



City of Palo Alto City Council Staff Report

(ID # 10660)

Report Type: Consent Calendar

Meeting Date: 11/18/2019

Summary Title: P&S Recommendation to Accept Status Updates of Utility Contracts and Water Meter Billing Audits

Title: Policy and Services Committee Recommends the City Council Accept Status Updates of Audit Recommendations on; 1) Electric Substructure Contract Oversight, 2) the Cross Bore Inspection Contract, and 3) Water Meter Billing Accuracy

From: City Manager

Lead Department: Utilities

Recommended Motion

Policy and Services Committee and Staff recommend the City Council consider the following Motion:

1. Accept the status update of Audit Recommendations for the Contract Oversight: Trenching Installation and Electric Substructure Audit (Attachment A);
2. Accept the status update of Audit Recommendations for the Cross Bore Inspection Contract Audit (Attachment B); and
3. Accept the status update of Audit Recommendations for the Water Meter Billing Accuracy Audit (Attachment C).

The Policy and Services Committee convened on June 11, 2019 and approved and unanimously recommended that the City Council accept the report inclusive of the three audits. The Policy and Services Committee report, status update, and minutes are available in the links below.

Report: [Policy and Services Committee Staff Report #10363](#)

Minutes: [Policy and Services Committee Minutes June 11, 2019](#)

It should be noted that council approval of this recommendation will complete follow-up work on two of the three audits. Status updates are provided in Attachments A, B and C. All of the recommendations in the Contract Oversight and Cross Bore Inspection audits are complete. Three items remain open in the Water Meter Billing Accuracy audit; with one item pending for completion by Utilities Department, and two items pending completion by the Purchasing

Division. In preparation for advanced metering infrastructure and a new utility billing system, staff has retained a vendor to perform a comprehensive utility field meter survey. The field survey includes conducting an inspection survey of approximately 75,000 electric, gas and water meters to validate and ensure accurate meter data. Council approved the contract in April 2019 ([City Council Staff Report #10081](#)). The project is underway and is expected to be complete by May 2020. The Purchasing division is in the process of updating Purchasing's Policy and Procedures and will be providing training to staff of the revised policy and procedures. Both Purchasing items are expected to be completed by end of 2019.

Since the Policy and Services Committee made its recommendations to accept the above-mentioned status reports, Staff has continued to implement the remaining Auditor recommendations and anticipates providing any additional updates later in 2020.

Attachments:

- Attachment A: Contract Oversight Audit Status
- Attachment B: Cross Bore Inspection Audit Status
- Attachment C: Water Meter Billing Audit Status

STATUS OF AUDIT RECOMMENDATIONS
CONTRACT OVERSIGHT: TRENCHING AND INSTALLATION OF ELECTRIC SUBSTRUCTURE – ISSUED 10/30/13

The City Manager has agreed to take the following actions in response to the audit recommendations in this report. The City Manager will report progress on implementation six months after the Council accepts the audit report, and every six months thereafter until all recommendations have been implemented.

Recommendation	Responsible Department	Original Target Date and Response	Current Status	Implementation Update and Expected Completion Date
Finding 3: The Utilities Department did not enforce contract billing terms that were the basis for awarding the contract to Casey Construction, Inc.				
5. The Utilities Department should work with ASD to review existing contract performance management policies and develop procedures to ensure staff appropriately administers the City's contracts. Procedures should address the following areas: ● Monitoring of contractor billings to ensure accuracy and compliance with contract terms. ● Ensuring contracts are appropriately and timely modified, if required.	Administrative Services and Utilities Departments	3/31/14 Utilities staff is formalizing the process by which contractor work is requested, approved, inspected, reviewed, and invoiced. Utilities will hire a Project Coordinator to assist Engineering in administering contracts, verifying invoices, and processing payments. Utilities will be requesting for similar positions in Operations and Customer Support Services in the 2014 mid-year budget. Utilities will also develop a tracking mechanism to monitor contractor work, reconcile invoices, and verify payments. ASD will conduct a review of the entire purchasing process citywide. The departments will collaborate to bring contract management training to appropriate staff. This training will be rolled out to all departments.	Completed	June 2019 Management Update: Utilities has participated in construction contract and project management training, and will continue offering training to staff regularly or as needed. Training topics include pre-bid conferences, prevailing wage requirements, change orders, stop notices, payments, project closeout and recordkeeping. The procedures and/or guidelines for these topics have been documented and made available for staff to use. The Senior Engineers and Project Coordinators are responsible for project management and contract administration of capital projects and construction contracts. With the additional training, staff has been performing the administrative contract duties to ensure contractor billing accuracy, compliance with contract terms, and timely processing of change orders. May 2018 Management Update: Utilities has completed contract administration training and will seek additional training for purchasing, project management and risk management on an as-needed basis. Utilities has established general project management

