



City of Palo Alto

City Auditor's Office

Utility Work Order Process &
Control Review

August 9, 2022

Executive Summary

Purpose of the Audit

The purpose of the audit was to gain an understating of the City's utility work order processes, evaluate the effectiveness of relevant internal controls and evaluate the City's utility work order processes against best practices.

Report Highlights

Baker Tilly performed an analysis of the utilities work order processes and controls through sample-based testing, review of policy and procedure documentation and walkthroughs with key process owners. The "Audit Results" section of this report shows the detailed observations and recommendations based on our review. The following table highlights the four main recommendations (major themes) of these observations and recommendations.

Note: In practice, the City generally refers to capital and customer work orders as "service orders" and maintenance jobs as "work orders". Throughout this report we will refer to both as "work orders" and will identify if we are only referring to one or the other.

Category/Theme	Page	Recommendation
Internal Approvals	Pg. 7, 8	We recommend that all work orders (including O&M) be approved by someone that has budget responsibility or the ability to approve unbudgeted maintenance work. Any design changes made after the initial approval should be approved by an engineer or supervisor as changes in the field are a safety issue for service and could impact other areas that the field crew may not be aware of. Once the work order is complete, the supervisor should review all labor, materials, and 3 rd party invoices for accuracy and ensure any as-built documentation is correct. All of the above reviews and approvals should be evidenced in writing.
System Utilization	Pg. 8	<p>We recommend the electric utility consider evaluating whether SAP has the capability to effectively track work orders to avoid using side systems. The electric utility should also evaluate whether implementing SoGen, the system used by the water, gas, and wastewater utilities to track work orders, would allow for easier, more accurate work order tracking. A system with the ability to schedule work orders based on priority will also ensure there is not unnecessary downtime or overburdening of worker time.</p> <p>Palo Alto utilities should also consider developing an interface between the handheld devices used by the crew in the field and SoGen to eliminate duplicate processes and allow stakeholders access to the most up-to-date information as changes are being made in real time.</p>
Recording & Reconciling Assets	Pg. 7, 8	We recommend work orders be closed and capitalized monthly to prevent a backlog and to ensure depreciation starts immediately when the asset is placed in service. The utilities should perform a full system reconciliation of assets in AME and SoGen to ensure assets are accurately recorded. Assets in AME and SoGen should continue to be reconciled on an annual basis (or cycle counts can be performed monthly where a certain type of asset is counted each month). In addition, all reconciliations of the assets under construction account and asset accounts should be performed on a monthly basis to ensure monthly financials are accurate.
Key Performance Indicators	Pg. 8	We recommend that the electric utility develop and track maintenance and construction KPIs similar to those tracked by the water, wastewater, and gas utilities. In addition, all utilities should consider developing additional KPIs as identified in Appendix D.

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Introduction

Objective

The purpose of the audit was to gain an understating of the City's utility work order processes, evaluate the effectiveness of relevant internal controls and evaluate the City's utility work order processes against best practices.

Background

The City of Palo Alto Utilities (CPAU) offers its residents and businesses a suite of utility services, including electricity, natural gas, water, and sanitary sewer. The CPAU's mission statement is to "provide safe, reliable, environmentally sustainable and cost-effective services." Disruption in services can result in the CPAU's inability to meet its customer's needs and impact the reliability of its services.

All four utilities have a similar organizational structure around the work order process which includes designers, engineers, project utility coordinators, operations crew, and accountants who all play a vital role in ensuring that utility services are provided in a manner consistent with CPAU's mission. The electric utility follows a slightly different process and uses different software systems than the water, gas, and wastewater utilities. The detailed processes around work orders for all utilities can be found in [Appendix A](#) of this report.

To ensure CPAU continues to meet its mission, and mitigate risks, the City engaged Baker Tilly to conduct an internal audit that would focus on current utility work order processes. This decision was in conjunction with a broader, Citywide audit plan detailing the potential risks facing each department. Baker Tilly performed a citywide risk assessment that assessed a wide range of risk areas, including strategic, financial, operational, compliance, technological, and reputation risks. The purpose of the assessment was to identify and prioritize risks to develop the annual audit plan.

During the FY2021 risk assessment, Baker Tilly identified a utility risk related to work order processes. With customers' utility needs, it is vital that work order processes operate optimally.

In order to properly assess the CPAU's work order processes, Baker Tilly reviewed a sample of electric, gas, water and wastewater work orders for compliance with internal processes and controls. We also evaluated the City's utility work order processes against best practices. For additional details, please review the [Detailed Testing & Analysis](#) section.

Scope

The scope of this engagement includes work orders for the Electric and Wastewater, Gas and Water (WGW) departments opened between 1/1/21 and 2/21/22.

Compliance Statement

This audit activity was conducted from January 2022 to May 2022 in accordance with generally accepted government auditing standards, except for the requirement of an external peer review¹. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The team at CPAU was very proactive and involved in the engagement that allowed for clear communication and support for Baker Tilly's team. CPAU was always available to provide additional support and hands on explanations on the work order processes.

The Office of the City Auditor greatly appreciates the support of the CPAU in conducting this audit activity.

Thank you!

¹ Government auditing standards require an external peer review at least once every three (3) years. The last peer review of the Palo Alto Office of the City Auditor was conducted in 2017. The Palo Alto City Council approved a contract from October 2020 through June 2022 with Baker Tilly US, LLP (Baker Tilly) and appointed Kyle O'Rourke, Senior Consulting Manager in Baker Tilly's Public Sector practice, as City Auditor. Given the transition in the City Audit office, a peer review was not conducted in 2020 and will be conducted after the third year of Baker Tilly's contract.

Detailed Testing & Analysis

Methodology & Approach

The objectives of the Utility Work Order Process Review are to:

- (1) Determine whether adequate controls around the work order process are in place and working effectively
- (2) Assess the work order process against best practices

Our review scope includes the following:

- Interview the appropriate individuals to understand the process, the information system used, and internal controls related to the work order process
- Review policies and procedures as well as the regulations and standards to identify the criteria to be used for evaluation of control design and effectiveness
- Perform a test of key internal controls on a sample basis
- Compare the process and controls against best practices

To evaluate work order controls, audit testing was conducted on a sample of electric, water, gas and wastewater work orders. In addition, common work order best practices were identified and compared to the City's utility work order processes identified in this audit. Additional information regarding the testing approach and methodology can be found in the [Audit Testing](#) section.

In order to properly evaluate the work order process and internal controls, the specific approach included the steps noted below.

Audit Planning

- Conduct research and gather information to understand the current environment
- Assess audit risk
- Develop an audit planning memo and program
- Conduct kick-off meeting with key stakeholders

Control Review and Testing

- Gather information to understand the environment under review
- Conduct interviews with key process owners and management
- Assess risks and identify controls in place
- Perform testing of key controls around work orders
- Identify work order best practices and compare with current utility work order processes

Reporting

- Develop findings and recommendations based on supporting evidence
- Validate documented findings
- Develop and validate a draft audit report
- Finalize report with management responses
- Review and finalize report with the City Council and/or appropriate Council Committee

Audit Testing

Introduction

In order to achieve the objectives of the engagement, Baker Tilly developed an audit testing approach and methodology that would test the design and operational effectiveness of controls and identify control gaps and unmitigated risks around utility work order processes.

Approach & Methodology

In order to evaluate CPAU's control environment, Baker Tilly developed process flowcharts based on process documentation and interviews with key process owners. The process flowcharts were developed to document known risk, and mitigation practices based on CPAU's information and identify opportunities and improvement areas. In addition, the process flowcharts were used to facilitate the risk assessment and note the risks for the current work order processes, identify control gaps, and determine key risk and control areas for audit testing. The detailed process flowcharts can be found in [Appendix A](#).

Sampling Methodology

CPAU provided a list of all work orders opened from 1/1/2021 through 2/12/2022. Using the AICPA Statistical Sample Sizes for Test of Controls grid with the following parameters (90% confidence level, 9% tolerable rate of error, with 0% expected deviation) a sample size of 25 was established. Samples were selected using auditor judgment with a focus on ensuring a variety of work order types (differing utilities, capital vs. O&M). Because the work order process for the electric utility differs from the other utilities, we selected 12 electric work orders and 13 WGW work orders for our control testing. The work orders selected for detailed control testing can be found in Appendix B.

