

5-YEAR STRATEGIC PLAN FOR WORKFORCE RELIABILITY IN OPERATIONS



**FEBRUARY,
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Services of the San Francisco Public Utilities Commission

5-Year Strategic Plan for Workforce Reliability in Operations EXECUTIVE SUMMARY

Although the San Francisco Public Utilities Commission has benefited for years from a stable, experienced workforce, both Baby Boomer retirements and changing facilities, regulations, and equipment have modified that picture. The purpose of the workforce reliability planning process has been to ensure that despite these changes, the SFPUC will have sufficient staffing in mission-critical categories, and employees who are prepared to do quality work.

Water, Wastewater, and Power managers have identified the following as mission-critical job categories: Mechanic/Machinist, Electronic Maintenance Technician/Instrument Technician, Engineer, Electrician (specifically Electrical Line Workers), Wastewater Treatment Operator, and Water Treatment Operator. They have also provided their assessment of potential risk factors: the organizational recruitment process; availability of qualified candidates; inadequate analysis of competencies needed to perform reliable work; insufficient documentation, technical training, staff development, and knowledge management; and inadequate innovation to optimize use of staff available.

SFPUC has obtained valuable ideas and information from utilities throughout the United States as well as in Australia and Canada (through a Workforce Reliability Workshop Series); each workshop included garnering suggestions from SFPUC staff on how the approaches implemented by other utilities could usefully be applied at the SFPUC. A prioritization process was used to translate the 426 suggestions offered by staff into a listing of Top 10 recommendations. These were addressed by four workgroups, which produced a total of 15 proposals for multi-year action:

<p><u>Qualified Candidates</u></p> <ol style="list-style-type: none"> 1. Competency-Based Candidate Development 2. Community Outreach 3. Collaboration with Stakeholders 4. Building Career Paths 	<p><u>Optimizing Staff Utilization</u></p> <ol style="list-style-type: none"> 1. Standardization of Equipment 2. Upgrade Maximo Interfaces with Other Programs 3. Improve Network Performance Issues 4. Use Mobile Devices to Improve Efficiency 5. Standardize Nomenclature Across SFPUC
<p><u>Prepared Staff</u></p> <ol style="list-style-type: none"> 1. Assignment-Specific Competency Analysis 2. Staff Development 3. Strategy for Documentation/Knowledge Management 4. Technical Training 5. Training and Equipment for Knowledge Workers 	<p><u>Organizational Support</u></p> <ol style="list-style-type: none"> 1. Strengthen Corporate Culture

The proposals generated by the Qualified Candidates workgroup will require a mix of in-house effort and collaboration with other stakeholders (e.g., other Bay Area water and wastewater utilities, Bay Area community colleges, the San Francisco School District, San Francisco's Office of Economic and Workforce Development, and the Department of Labor). Because of the complexity and scope of some of the proposals (e.g., Building Career Paths), funding support beyond SFPUC Operations will be required.

The Prepared Workforce Workgroup broke into two subcommittees (one focusing on training and one on knowledge management) because of the magnitude of the gap between SFPUC's current programs in competency analysis, documentation, technical training, staff development, and knowledge management and the programs that have been implemented by the best-in-class utilities that participated in the Workforce Reliability Workshop Series. The group's recommendation was to devote Year 1 (FY 12-13) to (1) development of guidelines on documentation and knowledge management; (2) additional research on the programs of best-in-class utilities; and (3) documentation of the level of progress achieved with current resources, with the expectation of proposing a significant implementation program for FY 13-14.

The Workgroup on Optimized Use of Staff developed some proposals that relied on in-house effort by current employees and some (in the information technology area) that could benefit from both additional staffing and professional consulting services.

Similarly, the Organizational Support Workgroup saw opportunities for improvements using in-house effort, as well as the need for consulting support from consultants familiar with the Human Synergistics model that has proven effective in water and wastewater utilities both in California and internationally.

Our organization, with its Water System Improvement Program and the upcoming Sewer System Improvement Program, has led the country in responsible asset management in relation to facilities. With this planning process, we have set a national benchmark for thorough workforce reliability planning. With prudent investment, we have the opportunity to become a national leader in workforce preparedness.

5-Year Strategic Plan for Workforce Reliability in Operations Final Report

I. Introduction

The decision to develop a 5-Year Strategic Plan for Workforce Reliability in San Francisco Public Utilities Commission (SFPUC) Operations grew out of three observations:

- The ability of the SFPUC to deliver reliable water, power, and sewer services depends not only on facilities and equipment, but also ensuring that we have sufficient numbers of staff who are prepared to perform mission-critical work reliably;
- Staff turnover, as well as changing facilities, processes, regulations, and customer expectations, affect staff's preparedness to perform mission-critical tasks; and
- Investments to ensure operational work-readiness should be based on thorough planning.

The program proposals developed through the Workforce Reliability Planning Process (contained in Appendix A) grew out of a multi-phase effort:

- Needs Assessment;
- Learning from Others;
- Prioritization Workshops; and
- Development of Program Proposals by Workgroups.

II. Needs Assessment

Priority identification interviews were conducted with SFPUC operations management staff and the General Manager to determine what mission-critical job categories were of most concern, and to identify which organizational processes were most problematic in relation to each job category. Similar interviews were conducted with signatories of BAYWORK, a regional collaboration of water and wastewater utilities located in the Bay Area, as a basis for benchmarking and to help identify opportunities for regional collaboration.

A. Mission-Critical Job Categories

Mission-critical job categories are defined as those with the potential to put operational reliability at risk if (1) there are insufficient qualified candidates to fill vacancies, or (2) staff employed in the category do not have the skills or information they need to do quality work.

Priority identification interviews with SFPUC staff from the Water, Power, and Wastewater Enterprises identified six mission-critical job categories. Table 1 below shows these categories and the number of interviews where the job category was listed

as a concern. For comparison, the relative rank of the same mission-critical job categories as identified by BAYWORK agencies is also shown.

Table 1: SFPUC Ranking of Mission-Critical Job Categories by Number of Times a Classification was Listed

Classification	Water Enterprise	Wastewater Enterprise	Power Enterprise	SFPUC TOTAL	SFPUC Rank	BAYWORK Rank
Mechanic/Machinist	6	4	0	10	1	2
Electronic Maintenance Technician/Instrument Technician	3	2	1	6	2	4
Engineer	3	0	2	5	3	1
Electrician	3	0	1	4	T-4	5
Wastewater Treatment Operator	0	4	0	4	T-4	7
Water Treatment Operator	1	0	0	1	6	3
Water Distribution Operator	0	0	0	0	7	6

Within the Engineer job category, a number of different engineering types were identified. More details on the breakdown of mission-critical engineers by category can be found in Appendix B.

B. Processes

Interview respondents also assessed a list of eight processes that might cause operational reliability to be at risk:

- Availability of qualified candidates;
- Organizational recruitment process;
- Competency analysis;
- Staff development;
- Technical training;
- Documentation;
- Knowledge management; and
- Innovations to optimize staff utilization.

For each mission-critical job category, respondents checked whether each process posed a high-, medium-, or low-risk. Processes which received high or medium rankings were considered problematic. The ranking of processes by SFPUC Operations Managers as a whole, compared to BAYWORK agencies, is shown below in Table 2.

Table 2: SFPUC Ranking of Process Risk by High/Medium Votes

Risk Factor	Water H/M Votes	Waste-water H/M Votes	Power H/M Votes	SFPUC TOTAL	SFPUC Rank	BAY-WORK Rank
Organizational Recruitment Process	16	40	5	61	1	2
Documentation	15	34	5	54	2	3
Availability of Qualified Candidates	14	33	5	52	3	1
Technical Training	17	30	5	52	4	5
Competency Analysis	15	33	3	51	5	6
Knowledge Management	22	15	5	42	6	4
Staff Development	7	23	3	33	7	7
Innovations to Optimize Staff Utilization	10	9	5	24	8	8

III. Learning from Others

A. Workforce Reliability Workshops

Over 200 different individuals attended the series of Workforce Reliability Workshops held between May and July, 2011. Workshop speakers, topics, and agencies represented can be found in Appendix C. These presentations were videotaped and have been posted to the website of BAYWORK, a Bay Area water and wastewater utility collaborative, for future viewing by the SFPUC and other stakeholders who were unable to attend.

At the workshops, speakers described workforce reliability programs which had been implemented at their utilities, the challenges and benefits of implementation, and the costs of implementation. Following presentations, SFPUC employees were invited to make suggestions about how programs that they considered beneficial might be implemented here.

Additionally, a process has been started to collect cost information from the best-in-class utilities and to analyze the data for typical expenditures associated with implementation of successful programs in these areas. Analysis of this data is in progress, and work will continue during future phases of this work.

B. Implementation of BAYWORK Website

To facilitate ongoing information sharing among Bay Area water/wastewater agencies, the project included support for creation of a BAYWORK website – www.baywork.org. SFPUC is a signatory and leader for the BAYWORK consortium, which addresses the workforce reliability issues of Bay Area water and wastewater utilities through collaboration.

The website supports candidate development (e.g., a training map and job opportunity map), and will be used to post additional outreach materials and tools as they are developed. Similarly, the videos and PowerPoint presentations from the workforce reliability workshops have been posted to the website. As products produced by BAYWORK and BAYWORK signatories are added over time, the site will be an increasingly valuable resource for all water/wastewater utilities attempting to address workforce reliability challenges.