STATUS OF AUDIT RECOMMENDATIONS
CONTRACT OVERSIGHT: TRENCHING AND INSTALLATION OF ELECTRIC SUBSTRUCTURE – ISSUED 10/30/13

Recommendation	Responsible Department	Original Target Date and Response	Current Status	Implementation Update and Expected Completion Date
				guidelines including roles and responsibilities, scheduling, change orders, negotiations, payments and contract closing. Utilities will continue to work toward uniform implementation of the guidelines and usage of the forms. The Project Coordinator position remains vacant as Utilities redefines the contract administration and project management responsibilities of the position to better address department needs. ASD has and continues to collaborate with the City Attorney's Office on further developing the IFB Template on a regular basis. The latest revision is made available and in use. This collaborative effort now includes the new "Design-Build" templates. Contracts are regularly being uploaded into Planet Bids Contracts Management Module. On boarding department project managers is forthcoming. Meanwhile ASD is also considering contracts management in an Electronic Document Management System (EDMS), as with ARC's "Infolink" platform, for public record management functionalities, like contract management. Expected Completion Date: December 2017: December 2015 Management Update: In February 2015, construction contract management training was conducted in conjunction with PWD and ASD. The training covered procurement, project manager responsibilities, project scheduling, change

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				order requests, claims, payments and project closure. In October 2015, ASD provided citywide training on compliance to the new prevailing wage requirements for construction and improvement contracts. The training identified the roles and responsibilities of Purchasing and project managers and reporting requirements to the Department of Industrial Relations. The Utilities Project Coordinator position is currently vacant in Engineering. Utilities is currently reassessing the job classification for this role and evaluating the need for a higher Project Manager classification. Staff will recruit for the position in 2016. Until the position is filled, the project managers will continue administering the contracts with support from administrative staff on invoice verification and payments. All contract, invoice and supporting documentations are managed in a central shared drive. The Invitation for Bid (IFB) template is currently in the process of being revised to simplify and coordinate language between other sections of the contract; the boilerplate language should be completed by the second half of 2016. The firm that ASD selected to implement an invoice management system was unable to deliver on the scope as planned in 2015. ASD will evaluate the possibility of acquiring another invoice management solution or consider waiting until the new ERP system is implemented with built in invoice management. Expected Completion Date: Q4 2016 June 2014 Management Update: Utilities has

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				developed contract management guidelines and a project charter for large construction projects and professional services. These contracts and documents are stored on a centralized SharePoint website. Utilities Engineering hired a Project Coordinator in March 2014 to assist with contract administration and project management. The coordinator has developed a contract database, coordinated project management training, and formalized policies and procedures. Utilities Operations reclassified a position in the FY 2015 to assist with contract and inventory management. Utilities is working with the City Attorney's Office to strengthen the boilerplate language in the IFB and professional service contract templates. ASD hired a consultant to perform an independent review of the entire purchasing process. The review recommended a new purchasing system, increased training, and additions to the Purchasing Manual among other recommendations. Staff is in the process of implementing the recommendations. ASD has selected an online invoice management system to improve the review, approval and tracking invoices received by the City. This system will be implemented in 2015 and will provide increased accountability and visibility into the invoice review and payment process. Expected Completion Date: 6/30/15
Finding 4: The Utilities Department did not appropriately manage its contract with Casey Construction, Inc. to ensure the City's projects were completed in accordance with plans and cost estimates.				
6. The Utilities Department should work with ASD to review existing	Administrative Services and	Recommendation 5 & 6 are similar. See response to recommendation 5.	Completed	June 2019 Management Update: Utilities has established and updated general project

STATUS OF AUDIT RECOMMENDATIONS
CONTRACT OVERSIGHT: TRENCHING AND INSTALLATION OF ELECTRIC SUBSTRUCTURE – ISSUED 10/30/13