Additional Review

In addition to testing sample work orders for the key controls currently in place, we also identified process and control improvement recommendations based on best practices. As part of the best practices review, we identified common work order best practices and compared them to the utilities' current work order processes and controls. Best practices also include the use of Key Performance Indicators (KPIs). We identified common work order related KPIs and determined whether such KPIs were in use.

Audit Results

During our process walkthroughs, we identified six key controls that Palo Alto currently has in place around the work order process. Some controls only apply to a certain utility or only apply to capital work orders. As such, not all controls are applicable for each of our sampled work orders. The controls tested, results of each test, and our recommendations for improvement are shown in the table below.

Control #	Control Description	# of sampled work orders where control is applicable	# of deficiencies	Result	Recommendation
1	All capital work orders require supervisor approval before work can be performed.	21	3	Maintenance work for water, gas, and wastewater do not require approval. Of the 21 sampled work orders that currently require approval, 3 did not have appropriate signature approval on the work order. All 3 were capital work orders.	We recommend that all work orders (including O&M) be approved by someone that has budget responsibility or the ability to approve unbudgeted maintenance work. Approval should be evidenced in writing.
2	For development services projects, a permit must be reviewed and approved before work can begin.	10	0	10 of our sampled work orders were for development services projects and all but one had an approved permit prior to work being performed.	None
3	For customer work orders, customer payment must be received before work can begin.	9	0	9 of our sampled work orders were for customer services and all had customer payment received before work began.	None
4	The Supervisor reviews the completed work order and as-built forms for accuracy.	25	5	2 of the 25 sampled work orders did not have a signature showing review of the completed work order. We also noted 3 work orders that had a signature showing a review was performed, however, there were costs which were incorrectly recorded to the wrong work order indicating the review may not be performed at a detailed enough level and could be improved.	The review performed by the Supervisor should include review of all labor and materials including 3rd party invoices to ensure all costs are recorded to the correct work order.
5	For electric work orders, the Utility Coordinator completes a checklist to ensure all documents are complete and included in the job packet (control implemented in August 2021).	5	0	Because this control was not implemented until August 2021 and only pertains to electric work orders, this control only applied to 5 of the sampled work orders. All 5 work orders had a completed checklist.	We recommend the Utility Coordinator complete a checklist to show review of verifying completeness of work orders for all utilities.
6	For closed capital work orders, the assets were recorded to an appropriate plant account.	4	0	Costs are capitalized to the asset account on a quarterly basis. As such, only 4 of our sampled capital work orders were closed and recorded to the asset account at the time of our testing. All 4 work orders appeared to be recorded to an appropriate asset account (although not all costs were included as noted in control number 4 above). Per Palo Alto, the additional costs will be recorded in Q3 FY22.	We recommend work orders be closed and capitalized monthly to prevent a backlog and to ensure depreciation starts immediately when the asset is placed in service.

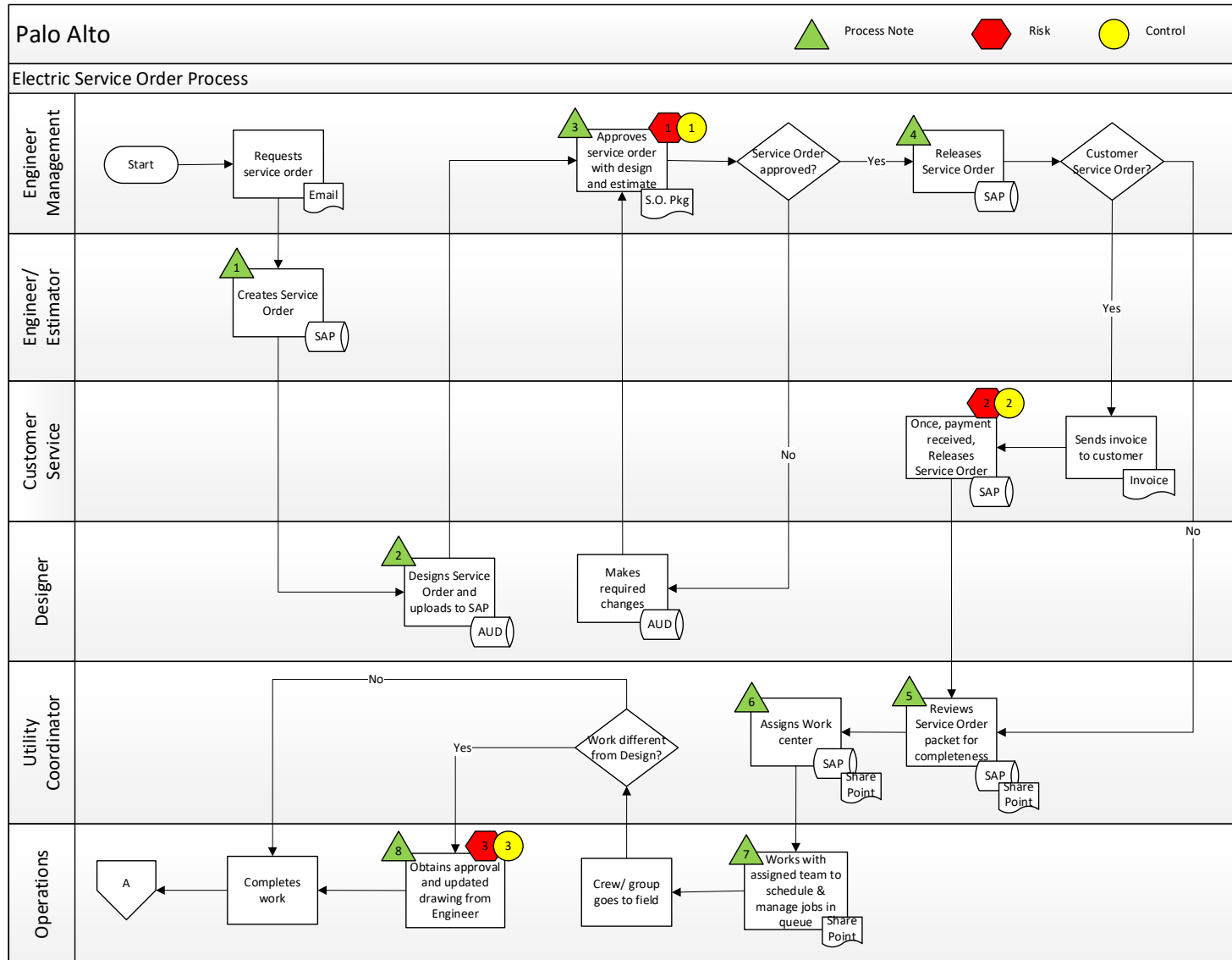
In addition to the sample work order testing performed above, we have developed additional observations and recommendations based on our process walkthroughs with key process owners and compared to best practices. These are shown in the table below.