IV. Planning for Our Future

A. Prioritization Workshops

The workforce reliability workshops generated 423 suggestions for improvement, which were subsequently aggregated into 26 recommendations for further consideration. The 26 recommendations were fashioned into a ballot, which attendees used to vote on their Top 10 recommendations for implementation during prioritization workshops which took place on August 17 and 18, 2011. A sample ballot with the 26 recommendations can be found in Appendix D. Since some workshops were attended by non-SFPUC staff (e.g., BAYWORK utilities), separate ballots were used to collect input from participants not employed by the SFPUC.

The 26 recommendations have also been associated with the utility presentations that generated each suggestion, so that specifics of implementation and cost can be investigated further with knowledgeable staff from the utilities that inspired the recommendation. This categorization is also attached in Appendix D.

Participants in the prioritization workshops filtered the aggregated 26 recommendations into a Top 10 list (shown in Table 3), which reflected staff concerns in four areas:

- Qualified Candidates
- Prepared Staff
- Optimizing Staff Utilization
- Organizational Support

Table 3: Top 10 Recommendations Selected by SFPUC Staff

Rank	Recommendation	Program Category
1	Implement processes for documentation and transfer of critical knowledge prior to retirement of key employees.	Prepared Staff
2	Develop a strong internal training program that includes the ability to (1) analyze and prioritize technical, staff development, and health and safety training needs, and (2) select and/or develop the most appropriate mechanism to meet those needs.	Prepared Staff
3	Improve quantity, quality, and openness of communication between managers/supervisors and their subordinates.	Organizational Support
T-4	Provide Subject Matter Experts (SMEs) with the technical support needed (e.g. from instructional designers, videographers, and technical writers) to translate their organizational and facility-	Prepared Staff

	specific knowledge into a documented form that will be useable by others.	
T-4	Standardize equipment and processes where feasible in order to minimize staff technical training needs and increase operational flexibility in staff assignments.	Prepared Staff
6	Provide adequate support for development of documentation of new and existing facilities, processes, equipment, and procedures (e.g. provision of templates, creation of a Knowledge Management Team with time allocated for documentation of tasks, and assistance with technical writing).	Optimizing Staff Utilization
T-7	Analyze and document competencies and knowledge needed for successful performance of work.	Prepared Staff
T-7	Increase use of information technology to optimize use of staffing available (e.g. access to SCADA information through smartphones, electronic clipboard for recording/uploading data).	Prepared Staff
T-9	Actively support candidate development programs (at the high school, community college, and university level) for mission-critical job categories (e.g. through internships, operator-in-training programs, and apprenticeships).	Qualified Candidates
T-9	Use cross-training and staff rotations, where feasible, to broaden staff knowledge, increase operational flexibility, encourage continuous learning, and keep staff interested and motivated.	Optimizing Staff Utilization

The prioritized ranking of all 26 recommendations by SFPUC staff, by location and as a whole, is contained in Appendix E, as well as the prioritized rankings by non-SFPUC staff.

The prioritization workshops also provided an opportunity for staff to make suggestions as to how the Top 10 recommendations might be implemented at SFPUC. With regard to each recommendation, staff provided input in relation to two questions:

- Where should we start?
- What would success look like?

A summary of ideas presented by workshop participants in relation to the four program categories are shown below in Figure 1. Individual recommendations on where we should start in relation to each recommendation discussed can be found in Appendix F. Attendees also outlined what success would look like for each program. These are listed below in Figure 2, and a full list is also included in Appendix F.

Figure 1: Implementation Ideas for each Program Category

Qualified Candidates
<ul style="list-style-type: none"> • Interact with high schools, community colleges, trade schools, and universities to raise awareness of the water industry. • Increase candidate development efforts by expanding internship and apprenticeship programs. • Partner with unions to encourage modification of their training/apprenticeship programs to reflect competencies needed by SFPUC. • Outreach to communities about jobs in the water industry and about what SFPUC does.
Prepared Staff
<ul style="list-style-type: none"> • Dedicate resources to expand the SFPUC's internal training program, including dedicated staff and budget, using internal Subject Matter Experts to help create technical training materials. • Perform a competency analysis and analyze the gap between skills staff have and the skills they need. • Where appropriate, implement a cross-training program that allows staff to learn different skills. • Establish a mentoring program, combined with allowing staff development via in-house and community college training programs. • Expand use of Learning Management System (LMS), including complete course lists, useful email notification, and training on proper use of the system. • Develop an electronic document library (e.g. mIToolbox) that is kept up to date, that everyone can access, with adequate staffing support to ensure quality control and information maintenance.
Optimizing Staff Utilization
<ul style="list-style-type: none"> • Improve ability of staff to access and update information through increased use of information technology (e.g. iPads). • Consider lifecycle costs (e.g. maintenance) when purchasing equipment, not just the up-front capital costs. • Collaborate efforts between Engineering, Operations, and Purchasing to support purchase of standardized equipment to promote reliability and reduce staff training costs.
Organizational Support
<ul style="list-style-type: none"> • Implement a system for 360 degree feedback into performance evaluation system. • Make it a priority to increase communication with employees to set goals, inform them of expectations, and address concerns. • Train managers/supervisors on people skills and supervisory skills. • Get senior management to make a long-term commitment to workforce reliability efforts by providing a clearly defined budget for it. • Develop metrics to establish whether workforce reliability programs are working.

Figure 2: Success for Each Program Category

<p style="text-align: center;">Qualified Candidates</p> <ul style="list-style-type: none"> • Industry-specific classes are being offered at community colleges. • SFPUC sees more and higher-qualified applicants. • School curricula include introductions to the water and wastewater industry. • SFPUC becomes more active with the unions.
<p style="text-align: center;">Prepared Staff</p> <ul style="list-style-type: none"> • Facility specific technical training courses are being offered from SFPUC subject matter experts. • Well trained staff can act as backups for other staff. • Standard operating procedures are developed and maintained up to date. • Reductions in the number of errors and injuries. • SFPUC workforce is satisfied – happy people, more ownership of work. • Documents are maintained in a centralized, electronic library that all staff have access to. • Increased efficiency and productivity due to better access to documentation and better training.
<p style="text-align: center;">Optimizing Staff Utilization</p> <ul style="list-style-type: none"> • A feedback system exists that provides all staff with better information. • Technology is being used to increase efficiency. • Higher efficiency and lower training costs due to standardized equipment. • Increased employee morale.
<p style="text-align: center;">Organizational Support</p> <ul style="list-style-type: none"> • Measurable metrics have been developed for each workforce reliability program to track success. • Clear, consistent, written organizational directives will be set and enforced. • Employees will always know expectations. • A system of feedback will be in place to address issues and questions for continual improvement.

B. Workgroup Proposals

Workgroups composed of staff members from Water, Power, and Sewer Operations, as well as staff from other parts of the organization which would either contribute to or potentially benefit from the programs under consideration, were created in order to convert these implementation ideas into workable proposals. Appendix G lists the SFPUC employees who participated in the development of these proposals.

The workgroups developed 16 proposals, which can be found in Appendix A. These proposals reflect several recurring themes, as shown below in Table 4.

Table 4: Proposals and Themes

Proposal Name	THEMES			
	Candidate Development	Improved Use of IT	Documentation /Knowledge Management	Organizational Support
Competency-Based Candidate Development	X			
Community Outreach	X			X
Collaboration with Stakeholders	X			X
Building Career Paths	X			X
Strengthen Corporate Culture				X
Assignment-Specific Competency Analysis	X		X	
Staff Development			X	X
Strategy for Documentation/Knowledge Management			X	X
Technical Training			X	X
Training and Equipment for Knowledge Workers			X	X
Standardization of Equipment		X	X	
Upgrade Maximo Interfaces with Other Programs		X		
Improve Network Performance Issues		X		
Use Mobile Devices to Improve Efficiency		X		
Standardization of Nomenclature		X	X	X

V. Next Steps

Members of all four workgroups agreed to continue to support implementation of the proposals they developed, and implementation efforts are currently underway.

The San Francisco Public Utilities Commission has led the country in responsible asset management related to infrastructure with the Water System Improvement Program and the upcoming Sewer System Improvement Program. With continued investment and support for implementation of the ideas that have been developed through this process, SFPUC has the opportunity to become a nationally-recognized leader in workforce reliability assurance.

APPENDIX A: WORKFORCE RELIABILITY PROPOSALS

I. QUALIFIED CANDIDATES

QC-1	Competency-Based Candidate Development
QC-2	Community Outreach
QC-3	Collaboration with Stakeholders
QC-4	Building Career Paths

II. ORGANIZATIONAL SUPPORT

OS-1	Strengthen Corporate Culture
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III. PREPARED STAFF

PS-1	Assignment-Specific Competency Analysis
PS-2	Staff Development
PS-3	Strategy for Documentation/Knowledge Management
PS-4	Technical Training
PS-5	Training and Equipment for Knowledge Workers

IV. OPTIMIZING STAFF UTILIZATION

OSU-1	Standardization of Equipment
OSU-2	Upgrade Maximo Interfaces with Other Programs
OSU-3	Improve Network Performance Issues
OSU-4	Use Mobile Devices to Improve Efficiency
OSU-5	Standardization of Nomenclature

I. QUALIFIED CANDIDATES

Program Component:

Competency-Based Candidate Development

WHY is this program component needed?

A thorough, methodical analysis of both the technical and non-technical knowledge and skills required to reliably perform mission-critical work is necessary as a basis for building appropriate outreach materials, working with stakeholders to build qualified candidates, constructing navigable career paths for both internal and external candidates, and tailoring recruitment efforts to the organization's specific needs. Identification of critical tasks and the information needed to perform these tasks is also critical to defining the training tools and knowledge management systems needed in order to move current employees into new work areas.