Recommendation	Responsible Department	Original Target Date and Response	Current Status	Implementation Update and Expected Completion Date
contract performance management policies and develop procedures to ensure staff appropriately administers the City's contracts. Procedures should address the following areas: • Roles and responsibilities for the contract administrator and any additional training requirements for staff. • Monitoring of contractor performance. • Ensuring payments are made only for services and materials included in the contract scope. • Ensuring there is an adequate process and documentation to show planned work has been completed.	Utilities Departments			management guidelines and construction administration manual including roles and responsibilities, scheduling, change orders, negotiations, payments, project closeout and contract closing. The procedures, guidelines, and/or forms for these topics have been documented and made available for staff to use. May 2018 Management Update: Utilities has established general project management guidelines including roles and responsibilities, scheduling, change orders, negotiations, payments and contract closing. Utilities will continue to work toward uniform implementation of the guidelines and usage of the forms A vendor evaluation form has been drafted but has not been implemented. The purpose of the evaluation form is to monitor the performance of the vendor and identify any incidents that occurred during the project. Utilities will work with ASD on implementing the form. Expected Completion Date: December 2017 December 2015 Management Update: Utilities is monitoring contractor performance through routine inspections, weekly meetings and communication. During inspections, staff reviews and verifies the contractor's performance by documenting and signing off the work completed (i.e. number of boxes installed, footage of pipe installed). In the weekly

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Recommendation	Responsible Department	Original Target Date and Response	Current Status	Implementation Update and Expected Completion Date
				meetings, staff reviews the work schedule, scope of work, claims and change orders with the contractor. ASD has updated the City's procurement training guide including contract administration roles and responsibilities, process workflow, best practices and common pitfalls. ASD will continue to provide procurement training annually and update the guide on an as-needed basis (eg., to reflect changes to prevailing wage laws). http://cityconnect.staff.copa/civica/filebank/blobdownload.asp?BlobID=4255 ASD implemented PlanetBids as the City's new eProcurement solution. PlanetBids includes a contract management module that provides a structure for managing contracts. This module of PlanetBids will be rolled out to departments beginning in 2016. Expected Completion Date: Q2 2016 June 2014 Management Update: Roles, responsibilities, and workflow for contract administration are documented and saved on SharePoint. Utilities Engineering completed a mandatory 3-day project management course in July 2014. ASD provided purchasing and contract administration training to the Executive Team and City staff in 2013 and 2014. This training will continue in 2014 and 2015 as part of an ongoing purchasing training curriculum for City staff. Additional Contract administration training is planned for November 2014 with Purchasing and City Attorney's

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				Office. See responses above related to vendor performance review and new invoice management system. Expected Completion Date: 6/30/15

STATUS OF AUDIT RECOMMENDATIONS
UTILITIES DEPARTMENT: CROSS BORE INSPECTION CONTRACT AUDIT ISSUED 6/1/17

The City Manager has agreed to take the following actions in response to the audit recommendations in this report. The City Manager will report progress on implementation six months after the Council accepts the audit report, and every six months thereafter until all recommendations have been implemented.

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
Finding: 1. Hydromax inspected 10,791 (60 percent) of 18,028 laterals and could not complete nearly half of its attempted inspections because of adverse conditions in sewer lines.				
1.1. Identify sewer pipelines that Hydromax did not fully inspect or attempt to inspect. Prioritize these sewer pipelines for inspection under a future contract(s). To the extent possible, based on past experience, predict potential inspection challenges, such as poor pipeline conditions, that may hinder future inspections. Disclose these challenges in future contract solicitations.	Utilities	Concurrence: Agree Target Date: Late 2018 Action Plan: Staff will review a previously generated prioritization list based on assessment of risk for property classifications, review inventory of parcels that do not have an associated lateral, and develop a final prioritization list and cost estimates based on experience and data from the original crossbore contract. Implementation of next phase will proceed based on available funding.	Completed	June 2019 Management Update: Staff has completed identification of approximately 1,200 high risk laterals for Phase 2 of the crossbore verification project. The prioritization was based on criteria such as occupancy rates, installation of safety devices, service material, age of service, and proximity of natural gas service pipelines to sewer laterals. The Crossbore Verification Invitation for Bid (IFB) was issued on March 26, 2019. Staff has evaluated the four bid responses. In the IFB, staff provides cross bore inspection guidelines which covers video quality and inspection procedures, specialized industry equipment, and minimum qualifications to improve the overall success rate of verified clear sewer laterals. The contract for Phase 2 of the crossbore verification project is scheduled for Council approval on June 24, 2019. June 2018 Management Update: Utilities Engineering performed a risk analysis of the laterals staff identified as not completed during the initial cross-bore project, to prioritize future inspection and predict potential inspection challenges. The prioritization was based on