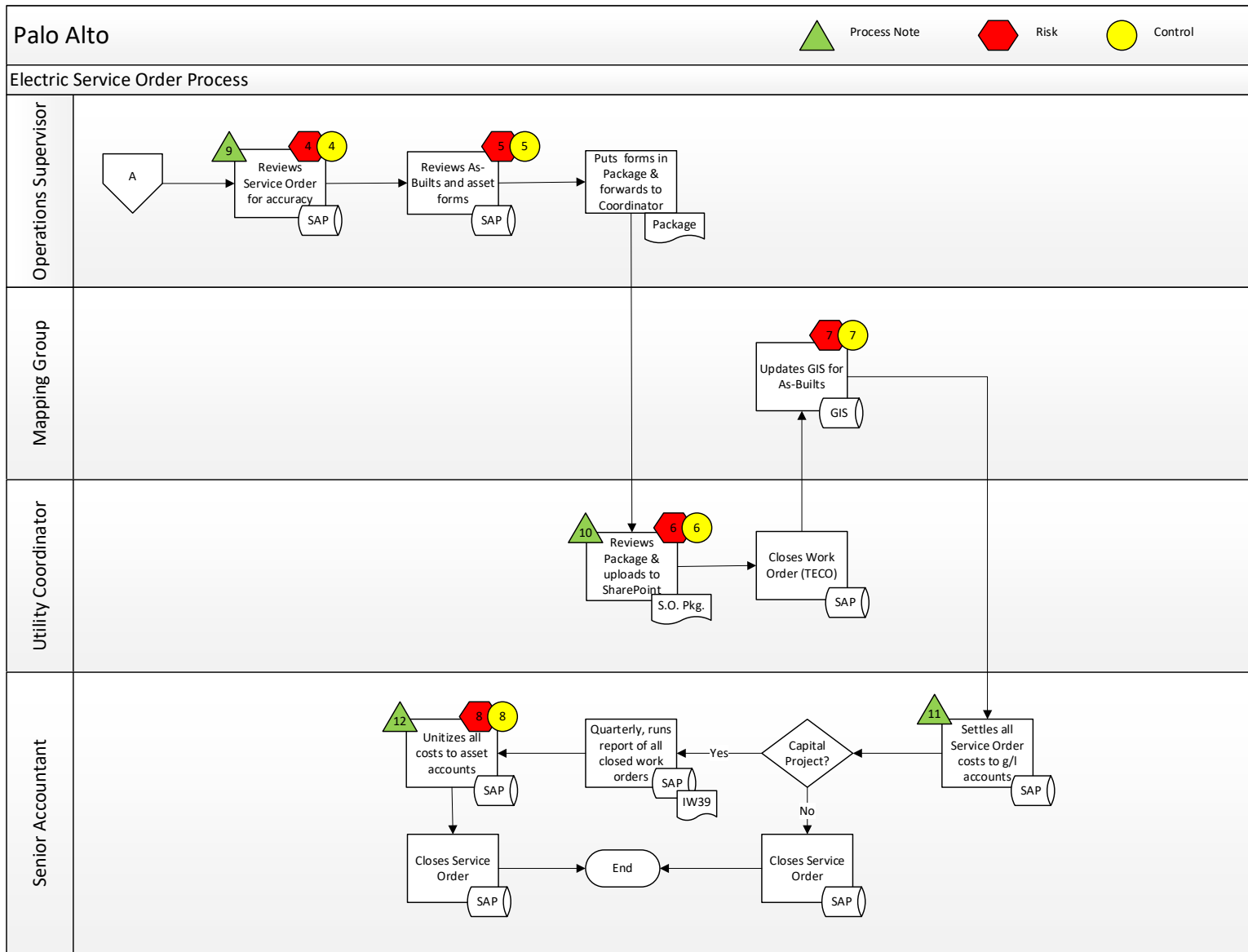
#	Category	Observation	Recommendation
1	System Utilization	<p>Although the water, wastewater, and gas utilities utilize SoGen to track work order progress, the electric utility utilizes SharePoint to share files and track work order status. Scheduling work is often done by the supervisor on a white board.</p> <p>In addition, the operations team has handheld tablets in the field, however, these do not interface with SoGen and they have found that it is easier to handwrite all workorder information manually on paper forms. These paper forms are then given to the utility coordinator to be entered into SoGen, duplicating the data entry function.</p>	<p>We recommend the electric utility consider evaluating whether SAP has the capability to effectively track work orders to avoid using side systems. The electric utility should also evaluate whether implementing SoGen, the system used by the water, gas, and wastewater utilities to track work orders, would allow for easier, more accurate work order tracking. A system with the ability to schedule work orders based on priority will also ensure there is not unnecessary downtime or overburdening of worker time.</p> <p>Palo Alto utilities should also consider developing an interface between the handheld devices and SoGen to eliminate duplicate processes and allow stakeholders access to the most up-to-date information as changes are being made in real time.</p>
2	Design Changes	Currently, only major field changes require approval from the engineering supervisor and that approval is oftentimes provided verbally.	Any design changes should be approved by an engineer or supervisor. Changes in the field are a safety issue for service and could impact other areas that the field crew may not be aware of. All approvals should be evidenced in writing.
3	Recording Asset Additions & Retirements	For water, gas, and wastewater, the asset additions and retirements that the Business Analyst provides to the Accountant for recording is a report from the SoGen system. These costs are settled to accounts in SAP. The Business Analyst indicated that assets may not have been recorded accurately in the past and that AME should be the system of record when recording asset additions and retirements. If assets are not recorded appropriately, financial, and other reporting becomes less reliable.	We recommend that the utilities perform a full system reconciliation of assets in AME and SAP to ensure assets are accurately recorded. Assets in AME and SAP should continue to be reconciled on an annual basis (or cycle counts can be performed monthly where a certain type of asset is counted each month). This reconciliation should be documented and signed-off on.
4	Asset Reconciliations	<p>Asset reconciliations are performed on a quarterly basis. No review of the reconciliation is performed by a separate individual.</p> <p>In addition, the reconciliation process is very manual with the accountant manually entering in numbers instead of using formulas to add the next periods numbers.</p>	<p>All reconciliations should be performed on a monthly basis to ensure monthly financials are accurate. All reconciliations should be reviewed for accuracy by another individual. This review should be evidenced in writing.</p> <p>In addition, Palo Alto should consider using more formulas in the reconciliation to reduce the risk of errors that can be caused by manually entering in numbers.</p>
5	Key Performance Indicators	The water, wastewater, and gas utilities currently utilize key performance indicators (KPIs) to assist with monitoring their performance around project management and operations. An example of some of the KPIs currently being used are shown in Appendix C. It is our understanding that these same KPIs are currently being developed for the electric utility.	We agree that the electric utility would benefit from developing similar KPIs that the water, wastewater, and gas utilities currently use. In addition, the utilities may want to consider adding additional KPIs related to work orders and project management. Example KPIs that the City may want to begin tracking are shown in Appendix D.

Appendices

Appendix A: Process Flowcharts

Below are the process flowcharts developed to identify risks and key controls.







Process Notes

1. When creating the service order, the Engineer identifies it as either capital or maintenance and includes the general ledger accounts the costs should be applied to. The Engineer includes the cost estimate when creating the service order.
2. The Designer includes a Material Release Date in SAP (either June or December) to ensure that the warehouse doesn't pull materials prematurely.
3. The Service Order Package is signed using DocuSign. The Senior Engineer can approve projects up to \$50,000 as long as there are funds in the budget. Projects over this amount need to follow the authority levels shown below:
 - Up to \$50,000 – Senior Engineer
 - Up to \$150,000 – Manager
 - \$150,000 and over – Engineering Manager
4. The service order is released in SAP and SharePoint.
5. The Utility Coordinator verifies that all required information is included and checked off in SAP and SharePoint including the service order type, materials, design/drawings, and the customer payment (if applicable).
6. The Utility Coordinator updates the work center in SAP which designates the group/crew the service order is assigned to. They also change the order status to "open" in SharePoint and indicate the date the service order is assigned. The Utility Coordinator updates the materials date in SAP if not already shown. The group/crew will update the material date when ready so the warehouse knows the materials are needed.
7. The group/crew examine the field conditions before work can be scheduled. For customer service orders, the operations team works directly with the customer to schedule the work. If it is a customer service job with underground work, it goes to the underground Inspection group. There would be an update in SAP showing the inspection is complete.
8. If the change is small, the crew can just make the change. If it is a major change, they call the Engineer for approval and an updated drawing/map.
9. The Operations Supervisor reviews and approves all crew time and ensures they charged the correct service order. They also review all materials and third party invoices for accuracy and that all associated costs are being charged against order (e.g. Crane Rental or PCard/credit card purchases).
10. The Utility Coordinator uses a checklist to ensure all documentation is included in the service order package including map changes.
11. Labor, materials, and overheads are posted to either an O&M account or to Construction in Progress. Service orders are held open for 6 weeks to ensure all costs have been applied.
12. AUD automatically creates an Excel report that shows all additions and retirements when added by the mapping group. These are stored on the network so the Senior Accountant can retrieve the report and unitize the assets.