WHAT is the program component?

Under the Assignment-Specific Competency Analysis initiative, the knowledge required for staff in each mission-critical job category to competently perform their work will be examined. This initiative will seek to use the required competencies to develop both internal and external candidates for mission-critical jobs. The competency analysis will help us provide helpful consultation to external candidate development programs (such as high schools, unions, community colleges, and universities), as well as guide our efforts in developing training material for cross-training and development of internal candidates.

HOW will it be implemented?

Interviews will be conducted with SFPUC staff to determine the skills and knowledge required for each classification examined. This analysis will help determine the required skill level for both internal and external candidate development for that position, and will help illuminate what trainings need to be prioritized for mission-critical job categories.

More research will also be done into credentialing requirements and what certifications are required for the mission-critical classifications at different levels.

WHERE/WHEN will the program component be implemented first?

SFPUC Human Resources Services is developing an SFPUC wide approach to competency analysis.

WHAT are the projected future work phases?

When an approach has been developed, priority should be given to the job categories identified by the Qualified Candidates Workgroup as most critical:

- *Machinist*
- *Electronic Maintenance Technician/Instrument Technician*
- *Electrical Line Worker*

Program Component:

Community Outreach

WHY is this program component needed?

This component is needed in order to make the public and potential future candidates aware that jobs in the water industry can help people support themselves, their families, their communities, and the environment.

WHAT is the program component?

A mix of traditional and new tools will be used to optimize the breadth and effectiveness of our outreach.

Brochures and posters about the industry in general and mission-critical job categories in particular, will be developed for use in school presentations, job fairs and other events attended by SFPUC staff, and for distribution to schools, workforce investment boards, and other community partners.

These traditional communication tools will be supplemented by effective use of the communication tools favored by the incoming workforce (e.g., YouTube, Facebook, and internet websites). Brochures and job profiles will be posted to SFPUC's website as well as the BAYWORK website co-funded and co-developed by the SFPUC. Videos portraying work performed by mission-critical job categories will also be posted to both of these sites, as well as YouTube. QR (Quick Response) codes on posters and brochures will bring users to the BAYWORK website, which will provide users with additional information on water industry jobs, as well as the training needed to obtain those jobs.

HOW will it be implemented?

Posters will be developed for the water/wastewater industry as a whole, for mission-critical job categories. Brochures will be developed for each mission-critical classification. Posters, brochures, job profiles, and career roadmaps will be posted to the BAYWORK website, as well as the SFPUC website, and distributed to community partners. Videos reflecting the work of each mission-critical job classification will be created and posted to both the BAYWORK and SFPUC websites.

WHERE/WHEN will the program component be implemented first?

The first priority will be posting and distribution of outreach materials already available (e.g., through the BAYWORK website and Job Fairs). The second priority will be the development, posting, and distribution of new materials. Top priority will be given to development of new materials relating to the industry as a whole, electrical line workers, electronic maintenance technician/instrument technicians, machinists, and engineers.

WHAT are the projected future work phases?

Future work phases include development of posters, brochures, and videos for the remaining mission-critical job categories.

Year 1 - Professional services support for creation of video for 1 mission-critical job and creation of brochures and posters for 2 mission-critical jobs and 1 for the water/wastewater industry

Year 2 - Professional services support for creation of video for 1 mission-critical job and creation of brochures and posters for 3 mission-critical jobs. \$200 reprinting costs for brochures developed during Year 1.

Future Years - Professional services support for creation of video for 1 mission-critical job per year and annual reprinting costs for brochures.

Program Component:

Collaboration with Stakeholders

WHY is this program component needed?

Candidate development is not a task that SFPUC can or should take on alone. Where other stakeholders have a vested interest in promoting the best interests of young people, the economy, and the reliability of water, wastewater, and power services, the overlap of interests provides an opportunity for cost-effective collaboration.

WHAT is the program component?

The SFPUC can support universities, community colleges, vocational training programs, high schools, and other community partners by providing the following:

- *Facility tours;*
- *Classroom presentations and demonstrations;*
- *Assistance in defining core curriculum for training needed for mission-critical job categories, beginning in high school;*
- *Surplus equipment and materials and supplies;*
- *Internship, apprenticeships, and other on-site learning experiences; and*
- *Provision of information on education, skills and credentials needed for mission-critical job categories (e.g., brochures and posters distributed both hard-copy and through SFPUC and BAYWORK websites).*

HOW will it be implemented?

The SFPUC can analyze opportunities available for providing facility tours, classroom presentation and demonstrations, surplus equipment and materials and supplies, on-site learning experiences, and definition and documentation of education, skills, and credential needed for mission-critical trades classifications. This will involve surveying all Divisions of SFPUC to determine what surplus equipment is available (this will require a consistent definition of what “surplus” means).

The SFPUC will also conduct research and work with stakeholders to create a game that can be posted to the BAYWORK website to show students and counselors what courses and experiences are needed at the high school level in order to be prepared for candidate development programs available (e.g., through community colleges and unions). Research of high school curricula/course offerings will begin by approaching the San Francisco Unified School District. Findings will be provided to community colleges to see specifically what courses they would recommend students take who are interesting in pursuing study in the water/wastewater field. Finally, feedback will be provided to high schools about the identified critical coursework. Community colleges will also be asked to provide feedback on critical courses that are lacking in high schools, and this feedback will also be provided to high schools. This information will be the basis for the online game. The online game development can be offered as a contest to community college and other college students, with an incentive being offered to the winning person/team. It is expected that professional services support will be required to facilitate the gathering of information and contest for game development.

The specific deliverables of this proposal will be: (1) online game describing the path for students to enter the water/wastewater industry, (2) handouts for high school students describing what courses they should be taking to enter community college programs in water/wastewater, and (3) feedback for school district regarding what courses were deemed critical and what coursework may be lacking in San Francisco high schools.

WHERE/WHEN will the program component be implemented first?

Initial focus will be on mission-critical trades categories, with a particular focus on:

- *Electrical line workers*
- *Mechanic/machinists*
- *Electronic maintenance technicians/ instrument technicians*

WHAT are the projected future work phases?

Other mission-critical job categories will be the focus of subsequent efforts.

Year 1 - Professional Services Support

Program Component:

Building Career Paths

WHY is this program component needed?

This program component is needed both to compensate for the current lack of clear candidate development paths for some key job categories (e.g. electrical line helpers to line workers) and to support development of internal candidates to perform mission-critical work.

WHAT is the program component?

For some mission-critical job categories, (machinist, electronic maintenance technician/ instrument technician, electrical line workers) no clear career path exists to allow either internal or external candidates to acquire the skills and credentials needed to achieve journey-level status and the capacity to perform the work required of SFPUC's trades workers. Union-sponsored apprenticeship programs are not available to help potential candidates move from classroom learning to journey-level status and utility-specific skills.

Where no career bridges currently exist between educational programs and mission-critical job categories, the SFPUC should work with appropriate stakeholders (e.g., the San Francisco School District, community colleges, and unions) to construct them. These bridges should be constructed to allow for access by current SFPUC employees who have the interest and capability to acquire the skills and credentials needed.

More broadly, the operational reliability of the SFPUC should be improved by building internal candidates for mission-critical work through carefully planned cross-training, job rotations, and apprenticeship programs. For example, a possible career path would be for Electrical Line Helpers (7432) to move through an apprenticeship program in order to become journey-level Electrical Line Workers.

HOW will it be implemented?

Construction of career paths to journey-level status for trades where no viable apprenticeship program exists at this time will require investigation of specific needs and opportunities in relation to the specific trade. Coordination with partners such as the SF Unified School District, unions, and regional community colleges will be required.

For example, in relation to electrical line helpers, testing on math and reading competency could be performed and remedial classes provided as necessary. Then, an apprenticeship program could be developed to facilitate the career path to an electrical line worker. SFPUC could work with local unions (e.g. Local 6) to find and join an established apprenticeship program.

Development of internal candidates through cross-training and rotations will also require work in competency analysis; identification of critical skills needed; documentation of information needed to perform the work reliably; effective use of knowledge management systems; standardization of equipment and processes to the extent feasible; and organizational support (e.g., a commitment to collaboration beyond workgroup lines).

WHERE/WHEN will the program component be implemented first?

This initiative will begin by building a career path to journey-level status for the electrical line workers, working with human resources and with the unions to develop appropriate classifications, pathways, and programs. The goal would be to place two employees in this program during FY 12-13.

WHAT are the projected future work phases?

Year 2 will include construction of career paths for other high criticality mission-critical job categories (machinists, electronic maintenance technicians), with a focus on cross-training and rotations to support development of internal candidates. The goal would be to create two machinist apprenticeships and two electronic maintenance technicians/instrument technician apprenticeships during FY 13/14. Development of this program would require research of funding requirements of program; development of viable career paths, in connection with partnership with viable candidate development programs; and development of appropriate funding sources (including investigation of possible external sources such as the Department of Labor). As an example of costs, Colorado Springs Utilities (with 1,800 employees) has an in-house internship program on which they spend approximately \$83,000 per year (including intern salaries, advisory board time, internship coordinator time, and industry coordinator time).

Future phases will include construction of career paths for other mission-critical classifications.