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				criteria such as occupancy rates, installation of safety devices, service material, age of service, and distance from gas service. Phase 2 priority categories include high occupancy properties, gas services without excess flow valves, separation distance between sanitary sewer lateral and gas service, and polyethylene (PE) material. Staff expects to issue the RFP for Phase 2 of the crossbore safety inspection program, which will include the risk analysis findings, in summer 2018. Staff has requested for additional budget of \$1,000,000 in FY 2019 to fund the contract. Expected Completion Date: Q2 of FY 2019
Finding: 2. City oversight and NASSCO contracting guidelines can help ensure accurate, complete, and cost effective future inspections.				
2.1. Identify missing data in its laterals database by comparing it with independent databases such as Hydromax inspection data. Update its laterals database to ensure it can effectively serve to track inspection progress.	Utilities	Concurrence: Agree Target Date: Mid 2018 Action Plan: Staff will utilize existing data to review and update the City's GIS to reflect missing active City-owned laterals. This will be done in conjunction with the inventory of parcels referenced in Finding 1.1.	Completed	June 2019 Management Update: Staff continues to improve the information and accuracy of the Utility database using information gathered during all construction projects, capital improvement projects, sewer crossbore inspections and daily operations. This information is identified as a Map Update Request and Engineering researches and updates the GIS database regularly. June 2018 Management Update: Staff is in the process of reconciling and updating the lateral information in the GIS database, to identify missing laterals. The lateral database will be updated prior to issuance of the RFP for Phase 2 of the project.

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				Common sewer laterals are shared by more than one parcel, thus there is not a one to one ratio of laterals to premises. Staff has started a preliminary review of the various scenarios related to parcels without sanitary sewer laterals and has updated GIS with the two latest capital improvement projects. Staff is working on identifying a dedicated resource to complete the reconciliation process between City mapping data on GIS and Hydromax findings. Expected Completion Date: Q2 of FY 2019
2.2. Incorporate relevant and useful provisions from NASSCO's contract template, such as linear foot pricing and prior verification of inspector certifications, in future sewer inspection contracts. Consult with the Administrative Services Department's purchasing staff and the City Attorney's Office to determine if City can enforce NASSCO template provisions that it plans to incorporate.	Utilities	Concurrence: Agree Target Date: Mid to Late 2018 Action Plan: Staff will review the NASSCO contract template and look for provisions to incorporate in a future City contract, as applicable.	Completed	June 2019 Management Update: In the Crossbore Verification IFB, staff requested the City-owned sewer laterals be assessed per NASSCO standards by a certified NASSCO Lateral Assessment and Certification Program (LACP) trained operator or technician. The Contractor will identify and code pipe defects in conformance with LACP within the portion of the sewer lateral owned by the City. Reports from this program will be used to prioritize laterals with the highest deficiencies for replacement. June 2018 Management Update: Utilities Engineering is in the process of reviewing and adopting applicable National Association of Sewer Service Companies (NASSCO) standards which are appropriate for the City. These include industry standards for the rehabilitation of

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				underground pipelines and continued acceptance and growth of trenchless technologies. Staff has started reviewing the NASSCO contract templates and will incorporate applicable NASSCO standards that can be applied to a future contract. Expected Completion Date: Q2 of FY 2019

