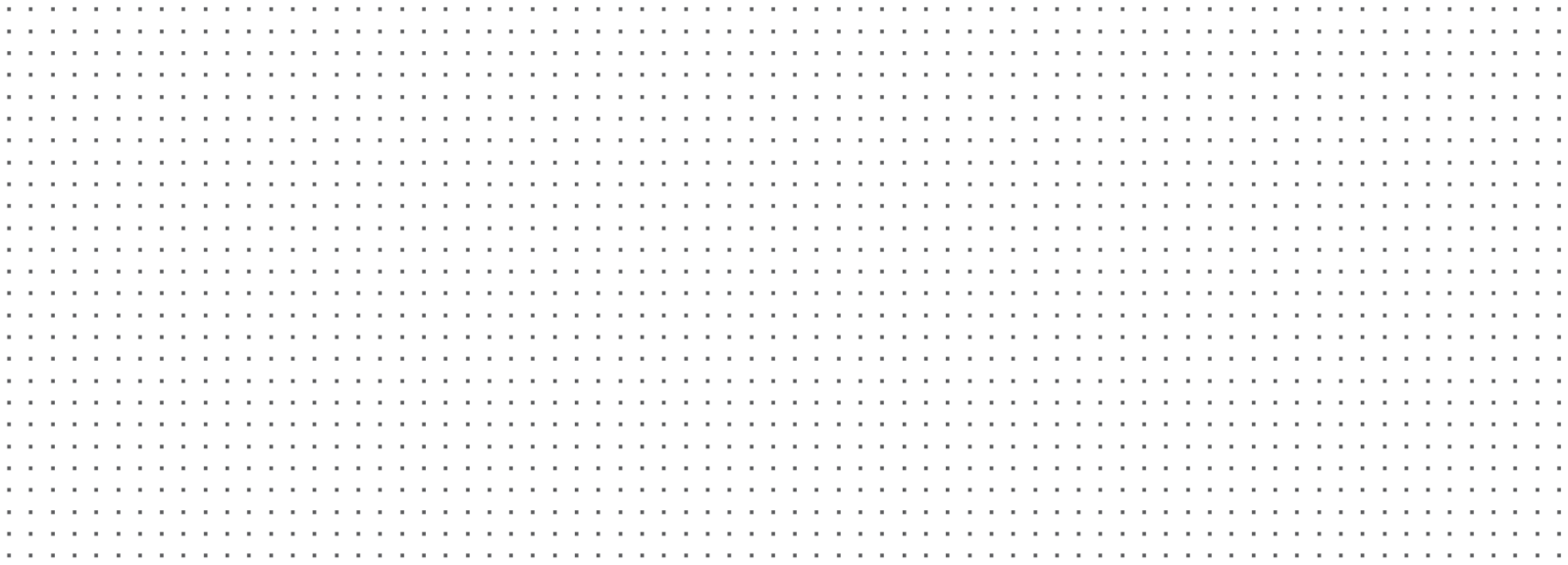
Task Name	Duration	Cost
Pinellas County EAM Implementation Track 1 WO Priority Automation	13.5 days	\$24,234.17
Develop design mock-ups	1 day	\$2,508.79
County to Accept	0.5 days	\$1,808.50
Develop Code	10 days	\$14,211.64
Deploy code to County environment	0.5 days	\$1,375.32
Testing	1 day	\$2,292.20
Documentation	0.5 days	\$2,037.72
County to Accept	0 days	\$0.00

Assumptions

Table 5: Systemic Assumptions

Assumptions	
ID	Description
A1	The County is responsible for computing and populating the GIS with any asset criticality values.
A2	Woolpert will develop and deploy this customization in the test, development, and production environments.

A3	Woolpert will provide custom code to the County.
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PINELLAS COUNTY