Year 1 – Initial funding may be limited to incremental costs for training of two Line Helpers (without addition of any additional positions to the budget)

Year 2 – Addition of two machinist apprenticeship positions and two electronic maintenance technician/instrument technician apprenticeships (total of 6 apprenticeship positions)

II. ORGANIZATIONAL SUPPORT

Program Component:

Strengthen Corporate Culture

WHY is this program component needed?

This program component is needed in order to maintain effective organizational functioning in a time of rapid turnover and change. The corporate culture that sustained the Baby Boomer generation that dominated the SFPUC and other utilities during past decades is in decline, and a corporate culture that supports ongoing productivity is needed. Therefore, conscious choices need to be made about the values of the organization and how they can be sustained long-term.

The Workforce Reliability Workshops provided presentations by water/wastewater utilities that were best-in-class relative to various aspects of workforce development. Employee comments following the presentations reflected staff concern about the quality and quantity of communication between supervisors and subordinates, as well as the level of commitment of senior management staff to investing in the programs that would be needed to assure workforce reliability.

Three utilities in the series (two from California and one from Australia) spoke about the benefit of applying an internationally time-tested model (Human Synergistics) to measure and improve corporate culture. A high level of staff support was expressed for obtaining expert guidance in enhancing the SFPUC's corporate culture to include more focus on organizational values and objectives.

WHAT is the program component?

An initiative to actively communicate, promote, and support organizational values and performance objectives through a wide range of staff development programs, to ensure a focus on key performance goals.

HOW will it be implemented?

Core values and key performance objectives will be supported and promulgated through a number of avenues:

- Use of public spaces and appropriate technologies (e.g., the video wall at 525 Golden Gate) to highlight SFPUC values and organizational achievements (e.g., a Dashboard or Service Snapshot);*
- Development of a curriculum that reflects successful corporate culture improvement efforts at other utilities, to be used in different forms in different training and team-building efforts, such as employee orientation, leadership training, and senior management retreats;*
- Acknowledgement of activities consistent with values (e.g., through stories for Currents, Enterprise-level awards, and the O'Shaughnessy Award);*
- Consideration of modifying personnel evaluation processes to measure active efforts to create a work environment that fosters productivity.*

WHERE/WHEN will the program component be implemented first?

Initial activities will include a statement from the General Manager to staff (see draft attached); investigation of the most effective way to communicate values and service performance at 525 Golden Gate; and obtaining professional services support from consultants with experience in implement the Human Synergistics Model in water utilities.

WHAT are the projected future work phases?

Opportunities will be investigated for posting of values and SFPUC Service Snapshots in additional facilities, as well as additional ways to incorporate sound corporate culture principles into SFPUC behaviors and programs.

SFPUC Values

- **Communication:** Listen and communicate honestly and openly.
- **Equal Opportunity:** Provide opportunities to all staff to contribute and reach their potential. To achieve this, the SFPUC must be a learning organization.
- **Excellence:** Strive for personal and professional excellence, and recognize exemplary performance as the Commission seeks continuous improvement.
- **Service:** Focus on customer needs and satisfaction.
- **Inclusiveness:** Provide access and transparency to stakeholders and community members.
- **Respect:** Understand and appreciate the inherent value of the SFPUC staff, customers and community.
- **Safety:** Take the health and safety of the SFPUC's employees, customers and communities seriously.
- **Stewardship:** Be accountable for and responsibly manage and conserve the human, financial and environmental resources entrusted to the SFPUC's care.
- **Teamwork:** Support a cooperative work environment; the SFPUC team is strengthened by the diversity and contributions of its members.
- **Trust:** Act with honesty, integrity and fairness.

***SFPUC Service Snapshot (type of performance indicators to be reflected in the Dashboard)**

1. Gallons of water served
2. Gallons of wastewater treated
3. Amount of power produced (kilowatt-hours per day)
4. Days without a lost-time accident
5. Days without a water quality violation
6. Days without a wastewater (NPDES) permit violation
7. Days without an environmental permit violation

*Indicators consistent with current SFPUC reporting requirements will be used (e.g., Sustainability Plan performance indicators)

Draft Letter from Ed Harrington to SFPUC Staff

Dear SFPUC Staff:

I am writing to let you know that the SFPUC is implementing programs to respond to feedback you provided through both the employee survey and the workforce reliability planning process. Both indicated the need for improvement in the degree to which our work environment fosters healthy, open, respectful communication and commitment to organizational goals.

All of us have the ability and responsibility to contribute to a positive work environment. Managers and supervisors have a particular responsibility to encourage honest communication, model professional and respectful behavior, and inspire trust by acting with fairness and integrity.

However, both individuals and organizations struggle to embody the values to which they aspire. Our challenge is to more completely reflect in our worklife the values that our organization has adopted: communication; equal opportunity; excellence; service; inclusiveness; respect; safety; teamwork; and trust.

In order to focus our attention on shared values and increase our effectiveness in achieving shared goals, we will be implementing the following programs:

Use of shared spaces and appropriate technologies (e.g., the video wall at 525 Golden Gate) to highlight SFPUC values and our performance in key areas (e.g., amount of water delivered, wastewater treated, and power produced);

Use of Currents, O'Shaughnessy Awards, and other venues to recognize individuals and programs that exemplify our values and provide outstanding service to the community and the environment;

Development of curriculum that reflects SFPUC values, goals, and processes to encourage productivity (to be used in new employee orientation, leadership training, management workshops, and other staff development programs); and

Use of professional services support from consultants who have been effective in helping other water utilities strengthen their corporate culture.

I will be looking for opportunities to have more discussions with staff about our values and objectives, and I encourage each of you to do the same. Since our community depends on the quality of our work, it is important for us to contribute to a corporate culture that helps us do our jobs well.

III. PREPARED STAFF

Program Component:

Assignment-Specific Competency Analysis

WHY is this program component needed?

A program is needed as a basis from which to recruit, hire, develop and advance SFPUC employees. By creating competency models the employees will know exactly what is expected of them, to what level and as an organization we will have identified what resources are, or need to be, available for our employees to achieve those levels of competencies. This is expected to drive repeatable, superior and sustainable performance.

WHAT is the program component?

The knowledge required for staff in each mission-critical job category to competently perform their work will be examined. This initiative will seek to use the required competencies to develop both internal and external candidates for mission-critical jobs. Internally, the competency analysis will inform training materials to develop new skills for internal candidates.

Other organizations that have implemented a competency analysis program have made significant investments in this area. Union Sanitary District, which has 130 staff, spent \$1.3 million over 7 years on their combined competency analysis, documentation, and technical training program.

HOW will it be implemented?

This project will produce job classification-specific competency models that can be adapted to specific job assignments and used as a basis for developing employees for those assignments. It will also be used to inform the recruiting and hiring process. A process of identifying required competencies (the knowledge, skills and abilities) for each job classification will be designed and implemented, and competency models for those classifications will be developed.

The goal is to work closely with all SFPUC Divisions to ensure a participatory process and to ensure that the resulting competency models will be reflective of what the employees really need to be doing.

The resulting competency models will be entered into the Learning Management System and assigned to employees based upon the assigned job classification.

WHERE/ WHEN will the program component be implemented first?

SFPUC Human Resources Services is developing an SFPUC wide approach to competency analysis.

WHAT are the projected future work phases?

When an approach has been developed, priority should be given to the job categories identified by the Qualified Candidates Work Group as most critical:

- *Machinist*
- *Electronic Maintenance Technician/Instrument Technician*
- *Electrical Line Workers*

Program Component:

Staff Development

WHY is this program component needed?

A comprehensive, consistently delivered and supportive staff development program is critical for an organization to achieve high performance levels. Leaders and managers must have the tools they need, know how to use them and understand the importance of implementing them consistently across the organization. Employees need to understand what is expected of them and they need a positive working environment in which they know how they will be treated and how to excel in their chosen profession. This program does not currently exist within the SFPUC.

WHAT is the program component?

Staff development covers a wide range of activities designed to provide employees the chance to upgrade their skills. Examples include the following:

- *Cross-training and staff rotations designed to expand the employee's range of knowledge about SFPUC operations;*
- *Attending in-house or community college classes relating to business communication, supervision, management, or corporate culture; and*
- *A formal mentoring program that provides the opportunity for staff to help each other acquire the knowledge and skills required for successful performance at increasing levels of responsibility.*

Other Bay Area utilities which have made strong staff development programs have made significant investments in this area. Colorado Springs Utilities, with 1,800 employees, has 7 full-time staff devoted to organizational and professional development. This is less than one third of their workforce planning and development program, a work unit of 27 positions. Union Sanitary District (USD), which has 130 employees, has developed a 6-month mentoring program which costs approximately \$1,440 per participant. USD in-house training is provided at an annual per-person cost of approximately \$2,625. The agency also reimburses for an on-line Business Supervision Certificate program for \$600. East Bay Municipal Utility District spent \$9,000 to develop their mentoring program, and now spend \$64,800 annually (primarily staff time) to implement it.

HOW will it be implemented?

Initial planning will be led by SFPUC Human Resources Services Learning and Development team with currently budgeted resources. At the same time, best-in-class staff development programs by other utilities will be researched (refer to Technical Training proposal for description of this research).

WHERE/ WHEN will the program component be implemented first?

Priority will be given to development of staff in mission-critical job categories:

- *Electronic Maintenance Technicians / Instrument Technicians*
- *Engineers (Electrical, IS/SCADA, Process, Structural, and Research and Development)*
- *Wastewater Treatment Operator*
- *Water Treatment Operator*
- *Machinist*
- *Electricians (Electrical Line Workers)*

WHAT are the projected future work phases?