Risks

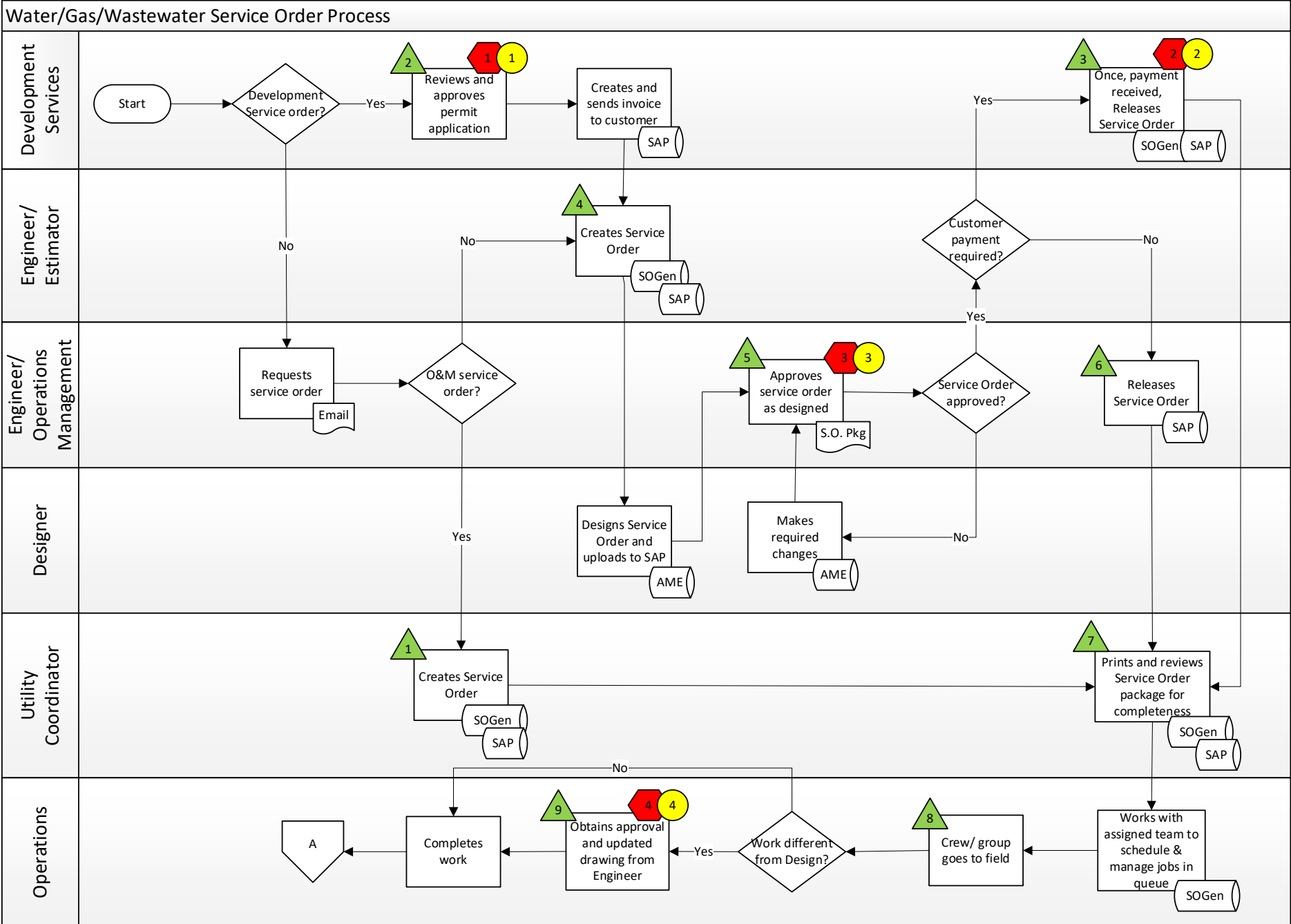
1. Work is performed that is not approved.
2. Work may be scheduled before customer payment is received.
3. The crew may change the design without approval which could cause unsafe materials or designs.
4. Labor and materials may be charged to the incorrect service order.
5. The As-Builts may be incorrect if design changes were made in the field.
6. The service order may be closed without proper documentation of completeness.
7. The GIS mapping system may not display the correct assets in the electric system.
8. Asset additions and retirements may not be recorded or may be recorded to the wrong account.



Controls

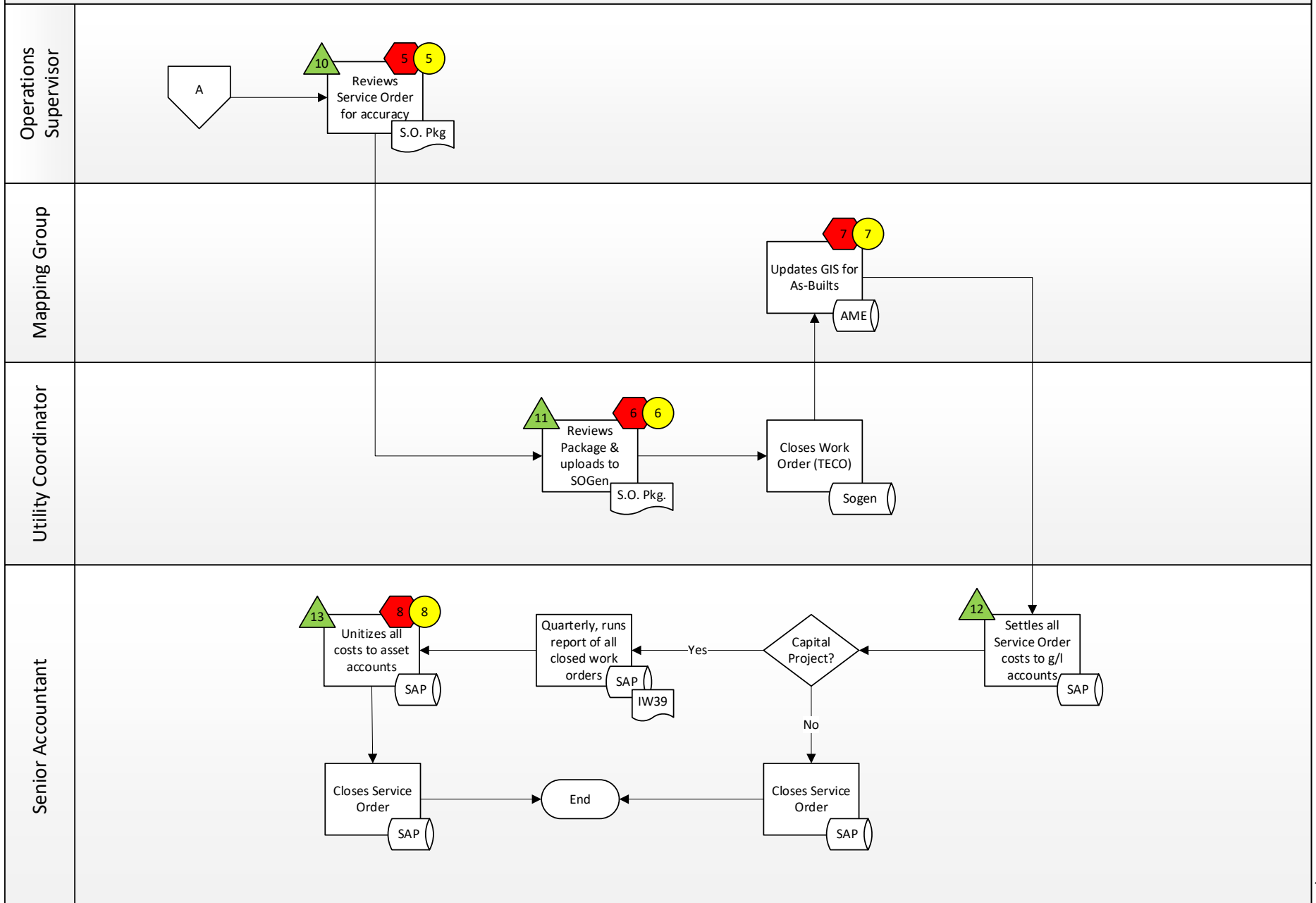
1. All service orders are reviewed and approved by the Senior Engineer prior to work being performed.
2. Customer Service will not release a service order until the customer payment has been received.
3. For major changes, the crew receives approval from the Lead Engineer and receives updated job drawing(s) to reflect changes.
4. The Operations Supervisor reviews and approves all employee timecards and ensures the correct service order was charged. They also review material charges to the service order for accuracy.
5. The Operations Supervisor ensures that the As-Builts match the work that was performed.
6. The Utility Coordinator uses a checklist to ensure all documents are included in the service order package including any map changes.
7. All asset additions and retirements are updated in EEM & GIS to accurately track all electric assets.
8. The Senior Accountant is provided a listing from Engineering showing all asset additions and retirements to ensure proper unitization.