Specifications and Scope

Cityworks Track 1 Customizations

Service Request & Work Order – Employee Historical Rates Updating & Tracking

Pinellas County

October 2018

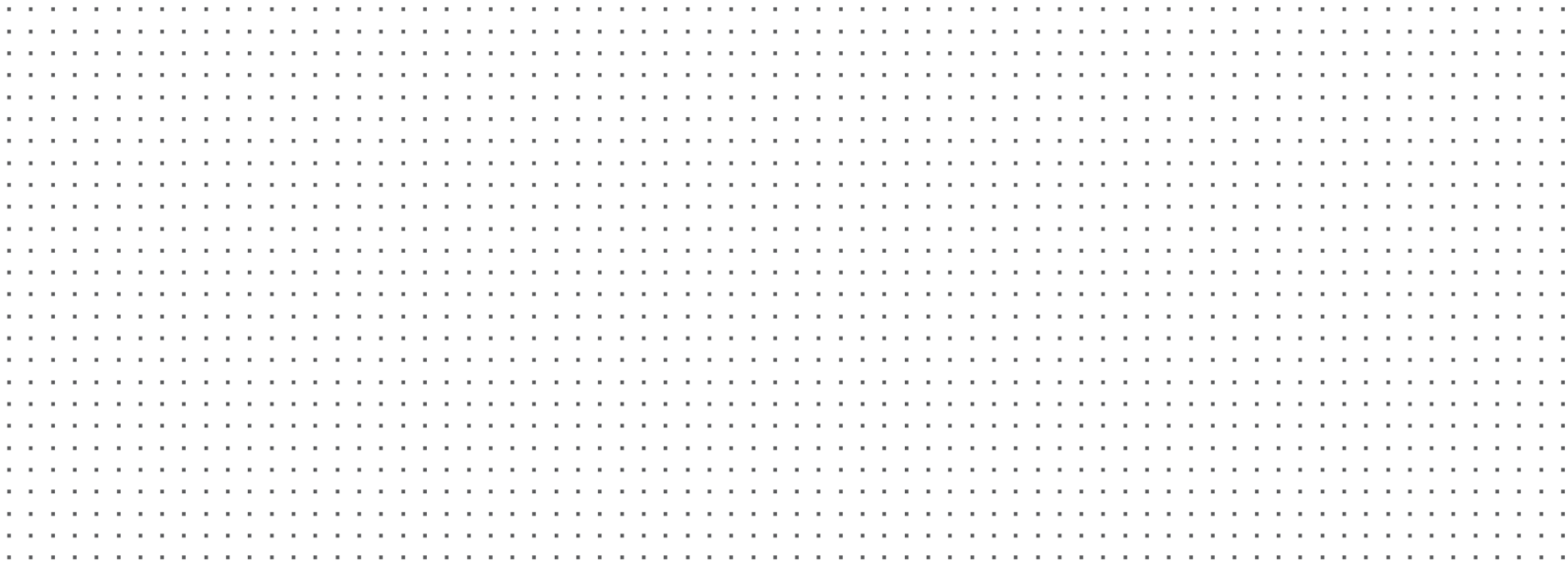


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Revision History and Change Control

Table 6: Revision History		
Name	Date	Change
Anthony Brown	August 8, 2018	Initial draft
James Lloyd	August 21, 2018	QA/QC
Anthony Brown	October 4, 2018	Questions Addressed
James Lloyd	October 4, 2018	Questions Addressed
James & Anthony	October 8, 2018	Questions & Answers, Formatting Adjustments.

Description

Pinellas County has identified customizations that they are interested in having Woolpert develop as part of their enterprise-wide Cityworks deployment. This document provides the technical details for the Employee Historical Rates Tracking customization.

Pinellas County has engaged Woolpert for a large-scale implementation of a Cityworks Asset Management System and integration with several enterprise software systems. To coordinate with the OPUS Employee integration as well as to provide additional reporting capabilities for Cityworks, the need to capture additional transactional rate information was identified. See the OPUS/LDAP – Cityworks Employee Integration SRS document for specific details of the OPUS Employee integration with Cityworks.

The integration will set new or update existing employees and corresponding rate values in Cityworks configuration tables. The integration will populate the internal rate for all employees and multiplier values for external cost charge. The external charge computations will be visualized via custom reports (to be developed during Reports / Metrics Development tasks).

The integration does not track historical rates. These rates are overwritten when the integration updates an employees' rate values. Also, when a Cityworks administrator manually adds or edits employee rate values, the system does not maintain the history of the changes.

This customization proposed the creation of a custom table to house the rate values for all employees and persist the historical values. Any custom reports will leverage this custom table to produce accurate reports using the rates and multipliers that were in effect for the time the work records were produced.

Functionality

A trigger will be developed and applied to the "EMPLOYEE" table. When a new employee is added to Cityworks, and rate values added, the trigger will populate the custom table with the required values.

Data will be collected by one (1) custom created table. The custom table will reside in the Cityworks database.

Functional Requirements

The following table lists the required functional requirements of this customization:

Table 2: Functional Requirements

Function Requirements	
ID	Description
FR 1.	Custom table will be created to house historical rates for all employees.
FR 2.	Custom table will reside in the Cityworks database.
FR 3.	Insert Trigger – Populates Custom Table when employee rate value(s) added.
FR 4.	Update Trigger - Populates Custom Table when employee rate value(s) updated.
FR 5.	Fields required: <ul style="list-style-type: none"> • EMPLOYEESID decimal (10,0) • EXTERNAL decimal (7,2) • INTERNAL decimal (7,2) • EDITDATE (datetime) • FIRSTNAME nvarchar (15) • MIDDLEINITIAL nvarchar (2) • LASTNAME nvarchar (15)

Estimated Schedule and Level of Effort

Table 3: Level of Effort

Task Name	Duration	Cost
Pinellas County EAM Implementation Track 1 Employee Historical Rates Tracking	1 day	\$2,954.60
Develop Custom Table	0.25 days	\$687.66
Develop Custom Trigger	0.25 days	\$687.66
Deploy code to County environment	0.13 days	\$229.22
Testing	0.13 days	\$229.22
Documentation	0.25 days	\$1,120.84
County to Accept	0 days	\$0.00

Assumptions

Table 4: Systemic Assumptions

Assumptions	
ID	Description
A1.	Historical Employee Rates may be overwritten nightly by the OPUS Employee integration.
A2.	Custom reports developed that require employee rates will use the custom table as the source for labor cost computations.
A3.	Woolpert will provide source code to the County.