The staff development needs of other classifications will be addressed in future work phases.

Research will be performed during Year 1 on high-performing staff development programs at other utilities and SFPUC's performance using resources currently available, as a basis for determining what, if any, additional resources may be needed in order to meet program goals.

Program Component:

Strategy for Documentation and Knowledge Management

WHY is this program component needed?

A wide array of documentation is required for employees to have the information needed to successfully perform their work. This includes the following:

- *Policies*
- *Standard operating procedures (including safety practices and standard nomenclature)*
- *Project designs*
- *Schematics and drawings of facilities*
- *As-builts of facilities as constructed*
- *Permits*
- *Memoranda of Understanding*

Documentation is critical not only in relation to historical knowledge and past practices but also in relation to numerous new facilities, technologies, equipment, and processes employees must use for successful operations today. Therefore, this issue relates not only to the documentation practices of operations and maintenance staff but also the documentation practices of project staff (e.g., provision of as-builts, documentation of permits and agreements, documentation of operating plans and requirements for operating and maintaining new facilities). Availability of facility-specific information (e.g., as-builts, processes, and procedures) is critical to the ability of the organization to cross-train staff and rotate staff among work locations. Standard nomenclature in relation to facilities, equipment, etc., is also important for cross-training and to help staff find the information that has been recorded.

Currently, the SFPUC does not provide direction to staff about what information should be documented and stored, how file plans should be created for saving files, what conventions for standard terms should be used throughout the organization, and few resources for helping subject matter experts translate their knowledge into documentation and training materials that will be usable by others in the future. There is also lack of clarity in the organization about what software systems should be used to store and access different types of records. A knowledge management strategy is required which will allow managers to identify and prioritize the information mission-critical staff need to perform their work and the software tools which will be used to both store and access that information. This should include not only information produced by operations and maintenance staff but the information produced on projects by WSIP and SSIP staff, so that the long-term operators of the facilities will have the information needed (e.g., operations plans, maintenance manuals, as-builts, permits, and agreements) in order to maintain and operate new facilities.

WHAT is the program component?

This program component should begin with (1) identification and prioritization of the information needs of mission-critical staff, so that priorities can be set for documentation and knowledge management; (2) provision of guidelines for development and storage of documentation and training materials; (3) training in use of appropriate software (e.g., mIToolbox and Sharepoint); and (4) identification of the resources (e.g., videographers, technical writers, instructional design specialists, and document control staff) that will be required to support ongoing documentation and knowledge management on a sustainable basis.

HOW will it be implemented?

Competency analysis will identify the tasks to be performed by each mission-critical classification and should include an analysis of the criticality of each task in order to assign priorities for documentation and knowledge management.

This initiative will begin with workshops conducted by each Enterprise (with AGMs and direct reports) to define the following:

- *What information produced by operations do staff need to have access to in order to perform their work?*
- *What information produced and maintained by internal service providers (such as Human Resources Services) do Operations Division staff need access to in order to perform their work?*
- *What information produced by WSIP and SSIP staff do operations staff need in order to maintain and operate facilities on a long-term basis?*
- *How can available software tools best be used for storing and accessing this information, and which are most user-friendly for staff?*
- *What are the priorities for storing this information and building user-friendly access to it?*

Guidelines will be developed for documentation and knowledge management and will be written into a Documentation/Knowledge Management Guide which will include the following components:

- *Written documentation standards that can be followed to prepare adequate documentation. (e.g., identification of standard sections);*
- *For certain document types, templates that can be used to prepare documentation (e.g., for SOPs). These will be stored in an “open” template library that can be added to by all staff (through mIToolbox). Specific examples of successful use of acceptable formats will be provided;*
- *Guidance on where documents of different types should be stored;*
- *Guidance on file types to be stored (e.g., editable versions, Optical Character Recognition (OCR) of PDF files, etc.);*
- *Definition of “file plans” for the organization or for individual Divisions, at a minimum; and*
- *Provide guidance on standard nomenclature for facilities, types of equipment, etc.*

Additional components of the program should include:

- *Development of a technical writing training course to improve the quality of documentation;*
- *Direction to supervisors/managers to encourage preparation/maintenance of documentation by their staff; and*
- *Definition of the staffing (e.g., videographers, technical writers, instructional design specialists, document control specialists, and IT software trainers) that will be required to maintain documentation and knowledge management systems on a sustainable basis.*

An example of Procedures development from Metro Vancouver includes the following steps: (1) gather resource materials (e.g., design reports, drawings, etc.); (2) conduct a task identification workshop to identify tasks that require written procedures; (3) prioritize need for documentation based on risks associated with errors in performance of tasks; (4) conduct procedure development workshops; and (5) verification, both in the office and in the field.

WHERE/WHEN will the program component be implemented first?

Within Operations, one priority will be to define the information most needed by mission-critical job categories, and the format and location that will make it most useful to these mission-critical employees. Guidelines will be developed for documentation, as well as the software tools that should be used for different types of information.

WHAT are the projected future work phases?

Year 1 - Professional services support for preparation of documentation/KM guidance document, train staff on guidance document, and begin development of documentation for mission-critical job categories. Based on experience in the first year, the organization can consider continued use of professional services and/or creation of new in-house positions to provide this support on an ongoing basis.

Year 2 – Create a new position to support documentation/KM policy. May need additional professional services support and/or additional SFPUC staff support for continued development of documentation for mission-critical job categories.

Future Years - Continue developing documentation for mission-critical classifications.

Program Component:

Technical Training

WHY is this program component needed?

It is imperative that staff are adequately trained on the technical aspects of their job in order to perform their duties in a safe and competent manner.

WHAT is the program component?

An initiative to take the results of the assignment-specific competency analysis and perform a criticality analysis of different tasks to determine priority areas for providing training. The most appropriate delivery mechanisms and formats will be assessed as well.

Organizations which have strong technical training programs make significant investments in order to ensure worker readiness. Colorado Springs Utilities, with 1,800 employees, has 11 staff members assigned to technical craft development and 7 staff members assigned to instructional design. 7 staff members provide training related to organizational and professional development. Metro Vancouver spent \$400,000 to develop a training program for Water Treatment Operations. Union Sanitary District, an agency of 130 staff, spent \$1.3 million over 7 years for their combined technical training, documentation, and competency analysis program. The City of San Diego's in-house training program cost approximately \$1.8 million annually, including staff time.

HOW will it be implemented?

Research will be done on other organizations with best-in-class technical training programs. As a research component, a team of staff from SFPUC will be sent to visit and learn from other best-in-class utilities that gave presentations during the Workforce Reliability Workshop Series (e.g. Metro Vancouver, Colorado Springs Utilities, East Bay Municipal Utility District, City of San Diego, and Union Sanitary District). Knowledge gained from these visits could also positively impact the programs for competency analysis, staff development, and documentation/knowledge management strategy. The team will also consider visiting local private corporations that excel in training to provide a different perspective.

WHERE/ WHEN will the program component be implemented first?

Priority will be given to training needed by mission-critical job categories:

- *Electronic Maintenance Technicians / Instrument Technicians*
- *Engineers (Electrical, IS/SCADA, Process, Structural, and Research and Development)*
- *Wastewater Treatment Operator*
- *Water Treatment Operator*
- *Machinist*
- *Electricians (Electrical Line Workers)*

WHAT are the projected future work phases?

Technical training will be developed for other job categories in future work phases.

Program Component:

Training and Equipment for Knowledge Workers

WHY is this program component needed?

In our current high-tech environment, all employees should be considered knowledge workers who need to be able to access information from and input information to computerized information systems. This includes trades workers, who are generally selected based on their knowledge of their trade, but who may be required to use a wide range of software systems in order to (1) obtain information they need to do their work, (2) obtain the resources (e.g., materials and supplies) they need to perform their work, and (3) record their work. As a result, these workers need access to computers (e.g., mobile devices) and adequate training on how to use software programs.

Software programs used by operations staff to perform their work include the following:

- *Maximo*
- *SharePoint*
- *mIToolbox*
- *SCADA/DCS*
- *ArcGIS*
- *Learning Management System*
- *Laboratory Information Management System*
- *BERM/Pretreatment Information Management System*
- *Customer Care and Billing*

WHAT is the program component?

While competency analysis will identify the tasks employees need to perform, this analysis will be expanded to include the computerized information employees will need to access and input in order to perform their work successfully. This will be used as a basis for assessing computerized equipment and training needs (including geographical accessibility of computer training sites).

HOW will it be implemented?

Preparation of a matrix that identifies for each mission-critical category the software used, the equipment needed, training needed, and location of nearest computer training site.

WHERE/WHEN will the program component be implemented first?

Priority will be given to computer access and training for mission-critical trades categories:

- *Electronic Maintenance Technicians / Instrument Technicians*
- *Wastewater Treatment Operator*
- *Water Treatment Operator*
- *Machinist*
- *Electricians (Electrical Line Workers)*

WHAT are the projected future work phases?

This information will be used as a basis for budgeting for equipment/tools (including software), training, and training infrastructure.

IV. OPTIMIZING STAFF UTILIZATION

Program Component:

Standardization of Equipment

WHY is this program component needed?