Palo Alto
 Process Note
  Risk
  Control





Water/Gas/Wastewater Service Order Process





Process Notes

1. Anyone in operations can request a service order for maintenance work.
2. The Development Services Engineer reviews the utilities application, request for service including number of meters, construction plans indicating location of services and meters. The Engineer signs off on his review in ACCELA, the permit tracking system.
3. Development Services receives an automated report from SAP daily that shows all payments received.
4. When creating the service order, the Engineer identifies it as either capital or maintenance and includes the general ledger accounts the costs should be applied to. The Engineer includes the cost estimate when creating the service order.
5. The Service Order Package is signed using DocuSign. The Senior Engineer can approve projects up to \$50,000 as long as there are funds in the budget. Projects over this amount need to follow the authority levels shown below:
 - Up to \$50,000 – Senior Engineer
 - \$50,000 and above – Manager
6. The service order is released in SAP and SOGen.
7. The Utility Coordinator verifies that all required information is included and checked off in SAP and SOGen including the service order type and the design/drawings. They also change the order status to “Ops Inspection” in SOGen and indicate the date the service order is assigned.
8. The group/crew examine the field conditions before work can be scheduled. For customer service orders, the operations team works directly with the customer to schedule the work. If it is a service order for new construction, it goes to the Inspector.
9. If the change is small, the crew can just make the change. If it is a major change, they call the Engineer for approval and an updated drawing/map. It is very rare to have a redesign.
10. The Operations Supervisor reviews the service order to ensure that labor and materials are properly recorded and that the As-Builts match the work that was completed.
11. The Utility Coordinator reviews the service order package to ensure all forms are filled out and that maps, photos, and tags are all included.
12. All service orders are closed quarterly in SAP.
13. The Utility Coordinator runs a report of all additions and retirements out of Sogen monthly and emails it to the Accountant to record additions and retirements. For capital improvement projects (CIP), the Engineer provides the Accountant with an Excel spreadsheet that lists the asset additions and retirements to record.



Risks

1. A service order may be created without an approved permit in place.
2. Work may be scheduled before customer payment is received.
3. Work is performed that is not approved.
4. The crew may change the design without approval which could cause use of incorrect materials or designs.
5. A service order may be closed without the appropriate labor, materials, and assets being recorded.
6. The service order may be closed without proper documentation of completeness.
7. The GIS mapping system may not display the correct assets in the w/g/w system.
8. Asset additions and retirements may not be recorded or may be recorded to the wrong account.



Controls

1. All permits are reviewed and approved before a service order is created.
2. Development Services will not release a service order until the customer payment has been received.
3. All service orders for new construction are reviewed and approved by the Senior Engineer prior to work being performed.
4. For major changes, the crew receives approval from the Lead Engineer and receives updated job drawing(s) to reflect changes.
5. The Operations Supervisor reviews the service order to ensure all labor and materials have been recorded. They also ensure that the As-Builts on the service order match the work that was performed.
6. The Utility Coordinator ensures all documents are included in the service order package including any map changes. They also ensure all required checkboxes and forms are complete.
7. All asset additions and retirements are updated in AME to accurately track all assets.
8. The Senior Accountant is provided a report from Sogen by the Utility Coordinator showing all asset additions and retirements to ensure proper unitization. The Engineer provides a schedule showing the asset additions and retirements for CIP project.

Appendix B: Sampled Work Orders

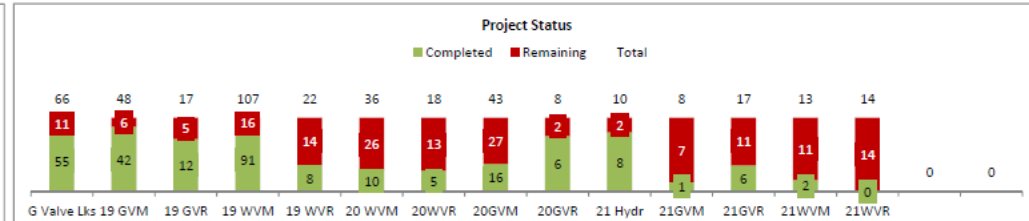
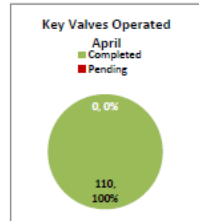
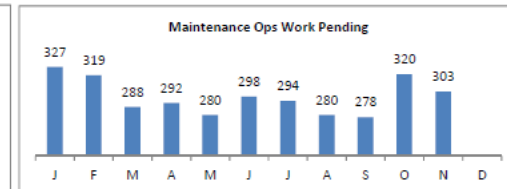
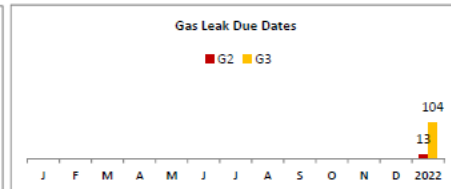
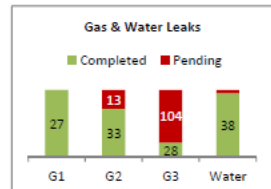
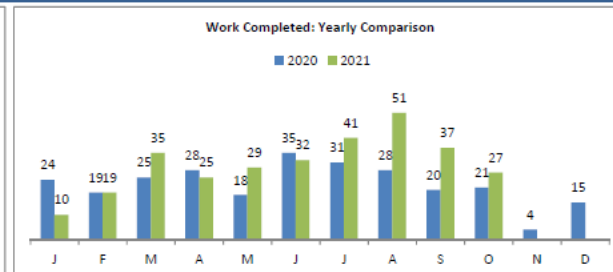
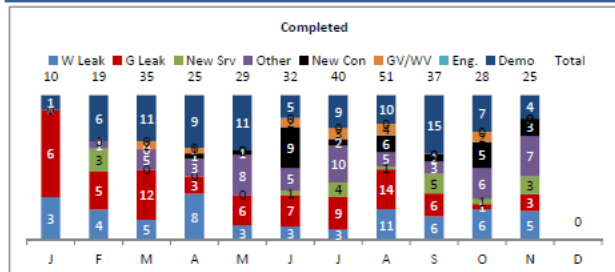
Sample #	Order Type	Order Type Description	Order	Total Actual Costs	WBS Element	Project Description
1	UERE	Electric Reconstruction	40026477	\$ 33,909.46	EL-89044	Substation Facility
2	UGRE	Gas Reconstruction	40026573	\$ 33,819.98	GS-11002	Gas System Improveme
3	UECS	Electric Customer Service	40026526	\$ 30,181.68	EL-89028	Electric Customer Co
4	UWRE	Water Reconstruction	40026411	\$ 24,021.92	WS-80014	Water Hydrant and Va
5	USRE	Wastewater Reconstruction	40026713	\$ 12,408.03	WC-80020	Sewer System, Custom
6	UCM	Utilities Corrective Maintenance Order	50037259	\$ 12,029.75		
7	UECS	Electric Customer Service	40026572	\$ 10,215.60	EL-89028	Electric Customer Co
8	UCM	Utilities Corrective Maintenance Order	50037518	\$ 10,094.45		
9	UWCS	Water Customer Service Order	40026530	\$ 8,935.45	WS-80013	Water System, Custom
10	USRE	Wastewater Reconstruction	40026744	\$ 7,614.81	WC-80020	Sewer System, Custom
11	UWCS	Water Customer Service Order	40026680	\$ 7,573.37	WS-80013	Water System, Custom
12	UGCS	Gas Customer Service Order	40026407	\$ 7,328.00	GS-80017	Gas System, Customer
13	UECS	Electric Customer Service	40026776	\$ 7,015.39	EL-89028	Electric Customer Co
14	UERE	Electric Reconstruction	40026628	\$ 6,900.10	EL-19004	Wood Pole Replacemen
15	UCM	Utilities Corrective Maintenance Order	50037558	\$ 6,747.60		
16	UCM	Utilities Corrective Maintenance Order	50036962	\$ 5,711.71		
17	UERE	Electric Reconstruction	40026983	\$ 5,333.24	EL-19004	Wood Pole Replacemen
18	UECS	Electric Customer Service	40026585	\$ 4,748.07	EL-89028	Electric Customer Co
19	UGCS	Gas Customer Service Order	40026403	\$ 2,958.42	GS-80017	Gas System, Customer
20	USCS	Wastewater Customer Service Order	40026836	\$ 2,169.98	WC-80020	Sewer System, Custom
21	UERE	Electric Reconstruction	40026798	\$ 2,076.36	EL-98003	Electric System Imp
22	USCS	Wastewater Customer Service Order	40026535	\$ 1,932.45	WC-80020	Sewer System, Custom
23	UERE	Electric Reconstruction	40026835	\$ 12,439.56	EL-19004	Wood Pole Replacemen
24	UERE	Electric Reconstruction	40026868	\$ 10,781.31	EL-19004	Wood Pole Replacemen
25	UGRE	Gas Reconstruction	40024105	\$ 113,840.40		