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Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
2.3. Identify gaps in staff expertise needed to monitor and facilitate field inspections and to review and track inspection data. Develop a training and certification plan for field staff who should have the expertise to help meet the City's inspection goals and objectives.	Utilities	Concurrence: Agree Target Date: Late 2018 to Start of future contract Action Plan: Staff will continue to review staffing gaps for office and field personnel. If gaps are identified and are not resolved by training, additional expertise will be identified within the City or via contract.	Completed	June 2019 Management Update: Several staff members from Engineering and Operations have been NASSCO certified for CCTV inspection. With the industry standard pipe rating codes, staff will be able to prioritize sewer mains more effectively for future replacement projects. Staff is also seeking knowledgeable natural gas industry personnel to facilitate Project Management and Inspection of gas projects. The City will continue to provide ongoing training and certification to employees across all utilities with industry recognized standards organizations. Staff will assign a dedicated City Inspector to the crossbore verification project to field inspect and ensure all attempt have been made to successfully clear sewer laterals of potential crossbores. June 2018 Management Update: Currently two Operations Staff members are NASSCO certified for CCTV inspection. Staff is working on identifying a dedicated resource for the GIS and database analysis experience. Expected Completion Date: On-going

STATUS OF AUDIT RECOMMENDATIONS
ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

The City Manager has agreed to take the following actions in response to the audit recommendations in this report. The City Manager will report progress on implementation six months after the Council accepts the audit report, and every six months thereafter until all recommendations have been implemented.

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
Finding 1: CPAU has not adequately prevented, detected, nor corrected water meter billing errors.				
We recommend that CPAU:				
1.1. Review and correct the meter record errors identified for meter sizes larger than 2 inches.	Utilities	Concurrence: Agree Target Date: December 2018 Action Plan: In preparation for the new CIS Utility billing system and potential advanced meter deployment, staff will consider an in-house or contract service audit of the three metered services (electric, gas, water). Staff will also review and update as needed roles and responsibilities for key staff involved in ensuring meter accuracy, including procurement, inventory, testing, installation, and billing records management.	In progress	June 2019 Management Update: In preparation of new metering and billing systems and in response to the audit, staff is retaining a consultant to perform a comprehensive utility field meter survey. The field verification includes conducting an inspection survey of approximately 75,000 electric, gas and water meters to validate and ensure accurate meter data. The contract was approved by Council in April 2019. The project is scheduled to start in May 2019 and will be completed within one year. Expected Completion Date: May 2020 June 2018 Management Update: Staff will be issuing an RFP for contract services to conduct a field audit of 74,000 meters. One of the requirements is verification of service connection size for 2" or greater water meters. Expected Completion Date: June 2019
1.2. Explore options for addressing equity when making changes to customer meter size rates and establish a policy and process for determining, documenting, and notifying customers of changes to their	Utilities	Concurrence: Agree Target Date: July 2018 Action Plan: The audit's questioning of utility practices regarding changes to meter sizes is based on a unique situation that occurred 22 years ago and does not	Completed	June 2019 Management Update: Staff retained a consultant to update the water cost of service study in late 2018. Based on the study results, and to ensure uniform administration and equitable cost allocation, staff proposes to charge all residential customers with 5/8", 3/4", and 1" meters, which include fire flow, a

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ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
meter size and, if appropriate, the rate change associated with the new meter size.		reflect current policy or process. The situation arising out of Southgate was a unique case and staff does not agree that this or other meter replacement practices raise equity issues. With regard to differential rates for different meter sizes, staff is currently reviewing policy options for addressing this issue going forward, and will develop options such as consolidating the fixed rate for 5/8" and 1" meters for consideration by the City Council.		uniform monthly service fee. The cost to the City of providing service to these different residential meter sizes is similar. Offering graduated meter sizes (up to 1") is still recommended in some cases, where there is inadequate fire flow or low system pressure. Pending Council's approval, the change of monthly water meter service charges for residential 5/8", 3/4" and 1" meters will be effective July 1, 2019. June 2018 Management Update: Due to staffing changes, the Utilities Department was not able to engage with a consultant to begin the water cost of service study in FY 2018. Staff expects to issue an RFP in the first half of FY 2019. Options to consolidate the fixed rates for 5/8" and 1" meters will be considered. The study results and staff recommendation will be brought forth for Council review when completed. Expected Completion Date: April 2019
Finding 2: CPAU has installed 1,178 water eMeters throughout the City' however, there are no testing standards, and the accuracy, performance, and reliability of these meters are uncertain.				
We recommend that CPAU:				
2.1. Develop a policy and procedure to transparently report significant, systemic, infrastructure changes to Council and update any CPAU Rules and Regulations that may be outdated to current practice or affected by policy changes.	Utilities	Concurrence: Agree Target Date: Immediately Action Plan: Major infrastructure changes are presented to Council for approval. However, standards are technical documents that provide the general conditions and specifications for the construction of the Water Gas and Wastewater System. Updates to	Completed	June 2019 Management Update: These are the current control processes in place to transparently report changes: 1.) Purchasing Policies and Procedures. Originating department: Purchasing. Process status: Existing. The purpose of this manual is to provide City departments with a practical step-by-step guide through the various stages of the purchasing process. It also provides a means of assuring