Staff utilization can be optimized through the standardization of equipment where the functional purpose of the equipment is the same. The following benefits have been identified:

- *More operational reliability when selection is based on life cycle cost rather than the up-front capital investment;*
- *Facilitation of cross-training and staff rotations (which is beneficial for operational reliability and staff development purposes);*
- *Reduced staff training time, as learning from one site or machine becomes transferable;*
- *Reduced inventories, and therefore reduced costs for warehousing spare parts;*
- *Larger, more expensive pieces of equipment can be cost-effectively stocked since they would be able to be used in a number of different facilities;*
- *Emergency response would be improved, since other Enterprises' staff and spare parts could be used to make repairs;*
- *Simplifies maintenance and the ordering of parts;*
- *Reduced inventories of specialized tools and test equipment;*
- *Less time needed to keep up with Operational Equipment Maintenance updates and recommendations;*
- *Safer for employees as they have more experience with less items; and*
- *Reduced cost of engineering and construction management for projects since all staff are familiar with the standard equipment.*

WHAT is the program component?

An initiative to look for opportunities to standardize equipment, using equipment makes and models that are consistent with long-term operational reliability. This effort should include cooperation from different aspects of operations which share equipment needs (e.g., Water, Power, and Wastewater Enterprises); engineers as well as operators; and the financial support services (e.g., Contract Administration and Purchasing) which would be needed to effectively standardize equipment in certain functional areas.

HOW will it be implemented?

This program will be implemented by examining the pros and cons of different equipment manufacturers for each type of equipment that is under consideration for standardization. Workshops may be held within different Operations groups to provide feedback on equipment types for selection of the standard vendors.

WHERE/WHEN will the program component be implemented first?

Standardization of equipment will be piloted in the Power Enterprise where a program of standardization is already under development.

WHAT are the projected future work phases?

In future years, equipment can be standardized across the SFPUC, where applicable. At a minimum, equipment should be standardized within each Enterprise.

Program Component:

Upgrade Maximo Interfaces with other Programs

WHY is this program component needed?

Maximo/eTime

The current interface between eTime and Maximo is time-intensive for operations/ maintenance staff and supervisors to use. Because of slow access times to these web-based applications, some supervisors spend 2-3 hours per day entering time and making maintenance assignments for their staff, and staff who enter time themselves often spend at least 15 minutes logging in and assigning time. An improved system would increase staff efficiency. An improved system is also likely to reduce errors as data will not have to be entered multiple times into different systems, but will be automatically populated from one to the other.

A preliminary estimate of the amount of time spent by SFPUC staff accessing and assigning time in eTime found that the organization spends approximately \$3.9 million per year on this access (see calculation below). While not all of this would be recognized as a cost savings because staff would still need to log in occasionally (e.g. to file sick time or vacation time), a significant portion of that cost could be recovered.

Estimated cost of eTime access:

- *Time spent accessing eTime = 15 min/day*
- *Available work hours per year = 2,080 hours*
- *Assumed average actual hours worked = 75% x 2,080 hours = 1,560 hours = 195 days*
- *Time spent accessing eTime = (15 min/day) x (195 days worked) = 2,925 min = 49 hours*
- *Average hourly rate for crew and supervisors (1,063 employees), including assumed overhead multiplier of 1.85 = \$74.64/hour*
- *Average annual cost per crew member for accessing eTime = (\$74.64/hour) x (49 hours) = \$3,657/year*
- *Total SFPUC cost for accessing eTime = (1,063 staff) x (\$3,657) = **\$3,887,391***

Maximo/SCADA (Condition-Based Maintenance)

Maintenance is typically performed on equipment after a predetermined frequency/duration of time (calendar-based), regardless of the amount of use in that time period or whether it is critical for the process or operation. There is a potential for maintenance savings if maintenance practices are optimized based on the criticality of the equipment and condition-based maintenance is a key to this process. Maintenance can be performed on the most critical equipment when it is needed based on their condition or usage instead of performing maintenance based on a reoccurring calendar date, and a notification or Work Order can be generated automatically to the maintenance staff instead of waiting for the equipment to fail or have it discovered during a calendar-based PM procedure. This will also direct limited maintenance resources to the most critical equipment, and decrease the maintenance efforts to least critical equipment. Many pieces of equipment come standard with condition-monitoring instruments or run-time meters that can monitor parameters such as operating time, vibration, temperature, etc. These parameters are monitored by SCADA, but are not recorded in Maximo to help factor into the maintenance program for that equipment.

WHAT is the program component?

An initiative to improve the interface between Maximo and other programs such as eTime and SCADA, such that access time is reduced and efficiency is increased. This initiative will include the following components, among others:

- *Investigate the issues with the web-based eTime and Maximo systems, and work to streamline, repair, or replace these software systems to improve staff efficiency when entering time.*
- *Investigate interfacing the preventative maintenance (PM) module of Maximo with the performance data collected by the SCADA Historian. Data should populate automatically in Maximo and factor into the PM programs established for each piece of equipment.*
- *Prioritize the most critical pieces of equipment, determine the hardware needed to measure the performance parameters, and determine the hardware/software required to interface between the two programs.*
- *Examine condition-based maintenance for vehicle fleets as well, using GPS systems for predictive maintenance.*

HOW will it be implemented?

Maximo/eTime

This program component will begin with research into the features available in both Maximo and eTime and how data could be populated from one program to the other. Additionally, a third-party program (such as the DataSplice program currently being used on mobile devices in the Wastewater Enterprise) will be investigated that can populate data into both Maximo and eTime, without users having to specifically log into either program.

Condition-Based Maintenance

This program component will require assessment of ITS' implementation plan for the Enterprise Historian program that is being planned for installation. This includes collection and analysis of data from initial implementation testing. Also included will be the examination of SFPUC's different GPS systems, decision on a standard system, and implementation of condition-based maintenance for fleet vehicles based on mileage, operation, etc.

These programs will require significant support from ITS on both the software side (e.g. with Enterprise Historian, connecting to SCADA, simplification of eTime, etc.) and the hardware side (e.g. connecting new sensors to Enterprise Historian). As such, ITS will need to hire an additional technician to help with implementation of these programs, in addition to the Project Manager that is currently budgeted.

WHERE/WHEN will the program component be implemented first?

A pilot scale program should be implemented within one or more Divisions to work out any issues that may arise between the programs. Once issues are resolved, the new solution can be rolled out more widely to an entire Enterprise for a wide-scale pilot test.

WHAT are the projected future work phases?

When communication problems between Maximo and the other programs are reduced to a satisfactory level, this program component can be implemented throughout the SFPUC.

Program Component:

Improve Network Performance Issues

WHY is this program component needed?

Many staff in the SFPUC who work in remote locations (i.e. not at the Downtown Market Street offices) suffer from slow access to critical software programs, dramatically increasing the time spent waiting for web-based software systems to load (e.g. Maximo, eTime, etc.). Improving these performance issues at all remote SFPUC locations would increase employee productivity by reducing wait times to log-in and work with SFPUC's software systems. An additional concern is that the security systems set up at SFPUC facilities, such as security camera feeds, may not have enough bandwidth to stream to monitoring locations, reducing the effectiveness of the security systems.

WHAT is the program component?

An initiative to improve the hardware network connections within the SFPUC to improve speed of web access and reduce wait times for accessing SFPUC's software systems. For example, the SFPUC might consider replacing existing copper T1 network lines with fiber optic lines, or upgrading the servers hosting frequently accessed programs (e.g. eTime).

HOW will it be implemented?

Implementation will begin with analysis of bottlenecks in the current infrastructure. When a list of performance bottlenecks has been identified and prioritized, Information Technology Services (ITS) will begin upgrading connections as funding permits.

During implementation, ITS should also work to develop a long-term plan for solving/addressing performance issues. This may include development of a form for employees to report slow connections that can be investigated by ITS.

Additionally, ITS should assess and inform SFPUC staff of the "typical" access time for different software applications at different facilities so staff have a basis for reporting slow connections to the ITS Helpdesk.

WHERE/WHEN will the program component be implemented first?

This program component will be implemented by ITS, and will begin with the upgrade of Oceanside Water Pollution Control Plant from a T1 line to a fiber optic connection. ITS will then investigate network performance issues at other remote sites as these issues are reported.

WHAT are the projected future work phases?

Future work phases will include continued monitoring of performance issues at SFPUC facilities, with funds being devoted to repair of problematic connections.

Program Component:

Use Mobile Devices to Improve Efficiency

WHY is this program component needed?

Operations and maintenance staff currently have to return to their main computer station in order to access the SCADA system or maintenance work orders. By giving staff the ability to access this data remotely, staff efficiency can be improved by allowing them to move from task to task without interrupting to go back to their computer station to get the next assignment.

WHAT is the program component?

An initiative to look into providing mobile devices to operations and maintenance staff for improved staff efficiency. Mobile devices under consideration would be iPads, other tablet computers, and/or Intermec units, among others. Specifically, this initiative would consider the following uses of mobile devices:

- Ability to view SCADA screens (and for some users, the ability to control the system remotely);*
- Ability to create maintenance work orders remotely; and*
- Ability to track, modify, and complete maintenance work orders remotely.*

Also included in this initiative would be the consideration of docking stations for the mobile devices rather than wireless access, to provide staff with a reliable signal in key locations throughout SFPUC facilities.

HOW will it be implemented?

Implementation will begin with the assessment of what is needed by different Enterprises and what is being done right now (e.g. Mobile Pilot Program in Wastewater Enterprise). The number of staff with access to mobile devices will need to be determined based on the needs of the Enterprises (e.g. one per person, one per crew, one per vehicle).

WHERE/WHEN will the program component be implemented first?

After the initial assessment, new mobile devices can be piloted in specific Divisions with the highest need. Some data may also be available from current pilot testing.

WHAT are the projected future work phases?