Appendix C: Current KPI's for Water, Wastewater, and Gas – Selected Examples

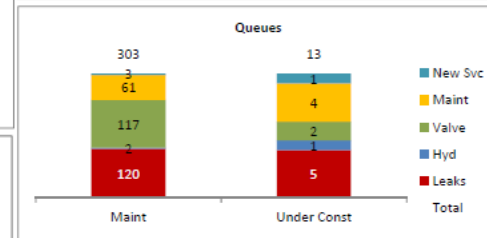
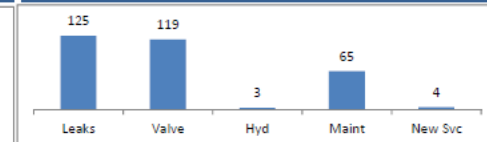
MAINTENANCE DASHBOARD: Nov-21

PERFORMANCE / PRODUCTION

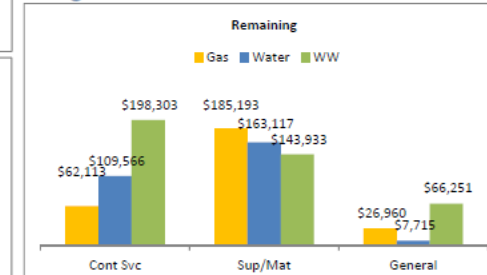
Task



OUTSTANDING WORKLOAD



Budget



LONG TERM PLANNING

Project	Start	End	Actual	Description
Hydrants				
Valve				
Large Meter				
SOP's				

COMPLIANCE REQUIREMENTS

Req.	Req. Date	Actual	Req.	Req. Date	Actual
Key Valves	4/30/21		Welding Re-Qual	10/20/21	11/1/21
Mobile Survey	6/30/21		Walking Survey	12/31/21	
			Gas Exercise	12/31/21	

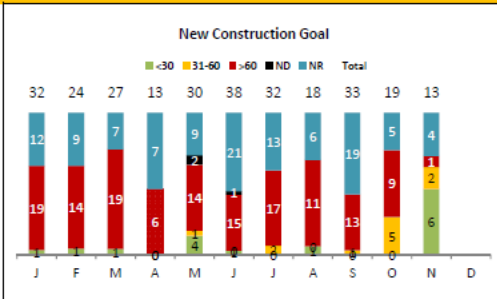
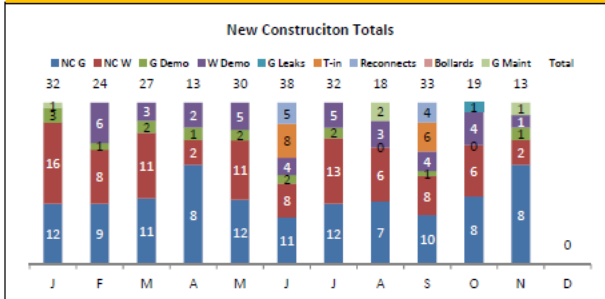
JOURNAL

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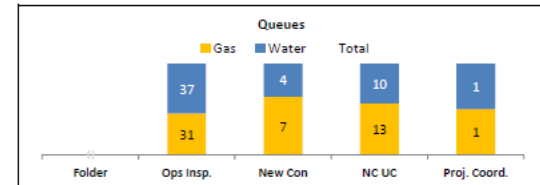
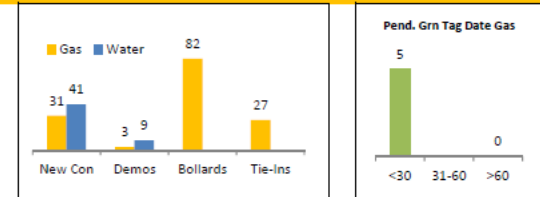
NEW CONSTRUCTION DASHBOARD: Nov-21

PERFORMANCE / PRODUCTION

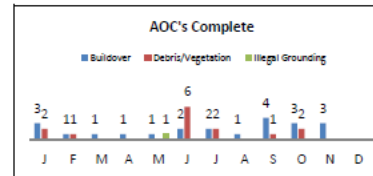
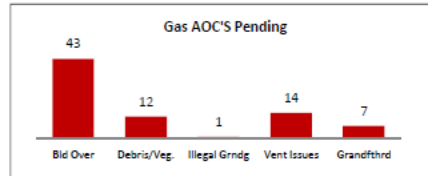
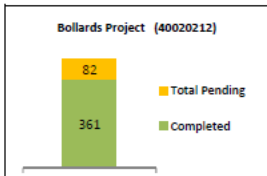
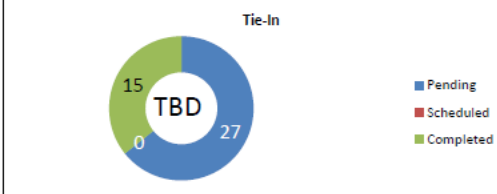
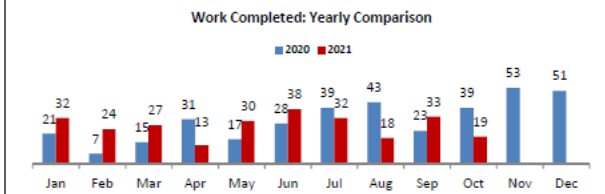
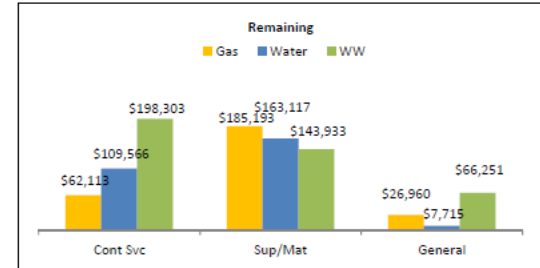
Task



OUTSTANDING WORKLOAD



GAS BUDGET



LONG TERM PLANNING

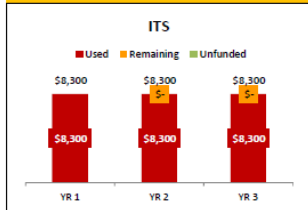
Project	Start	End	Actual	Description
Bollards				AOC project
OQ Shed				Training shed project with Fire Department
SOP's- 5 completed				

JOURNAL

- Daleo working on GMR - 2 new construction crews working
- 3 jobs held up by contractor - still pending
-
-

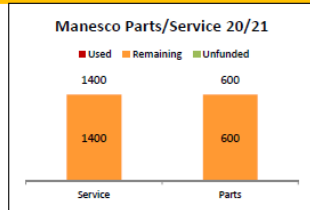
CONTRACT DASHBOARD 1 OF 5: Nov-21

CONTRACTS



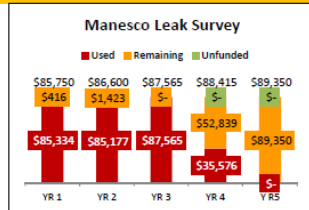
GAS

Vendor: Industrial Train. Svc
Contract Term: 3 Years (3/22 - 2/25)
Currently on: Year 3
Contract Amount: \$ 24,900
Type of Contract: General Services
Type of service: OQ Online CBT/DB
P.O. #: PR 183571
Project Manager: Diamond Perkins
GL: 31990
CostCenter: 20020703
Split? No
Renewal Date: Jul-25
Notes: Sole Source



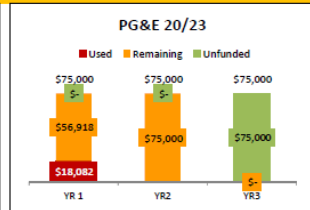
GAS

Vendor: Manesco
Contract Term: 1 year 7/21-6/22
Currently on: Year 1
Contract Amount: \$ 2,000
Type of Contract: Blanket
Type of service: Parts & Service
P.O. #: 4622000028
Project Manager: Melissa Smart
GL: 31250
CostCenter: 20020703
Split? No
Renewal Date: 7/1/2022
Notes: Pays for batteries and service & Calibration to our gas leak detectors