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ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
		standards are subject to multiple levels of professional review including engineering, procurement and legal. Updated standards will be communicated to Council as informational when substantive.		uniformity in the City's purchasing practices. The City of Palo Alto Municipal Code (Section 2.30 - Contracting and Purchasing Procedures) serves as the basis for the information in this manual. a. Sole Source Standardization Process. When a City department requires a specific products or services over \$10,000 that can only be furnished by a certain provider or that should be otherwise exempted from the competitive solicitation process (ref. PAMC 2.30.360), the requestor must complete an <i>Exemption From Competitive Solicitation Request Form</i> (Purchasing Manual Appendix E). b. Contracts for professional services over \$85,000 per year and/or with terms greater than three years require the approval of the City Council. Chapter 14 of the Purchasing Guide provides information regarding the preparation of a City Manager's Report (CMR) to request Council contract approval. 2) Rules and Regulations. Originating department: Utilities. Process Status: Existing. Rules and regulations are updated as needed to reflect new business practices and provisions. These changes are reviewed by the City Attorney's Office and are brought forth to Council for approval. Staff is currently working with the City Attorney's Office on updating 16 of the Rules and Regulations, for Council's approval later in 2019. 3) Meter and Specification Update Approval Process. Originating department: Utilities. Process Status: New. This process ensures that

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ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
				additions and deletions of meters in the Warehouse and distribution system are reviewed and approved by key staff and management. 4) Utilities Engineering Electric and WGW Construction Standards. Originating department: Utilities. Process Status: New. This process periodically reviews and compares current construction standards with the industry. The standards also specifies meter types (i.e. Badger disc meter). Recommended changes by staff will be brought forward to Council for consent. June 2018 Management Update: The Utilities Department will inform Council when technical standards are substantive. Since August 2017, the department has not updated the technical standards for electric, gas or water. American Water Works Association (AWWA) has drafted new standards for electromagnetic and ultrasonic type water meters. The public comment period on the proposed new standards closed on April 29, 2018. Final publication of the standard may take several months. Staff will notify Council if Utilities adopts the new electromagnetic and ultrasonic water meter standards. Staff will review and update existing policies and procedures if applicable. Expected Completion Date: June 2019
2.2. Seek direction and approval from Council before proceeding further with the	Utilities	Concurrence: Agree Target Date: Ongoing	Completed	June 2019 Management Update: The American Water Works Association (AWWA) standards for electromagnetic and ultrasonic water meters were

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Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
future installation of eMeters or any electronic meters.		Action Plan: Procurement and installation of e-meters will remain suspended until adoption of an AWWA standard for testing and the availability of independent test resources (either in-house or contracted). It is expected that a final standard for testing of E-meters will be available at the end of 2017. The new standards are not expected to change the accuracy requirements from those expected of the positive displacement meter with the exception that there will likely be an extended range of accuracy for low flows. It should be noted the E-Meters is a specific product line, and mechanical meters may also have electronic components.		published in October 2018. After staff's review and meeting with other water agencies and consultants, staff has decided not to install new ultrasonic water meters until the technology matures. At this time, Utilities will not be adopting the new electromagnetic and ultrasonic water meter standards. Utilities will notify Council in the future when Utilities adopt the new AWWA electromagnetic and ultrasonic water meter standards. June 2018 Management Update: American Water Works Association (AWWA) has drafted new standards for electromagnetic and ultrasonic type water meters. The public comment period on the proposed new standards closed on April 29, 2018. Final publication of the standard may take several months. Staff will notify Council if Utilities adopts the new electromagnetic and ultrasonic water meter standards or seeks to install additional eMeters. Expected Completion Date: Expected Completion Date: June 2019
2.3. Determine if the 1,178 installed eMeters should be uninstalled and replaced with the original displacement meter and if billing adjustments are required.	Utilities	Concurrence: Agree Target Date: July 2018 Action Plan: All customers with e-meters installed will be immediately notified of this audit, and that additional information will be provided as available. For eMeter testing, staff will send a sampling of eMeters to independent testing companies to determine if they are performing per manufacturer specification, and based on these results will determine next steps. In addition,	Completed	June 2019 Management Update: The American Water Works Association (AWWA) standards for electromagnetic and ultrasonic water meters were published in October 2018. After staff's review and meeting with other water agencies and consultants, staff has decided not to install new ultrasonic water meters until the technology matures. Palo Alto will continue to meet with other water agencies to monitor their electromagnetic and ultrasonic water meter pilot projects. Staff hired a contractor to test a sampling of eMeters. The contractor tested the eMeters under four different