When the pilot testing is completed with satisfactory results, use of mobile devices can be expanded across the organization.

Program Component:

Standardization of Nomenclature

WHY is this program component needed?

SFPUC has equipment that is utilized across multiple Divisions/Enterprises in the organization. However, a lack of standardization in nomenclature makes it difficult to assess the inventory of the organization. This problem also exists with facility naming, leading to inconsistency in documentation. Different codes can be used for the same piece of equipment or facility (e.g. motors can be referred to as “M,” “MOTR,” etc.; Sunol Valley Water Treatment Plant is also referred to as Sunol Valley Water Filtration Plant; etc.), and measurements can be provided in different units (e.g. 5-1/8” vs. 5.125”). Standardizing the nomenclature for equipment and facilities across the organization will allow better tracking of parts inventories, more standardized documentation, and more reliable service.

WHAT is the program component?

An initiative to inventory all of the parts, equipment lists, facilities, etc. across the organization and develop standard nomenclature.

HOW will it be implemented?

Staff from Water, Wastewater and Power Operations will participate in this process as well as the Bureau of Finance.

WHERE/WHEN will the program component be implemented first?

A priority will be to develop documented naming conventions that can be attached to the planned Documentation/knowledge Management Guide.

WHAT are the projected future work phases?

A plan will be needed for disseminating information on standard nomenclature (e.g., through training sessions on the Documentation/Knowledge Management Guide).

APPENDIX B: ADDITIONAL NEEDS ASSESSMENT DATA

Table B-1: Mission-Critical Engineer Breakdown by Type

Engineer Type	# of Divisions
Electrical Engineer	2
IS/SCADA Engineer	2
Process Engineer	1
Structural Engineer	1
R&D Engineer	1

APPENDIX C: WORKFORCE RELIABILITY WORKSHOP SCHEDULE

Date	Presentation Title <i>Speaker(s), Organization</i>
May 19	Coordinated Candidate Development: How Utilities, Professional Associations, & Educational Institutions are Working Together in Waco to Create New Water Operators <i>Glenda Dunn and Teresa Bryant, Water Utility Services - Waco, Texas</i>
May 24	The City of San Diego One Stop Shop Training Model <i>Stuart Karasik, Public Utilities Department, City of San Diego, California</i>
May 31	Matching our Workforce Development Investments to our Workforce Development Goals <i>Jeff Crockett, Colorado Springs Utilities, Colorado - Springs, Colorado</i>
June 2	The Only Constant is Change – Job Redesign & Technical Knowledge Transfer at Metro Vancouver <i>Sharon Peters and Jennifer Crosby, Metro Vancouver - British Columbia, Canada</i>
June 7	Competency Analysis as a Basis for Documentation & Technical Training <i>Jim McPherson, Union Sanitary District – Union City, California</i>
June 21	Developing Workforce: Managing Knowledge <i>Cindy Goodburn, Little / Englewood Wastewater Treatment Plant – Englewood, Colorado</i>
June 30	Corporate Culture Change <i>Jill Duerig, Zone 7 Water Agency – Livermore, California</i> <i>John Rossi, Western Municipal Water District – Riverside, California</i>
July 7	Mentoring as a Component of Leadership Development <i>Maria Marques, East Bay Municipal Utility District – Oakland, California</i>
July 14	Implementing Corporate Culture Change: Moving from Vision to Reality <i>Pat McCafferty and Anne Farquhar, Yarra Valley Water – Mitcham, Victoria, Australia</i>
July 21	Strategic Planning & Optimization of facilities & Equipment to Improve Staffing Efficiency <i>David Huey, Contra Costa Water District – Concord, California</i>
July 28	USD's Leadership Development Program: Growing the Employees You Have Into the Leaders You Need <i>Larry Simmers, Union Sanitary District – Union City, California</i>

APPENDIX D: SAMPLE PRIORITIZATION BALLOT FOR SFPUC STAFF

**Table D-1: Sample SFPUC Staff Prioritization Ballot
(see next page)**

SFPUC Workforce Reliability Recommendation Prioritization Workshop

SFPUC STAFF PRIORITIZATION BALLOT

Please select **NO MORE THAN** ten (10) recommendations that you would most like to see implemented at the San Francisco Public Utilities Commission. Clearly mark the recommendations you choose in the first column.

Check	Number	Recommendation
AVAILABILITY OF QUALIFIED CANDIDATES/ORGANIZATIONAL RECRUITMENT PROCESS		
	1	Increase awareness of the public, students (with a focus on high school and community college students), and their parents, of job opportunities in the water industry .
	2	Actively support candidate development programs (at the high school, community college, and university level) for mission-critical job categories (e.g. through internships, operator-in-training programs, and apprenticeships).
	3	Collaborate with unions on candidate development (e.g. apprenticeship programs for mission-critical job categories).
COMPETENCY ANALYSIS/STAFF DEVELOPMENT/TECHNICAL TRAINING		
	4	Develop a strong internal training program that includes the ability to (1) analyze and prioritize technical, staff development, and health and safety training needs, and (2) select and/or develop the most appropriate mechanism to meet those needs.
	5	Provide Subject Matter Experts (SMEs) with the technical support needed (e.g. from instructional designers, videographers, and technical writers) to translate their organizational and facility-specific knowledge into a documented form that will be usable by others.
	6	Analyze and document competencies and knowledge needed for successful performance of work.
	7	Hold a San Francisco Public Utilities Commission conference to share information among employees.
	8	Incorporate staff training and ongoing staff access to knowledge about new facilities, equipment, and processes into the capital project delivery process (e.g. require vendors and contractors to submit training materials and documentation in prescribed format).
	9	Use cross-training and staff rotations , where feasible, to broaden staff knowledge, increase operational flexibility, encourage continuous learning, and keep staff interested and motivated.
	10	Implement incentives to reward creation and achievement of learning goals (e.g. as part of a performance evaluation process).
	11	Explore opportunities for regional collaboration on training : (a) creation of shared technical training programs, (b) providing courses for each other (resource sharing), and/or (c) shared development of community college courses to meet shared needs (in relation to technical training and/or staff development).
	12	Implement a formal mentoring program that promotes the professional development of staff and provides them with the knowledge and skills needed to prepare them for supervisory and management roles.

Please select **NO MORE THAN** ten (10) recommendations that you would most like to see implemented at the San Francisco Public Utilities Commission. Clearly mark the recommendations you choose in the first column.

<u>Check</u>	<u>Number</u>	<u>Recommendation</u>
	13	Create a leadership development program that utilizes a combination of in-house training, external coursework through community colleges, and mentoring to provide leadership and supervisory skills to staff.
	14	Collaborate with unions on staff development of current employees (e.g. training and mentoring programs).
DOCUMENTATION/KNOWLEDGE MANAGEMENT		
	15	Provide sufficient resources to promote full utilization of Learning Management System , to assure adequate tracking of training needs and training provided.
	16	Implement processes for documentation and transfer of critical knowledge prior to retirement of key employees.
	17	Provide adequate support for development of documentation of new and existing facilities, processes, equipment, and procedures (e.g. provision of templates, creation of a Knowledge Management Team with time allocated for documentation of tasks, and assistance with technical writing).
	18	Build customized technical training materials that relate to our own facilities, processes, and procedures (based on utility-specific documentation).
	19	Provide sufficient resources to fully implement a knowledge management system (e.g. mIToolbox) that will provide staff with the information they need on facilities, equipment, processes, policies, operations and maintenance procedures, etc.
INNOVATIONS TO OPTIMIZE STAFF UTILIZATION		
	20	Increase use of information technology to optimize use of staffing available (e.g. access to SCADA information through smartphones, electronic clipboard for recording/uploading data).
	21	Design and construct facilities in a way that will minimize future staffing needs .
	22	Standardize equipment and processes where feasible in order to minimize staff technical training needs and increase operational flexibility in staff assignments.
	23	Explore opportunities for regional collaboration on operations and maintenance (e.g. sharing operators, equipment, etc.)
IMPLEMENTATION ISSUES		
	24	Analyze (using 360 degree feedback mechanism and Human Synergistics methodology) and modify corporate culture to increase transparency and promote continuous learning, accountability, cooperation, and performance.
	25	Improve quantity, quality, and openness of communication between managers/supervisors and their subordinates.
	26	Gain support from senior management for workforce reliability efforts (e.g. providing sufficient resources in terms of funding and staff time).