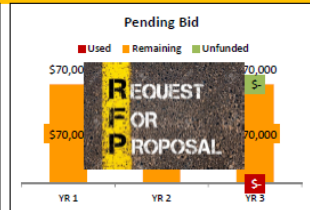
GAS

Vendor: Manesco Corp.
Contract Term: 5 Years (4/2018 - 4/2023)
Currently on: Year 4/5 (Finish yr 4, begin yr 5)
Contract Amount: \$ 437,680
Type of Contract: Services
Type of service: Gas Leak Survey (W&M)
P.O. #: C18169298
Project Manager: Melissa Smart
GL: 31990
CostCenter: 20020703
Split? No
Renewal Date: Nov-22
Notes:



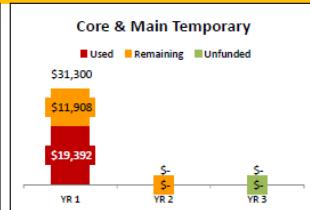
GAS

Vendor: PG&E
Contract Term: 3 Years (7/20 - 6/23)
Currently on: Year 2 (of a 3 yr Sole Source)
Contract Amount: \$ 225,000.00
Type of Contract: Blanket
Type of service: Training
P.O. #1: 4621000077
P.O. #2: 4622000031
Project Manager: Melissa Smart
GL: 31990
CostCenter: 20020703
Split? No
Renewal Date: Jan-23
Notes: Sole Source



WATER / GAS / WASTEWATER

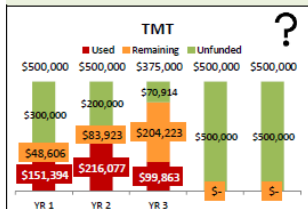
Vendor: Pending Bid
Contract Term: 3 Years (7/21-6/24)
Currently on: Year 3
Contract Amount: \$ 255,000
Type of Contract: Blanket
Type of service: On-call Traffic Control
P.O. #:
Project Manager: Electric Operations/Josh Berta
GL: 31990
CostCenter: 20020904 50%, 20020703 35%, 20021103 15%
Split? Yes
Renewal Date: Jan-21
Notes: This is a shared contract \$70k-WGW, \$15k-Elec



WATER / GAS / WASTEWATER

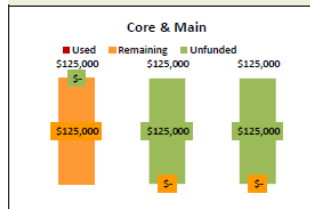
Vendor: Core & Main
Contract Term: Temp
Currently on:
Contract Amount: \$ 31,300
Type of Contract:
Type of service:
P.O. #: 4622000099
Project Manager:
GL:
CostCenter:

Split?
Renewal Date:
Notes:



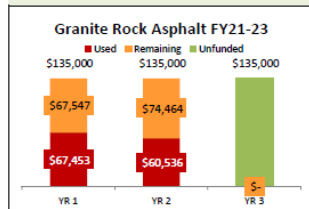
WATER / GAS / WASTEWATER

Vendor: TMT
Contract Term: 5 Years (12/19 - 12/24)
Currently on: Year 2
Contract Amount: \$ 125,000
Type of Contract: Blanket
Type of service: Off Haul
P.O. #: 4621000064
Project Manager: Rui Silva
GL: 32310
CostCenter: 20020904 7%, 20020703 7%, 20021103 11%, 20020201 7%, 20020202 22%, 20020801 24%, 20021001 11%, 20021002 11%
Split? Yes
Renewal Date: Jan-24
Notes: First "year" was only 6 months



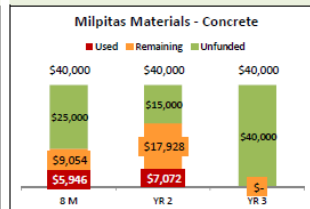
WATER / GAS / WASTEWATER

Vendor: Core & Main
Contract Term: 3 Year
Currently on: Year 1
Contract Amount: \$ 125,000
Type of Contract: Blanket
Type of service: Parts
P.O. #:
Project Manager: Melissa Smart
GL: 32250
CostCenter: 20020703 4.3%, 20020904 82.7%, 20020903 4.3%, 20021103 8.7%
Split? Yes
Renewal Date: Jan-24
Notes: If more Vendors - may not be Sole?



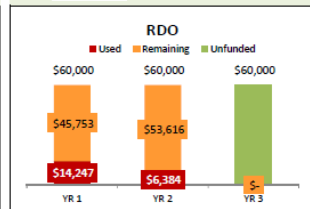
WATER / GAS / WASTEWATER

Vendor: Granite Rock Asphalt
Contract Term: 3 Years (11/2020 - 6/2023)
Currently on: Year 2
Contract Amount: \$ 465,000
Type of Contract: Blanket
Type of service: Asphalt
P.O. #1: 4621000108
P.O. #2: 4622000025
P.O. #3:
Project Manager: Melissa Smart
GL: 32310
CostCenter: 20020703 33%, 20020904 33%, 20021103 34%
Split? Yes
Renewal Date: Jan-23
Notes: Contract shared with Public Works
RFQ-169813



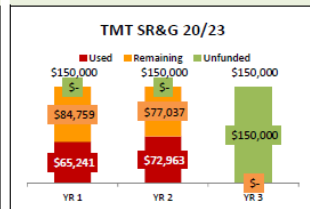
WATER / GAS / WASTEWATER

Vendor: Milpitas Materials
Contract Term: 3 Year 1/1/2021-06/30/23
Currently on: Year 2
Contract Amount: \$ 40,000.00
Type of Contract: Blanket
Type of service: Portland Cement
P.O. #1: 4621000118
P.O. #2: 4622000023
P.O. #3:
Project Manager: Melissa Smart
GL: 32310
CostCenter: 20020904 33%, 20020703 33%, 20021103 34%
Split? Yes
Renewal Date:
Notes:



WATER / GAS / WASTEWATER

Vendor: Vermeer Pacific
Contract Term: 3 year (7/20-6/23)
Currently on: Year 2
Contract Amount: \$ 180,000
Type of Contract: Blanket
Type of service: Tools, Fittings, Parts
P.O. #1: 4621000074
P.O. #2: 4622000033
P.O. #3:
Project Manager: Melissa Smart
GL: 32020 60%, 31990 30%
CostCenter: 20020904 10%, 20020703 90%
Split? Yes
Renewal Date: Jan-23
Notes:



WATER / GAS / WASTEWATER

Vendor: TMT
Contract Term: 3 Years 8/20-6/23
Currently on: Year 2
Contract Amount: 450,000
Type of Contract: Blanket
Type of service: Sand Rock & Gravel
P.O. #1: 4621000106
P.O. #2: 4622000029
P.O. #3:
Project Manager: Melissa Smart
GL: 32310
CostCenter: 20020904 26.4%, 20020703 26.4%, 20021103 26.4%, 20020201 14.1%, 20020201 6.7%
Split? Yes
Renewal Date: Jan 2023
Notes:

Appendix D: Potential KPIs for Consideration

KPI	Description	Calculation
Emergency Work	This is a measure of how much unplanned emergency work your maintenance department does.	Emergency Hours Worked / Total Hours
Planned vs Unplanned	This measure is a good indicator of how reactive a work team is, and how much unscheduled work is breaking into the work schedule.	Sum of Scheduled Work Completed (Hours) / Sum of All Work Completed (Hours) x 100
Schedule Compliance	Measure of planning and scheduling quality, whether the work plan is realistic and achievable. It is a good indicator of maintenance effectiveness, whether they are able to complete the work allocated to them.	Sum of Scheduled Work Completed (Hours) / Sum of Scheduled Hours x 100
Maintenance Overtime	Measure of the health of your maintenance organization.	Maintenance Overtime / Total Maintenance Hours Paid
Work order Cycle Time	The objective is to understand how long it takes to complete work, from creation to completion.	Work Order Completion Date – Work Order Creation Date (in days)
Customer Satisfaction	The objective is to score and track how happy your customers are with their service, product, and/or experience. Example: “How would you rate your recent experience with our operations team?” The customer is given a 5-point scale from very unsatisfied to very satisfied.	The total sum of customers who answered with “satisfied” (4) and “very satisfied” (5).