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		the Water Meter Shop has staffing challenges and does not currently have the resources required to undertake this replacement project. At this time, staff will continue to monitor the meter reads for irregularities of both the installed positive displacement and eMeters as part of the billing exception process. Staff is also developing a customer plan for addressing any accuracy concerns with the e-meters already installed.		scenarios. Overall, the testing results measured correctly within the manufacturer's specifications. Based on manufacturer's test results, third party sampled testing and monthly meter reading of eMeters, staff believes these meters are functioning properly and does not recommend replacing them until their end of life. Expected Completion Date: June 2018 Management Update: The Utilities department sent letters to the 1,178 residents with installed eMeters. In response, 55 customers requested their meters to be exchanged. A couple credit adjustments were required for the eMeter exchanges. As of June 2018, the City has 1,122 eMeters installed. Status: Completed Staff hired a contractor to test a sampling of eMeters. The contractor tested the eMeters under four different scenarios. Overall, the testing results measured correctly within the manufacturer's specifications and guidelines of +/- 1.5%. After AWWA publishes the final standards for electromagnetic and ultrasonic type meters, staff will meet with other water agencies to determine the pros and cons of these meters. Staff will make a determination in 2019 on whether to standardize displacement and/or ultrasonic type meters. Expected Completion Date: June 2019

STATUS OF AUDIT RECOMMENDATIONS
ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
Finding 3: Purchase of water eMeters did not meet purchasing policy and eMeter expenditures were not monitored.				
We recommend that ASD Purchasing Division:				
3.1. ASD Purchasing to clarify its purchasing policy and procedures for new and renewals of product standardization.	ASD	Concurrence: Agree Target Date: December 2017 Action Plan: Staff will update the policy and coordinate with stakeholders to ensure the policy is clear and easy to follow. Staff will then finalize the policy and disseminate to departments.	In Progress	June 2019 Management Update: Revisions to the Purchasing Manual will be drafted and reviewed by the CFO in July. Proposed changes will be disseminated to the organization early fall 2019. Expected Completion Date: Fall 2019 June 2018 Management Update: This is in the queue for development to update Purchasing's Policy and Procedures. Purchasing has the "Solicitation Plan Checklist" already and the nuances of the process are currently being written. The current Exemption Form addresses the "Standardization" process in the P&P. The "How To" and step-by-step self-learning tool regarding standardization are in development. Expected Completion Date: Q4 of FY18
3.2. ASD Purchasing to retrain appropriate ASD and CPAU staff on Purchasing policies and procedures, and completion of required forms.	ASD	Concurrence: Agree Target Date: January 2018 Action Plan: In conjunction with 3.1 staff will provide training.	In Progress	June 2019 Management Update: The targeted completion of item 3.1 is early fall 2019. We expect to conduct ongoing training to ensure that the Department is aware of Purchasing's revised P&P's regarding standardization. Expected Completion Date: Winter 2019 June 2018 Management Update: Training is being done on an as needed basis. Purchasing will

STATUS OF AUDIT RECOMMENDATIONS
ACCURACY OF UTILITY WATER METER BILLING AUDIT – ISSUED 8/16/17

Recommendation	Responsible Department(s)	Original Response and Target Date	Current Status (Complete, In Progress, or Not Started)	Implementation Update and Expected Completion Date
				conduct formal training once item 3.1 is complete. Expected Completion Date: Q2 of FY19