Appendix E: Management Response

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
We recommend that all work orders (including O&M) be approved by someone that has budget responsibility or the ability to approve unbudgeted maintenance work. Approval should be evidenced in writing.	Utilities	<p>Concurrence: Agree</p> <p>Target Date: August 2022</p> <p>Action Plan: Capital and customer service work order packets are prepared by an Estimator/Engineer and approved by Senior Engineer/Supervisor. In Operations all work orders are prepared at the direction of Supervisor, by a Project Coordinator, the work order packet is given to the Supervisor for distribution to the crews. At present, a signature is not required before handing the job packet to the crews. Utilities will add the step requiring the Supervisors to initial the work orders at the time the paperwork is handed off to the crews.</p>
The review performed by the Supervisor should include review of all labor and materials including 3rd party invoices to ensure all costs are recorded to the correct work order.	Utilities	<p>Concurrence: Agree</p> <p>Target Date: August 2022</p> <p>Action Plan: WGW Operations has a checklist when closing work orders and Electric Operations recently implemented one in August of 2021. In the current process, the Supervisor/Leads forwards the invoices to administrative staff to process the payment. To ensure all items are posted against the order, the Supervisor/Lead will include all invoices for services, labor (charge time), materials in the project closing packet for the Project Coordinator's review. The Project Coordinator then becomes the initiator, rather than the Supervisor/Leads, for processing invoice payments.</p>
We recommend the Utility Coordinator complete a checklist to show review of verifying completeness of work orders for all utilities.	Utilities	<p>Concurrence: Agree</p> <p>Target Date: August 2022</p> <p>Action Plan: WGW Operations has a checklist when closing work orders and Electric Operations recently implemented one in August of 2021. The Project Coordinators will use the checklist to verify labor, materials, and 3rd party invoices have been charged to the order before closing the order.</p>
We recommend work orders be closed and capitalized monthly to prevent a backlog and to ensure depreciation starts immediately when the asset is placed in service.	Utilities & ASD	<p>Concurrence: Partially Agree</p> <p>Target Date: December 2022</p> <p>Action Plan: Settlement of costs, closing of work orders and reconciliation of Construction in Progress are done on a monthly basis. The reconciliation reports are saved on the network at quarter ending</p>

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
		<p>since capitalization are done on the same period. Working with limited staff in both Utilities Operations and Accounting, monthly capitalization is time consuming and not practical. Although it ensures depreciation will start immediately when asset is placed in service, depreciation is still considered a low risk assessment since it is a non-cash item and the depreciation amount is relatively immaterial compared to the total asset base. However, we recognize monthly capitalization is the best practice and will evaluate the feasibility of implementing the process.</p>
<p>We recommend the electric utility consider evaluating whether SAP has the capability to effectively track work orders to avoid using side systems. The electric utility should also evaluate whether implementing SoGen, the system used by the water, gas, and wastewater utilities to track work orders, would allow for easier, more accurate work order tracking. A system with the ability to schedule work orders based on priority will also ensure there is not unnecessary downtime or overburdening of worker time.</p> <p>Palo Alto utilities should also consider developing an interface between the handheld devices and SoGen to eliminate duplicate processes and allow stakeholders access to the most up-to-date information as changes are being made in real time.</p>	Utilities	<p>Concurrence: Partially Agree</p> <p>Target Date: Ongoing</p> <p>Action Plan: Utilities staff plans to evaluate a mobile work management application that will address the needs of all its utilities and utilize one utility operations application to compliment SAP.</p> <p>Background:</p> <p>Utilities explored using the scheduling feature in SAP and found that the task was too cumbersome and customizing SAP to accommodate the various utilities was cost prohibitive for an organization of our size and with different needs for each of the five utilities. The scheduling function in SAP has not changed since we first implemented in 2004 and with the different types of assets and maintenance and construction requirements for all utilities, the scheduling module is not feasible. At present, SoGen is not the ideal application to be used in the field nor for Electric Operations to adopt. It is a stand-alone application that serves as an intermediary to capture work details such as location, activity, labor, and materials.</p> <p>In staff's experience, best of breed utility applications are more operationally efficient and cost effective than customizing SAP.</p> <p>The department is continually keeping an eye out for mobile work management applications. Some recent examples are:</p> <ul style="list-style-type: none"> • In February 2019 through September 2019, Utilities attempted to bring SoGen mobile. The mobile application lacked a good drawing tool to allow staff to update maps while in the field and encountered critical data discrepancies. • In 2019, staff piloted a mobile workforce management system (SMW) through Smart Energy Systems for both WGW and

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
		<p>Electric Operations in an effort to provide a mobile platform for some of the work groups.</p> <ul style="list-style-type: none"> • In late 2020, the Wastewater maintenance group implemented a new maintenance application through SEDARU which provides a mobile platform. • Utilities kicked off the Advanced Metering Infrastructure project in FY 2022, which is a multi-year project ending in 2025. Utilities will evaluate purchasing a 3rd-party mobile application used by the vendor installing the meters and integrating with SAP. Staff is currently working with the vendor to explore and design the product for use post-implementation. • The Utilities is currently reviewing and implementing mobile applications through ArcGIS Enterprise with Esri.
<p>Any design changes should be approved by an engineer or supervisor. Changes in the field are a safety issue for service and could impact other areas that the field crew may not be aware of. All approvals should be evidenced in writing.</p>	Utilities	<p>Concurrence: Partially Agree Target Date: Complete (June 2022)</p> <p>Action Plan: As the auditor noted, it is the City's current practice to send back major design changes to Engineering for approval. The Leads on-site are trained and empowered to use independent judgment in the field for minor field changes that did not require engineering such as, moving the service alignment a couple of feet to accommodate field conditions when necessary. These changes are documented on the redlined as-builts drawings or work orders, signed by the Leads or Supervisors, then sent to mapping to capture the accurate alignment of the new services. These minor changes to slightly move the alignment of new services do not create any safety concerns to the utility infrastructure, because all installation work must comply with Building Code and Utility Standards.</p>
<p>We recommend that the utilities perform a full system reconciliation of assets in AME and SAP to ensure assets are accurately recorded. Assets in AME and SAP should continue to be reconciled on an annual basis (or cycle counts can be performed monthly where a certain type of asset is counted each month). This reconciliation should be documented and signed-off on.</p>	Utilities & ASD	<p>Concurrence: Agree Target Date: June 2023 (estimated)</p> <p>Action Plan: Utilities will prepare a report by fund and asset for Accounting to perform a full system reconciliation between AME and SAP to ensure assets are accurately recorded. Since there are over 16,000 records and 7,000,000 assets, the system reconciliation effort will require at least one staff member dedicated to this project for a year. The tasks may include troubleshooting discrepancies, documenting business processes, and facilitating workshops between ASD and Utilities. Due to</p>

Recommendation	Responsible Department(s)	Agree, Partially Agree, or Do Not Agree and Target Date and Corrective Action Plan
		<p>staffing shortages in Accounting and various financial deadlines and projects, early estimate for completing the reconciliation is one year. To determine the amount of time and effort necessary to completely reconcile all records and assets, Accounting will reconcile one fund first and provide a better target completion date at the next update.</p>
<p>All reconciliations should be performed on a monthly basis to ensure monthly financials are accurate. All reconciliations should be reviewed for accuracy by another individual. This review should be evidenced in writing.</p> <p>In addition, Palo Alto should consider using more formulas in the reconciliation to reduce the risk of errors that can be caused by manually entering in numbers.</p>	ASD	<p>Concurrence: Agree Target Date: Complete (June 2022) Action Plan: Settlement of costs, closing of work orders and reconciliation of Construction in Progress are done on a monthly basis. The reconciliation reports are saved on the network at quarter ending since capitalization are done on the same period.</p> <p>The Senior Accountant will review reconciliation performed. Accounting has created a template to incorporate use of formulas to conduct reconciliation. In certain cells where a copy and paste from SAP is possible, no formula will be utilized.</p>
<p>We agree that the electric utility would benefit from developing similar KPIs that the water, wastewater, and gas utilities currently use. In addition, the utilities may want to consider adding additional KPIs related to work orders and project management. Example KPIs that the City may want to begin tracking are shown in Appendix D.</p>	Utilities	<p>Concurrence: Agree Target Date: 12/31/2022 Action Plan: Electric Operations has a few KPI's mapped out and are actively working on developing the dashboards. Staff anticipates completing them by the end of the year.</p> <p>Electric Operations will incorporate the following KPIs by the end of the year:</p> <ul style="list-style-type: none"> Maintenance Work New Construction/CIP Work Customer Service Work Inspections Emergency Work/3rd Party Damages