Table D-2: Source Utility Presentations of SFPUC Staff Recommendations

<u>Number</u>	<u>Recommendation</u>	<u>Model Organization(s)</u>
1	Increase awareness of the public, students (with a focus on high school and community college students), and their parents, of job opportunities in the water industry.	City of Waco, Littleton/Englewood
2	Actively support candidate development programs (at the high school, community college, and university level) for mission-critical job categories (e.g. through internships, operator-in-training programs, and apprenticeships).	Waco, CSU, Littleton/Englewood, Zone 7/WMWD, CCWD
3	Develop a strong internal training program that includes the ability to (1) analyze and prioritize technical, staff development, and health and safety training needs, and (2) select and/or develop the most appropriate mechanism to meet those needs.	San Diego, CSU, Vancouver, USD, Zone 7/WMWD, CCWD
4	Provide Subject Matter Experts (SMEs) with the technical support needed (e.g. from instructional designers, videographers, and technical writers) to translate their organizational and facility-specific knowledge into a documented form that will be usable by others.	San Diego, CSU, USD, Littleton/Englewood
5	Provide sufficient resources to promote full utilization of Learning Management System, to assure adequate tracking of training needs and training provided.	San Diego, CSU, CCWD
6	Implement processes for documentation and transfer of critical knowledge prior to retirement of key employees.	Waco, San Diego, Vancouver, USD
7	Analyze and document competencies and knowledge needed for successful performance of work.	CSU, Vancouver, USD, Zone 7/WMWD
8	Standardize equipment and processes where feasible in order to minimize staff technical training needs and increase operational flexibility in staff assignments.	CSU, Littleton/Englewood, CCWD
9	Increase use of information technology to optimize use of staffing available (e.g. access to SCADA information through smartphones, electronic clipboard for recording/uploading data).	Littleton/Englewood, CCWD
10	Design and construct facilities in a way that will minimize future staffing needs.	Vancouver
11	Hold a San Francisco Public Utilities Commission conference to share information among employees.	Vancouver, Zone 7/WMWD, CCWD
12	Provide adequate support for development of documentation of new and existing facilities, processes, equipment, and procedures (e.g. provision of templates, creation of a Knowledge Management Team with time allocated for documentation of tasks, and assistance with technical writing).	San Diego, Vancouver, USD, Littleton/Englewood, CCWD
13	Incorporate staff training and ongoing staff access to knowledge about new facilities, equipment, and processes into the capital project delivery process (e.g. require vendors and contractors to submit training materials and documentation in prescribed format).	Vancouver, USD

Number	Recommendation	Model Organization(s)
14	Build customized technical training materials that relate to our own facilities, processes, and procedures (based on utility-specific documentation).	CSU, Littleton/Englewood, USD
15	Use cross-training and staff rotations, where feasible, to broaden staff knowledge, increase operational flexibility, encourage continuous learning, and keep staff interested and motivated.	Englewood, EBMUD, Yarra Valley, CCWD
16	Analyze (using 360 degree feedback mechanism and Human Synergistics methodology) and modify corporate culture to increase transparency and promote continuous learning, accountability, cooperation, and performance.	San Diego, Littleton/Englewood, Zone 7/WMWD, Yarra Valley, CCWD
17	Improve quantity, quality, and openness of communication between managers/supervisors and their subordinates.	Yarra Valley, CCWD
18	Implement incentives to reward creation and achievement of learning goals (e.g. as part of a performance evaluation process).	San Diego, CSU
19	Explore opportunities for regional collaboration on training: (a) creation of shared technical training programs, (b) providing courses for each other (resource sharing), and/or (c) shared development of community college courses to meet shared needs (in relation to technical training and/or staff development).	San Diego, CSU, CCWD, USD
20	Implement a formal mentoring program that promotes the professional development of staff and provides them with the knowledge and skills needed to prepare them for supervisory and management roles.	Englewood, Zone 7/WMWD, EBMUD, USD
21	Provide sufficient resources to fully implement a knowledge management system (e.g. mIToolbox) that will provide staff with the information they need on facilities, equipment, processes, policies, operations and maintenance procedures, etc.	Vancouver, USD, Littleton/Englewood, Zone 7/WMWD, CCWD
22	Gain support from senior management for workforce reliability efforts (e.g. providing sufficient resources in terms of funding and staff time).	All
23	Create a leadership development program that utilizes a combination of in-house training, external coursework through community colleges, and mentoring to provide leadership and supervisory skills to staff.	USD
24	Collaborate with unions on candidate development (e.g. apprenticeship programs for mission-critical job categories).	Waco
25	Collaborate with unions on staff development of current employees (e.g. training and mentoring programs).	San Diego, USD
26	Explore opportunities for regional collaboration on operations and maintenance (e.g. sharing operators, equipment, etc.)	CCWD

APPENDIX E: RECOMMENDATION VOTING BY LOCATION AND FOR NON-SFPUC BALLOTS

Table E-1: Recommendation Voting by Venue for SFPUC Staff

Rank	Recommendation Number	SEP Votes	Market Votes	Millbrae Votes	Absentee Votes	TOTAL
1	16	11	10	5	6	32
2	4	15	5	8	3	31
3	25	12	7	7	4	30
4	5	13	8	4	2	27
5	22	11	5	6	5	27
6	17	12	4	8	2	26
7	6	11	7	3	4	25
8	20	10	8	3	4	25
9	2	12	5	5	2	24
10	9	10	6	4	4	24
11	12	9	7	4	2	22
12	26	8	5	5	4	22
13	18	13	2	5	1	21
14	24	4	10	3	4	21
15	8	10	3	4	3	20
16	19	7	3	6	4	20
17	13	8	5	4	2	19
18	3	7	4	5		16
19	11	6	3	5	2	16
20	15	2	3	5	3	13
21	1	7	2	1	2	12
22	10	3	4	1	4	12
23	14	4	2	1	1	8
24	7	4	2	1		7
25	23	2	2	1	2	7
26	21	0	1	4		5

Table E-2: Top Recommendations from Non-SFPUC Ballots

Rank	Recommendation
1	Actively support candidate development programs (at the high school, community college, and university level) for mission-critical job categories (e.g. through internships, operator-in-training programs, and apprenticeships).
2	Provide Subject Matter Experts (SMEs) with the technical support needed (e.g. from instructional designers, videographers, and technical writers) to translate their organizational and facility-specific knowledge into a documented form that will be usable by others.
3	Hold a San Francisco Public Utilities Commission conference to share information among employees.
4	Build customized technical training materials that relate to our own facilities, processes, and procedures (based on utility-specific documentation).
5	Gain support from senior management for workforce reliability efforts (e.g. providing sufficient resources in terms of funding and staff time).

APPENDIX F: ALL IMPLEMENTATION IDEAS SUGGESTED AT PRIORITIZATION WORKSHOPS

**Table F-1: Table of Feedback Provided to the Question “Where Do We Start?”
(See next page)**

Location	Rec. #	Type	Item	Category
SEP	2	Start	Start in the elementary schools to raise student awareness of the water cycle and the need for clean water and wastewater treatment.	Qualified Candidates
SEP	2	Start	Encourage youngsters to focus on the basics of math and science. With that knowledge, they can learn whatever they need to be successful at Water/Wastewater treatment	Qualified Candidates
SEP	2	Start	Work with community colleges and the school district's "Tech 21" program	Qualified Candidates
SEP	2	Start	Conduct or participate in job fairs to advertise positions at the PUC	Qualified Candidates
SEP	2	Start	Offer internships across the board for Water and WWE	Qualified Candidates
SEP	2	Start	Offer field trips of PUC facilities to school groups (elementary through college)	Qualified Candidates
SEP	2	Start	Send PUC representatives to speak at schools (elementary through college)	Qualified Candidates
SEP	2	Start	Work with schools to develop their water/wastewater curriculum	Qualified Candidates
SEP	2	Start	Create incentives to PUC staff to volunteer at the schools	Qualified Candidates
SEP	2	Start	Outreach to communities, not just schools, especially those with high unemployment rates	Qualified Candidates
SEP	2	Start	Because this recommendation mentions the need to prepare candidates for mission critical job categories, then this needs to address current staff. We will not hire individuals directly from schools into a mission critical assignment. So, in the context of developing <u>internal</u> candidates, start an internal mentoring program.	Qualified Candidates
Market	2	Start	Incorporate apprenticeship programs into the new MOU/contract for crafts (for July 2012), especially for linemen, meter techs and relay techs	Qualified Candidates
Market	2	Start	Be active on college campuses (participate in job fairs, visit campuses)	Qualified Candidates
Market	2	Start	Post PUC job openings on student/campus websites and with professional organizations, like local AWWA and CWEA	Qualified Candidates
Market	2	Start	Invite local professors to visit PUC and learn about job opportunities available and to tell the PUC about students with appropriate skills that are available to join the PUC	Qualified Candidates
Market	2	Start	Provide local colleges and university professors with specific PUC projects (i.e. real life challenges) for the students to work on	Qualified Candidates
Market	2	Start	Develop and maintain a solid internal PUC training program as a means of attracting good candidates	Qualified Candidates
Market	2	Start	Pool PUC efforts with other agencies in the region	Qualified Candidates
Market	2	Start	Identify mission critical job categories	Qualified Candidates
Market	2	Start	Review/Add to the curriculum at local schools to address water/wastewater/power issues	Qualified Candidates
Market	2	Start	Provide or expand (as appropriate) student internships	Qualified Candidates
Millbrae	2	Start	Expand the current program of sending PUC representatives to area high schools to tell students about the work done by the PUC. This program is in place at Thurgood Marshall HS. Send speakers who are alumni of each school if they are available to participate.	Qualified Candidates
Millbrae	2	Start	Include trade schools in the outreach program	Qualified Candidates
Millbrae	2	Start	When the PUC participates in neighborhood fairs, include information about job opportunities at the PUC. Include union representatives in the booth. Answer questions about employment by the PUC.	Qualified Candidates
Millbrae	2	Start	Introduce high school students to the types of jobs done at the PUC and what skills they need to qualify for different positions	Qualified Candidates
Millbrae	2	Start	Encourage high school students to stay in school and take math, science, and communications classes so that they can qualify for and succeed in PUC jobs.	Qualified Candidates
Millbrae	3	Start	Each union takes a more focused approach to establish the actual skills needed for public sector employees. The current focus of the unions is on skill sets needed in the private sector	Qualified Candidates
Millbrae	3	Start	Utilize the joint apprentice committees. The PUC is a member of these committees, but has not been as active recently as in the past. Re-establish effort in this area such that the PUC can steer union training programs in a direction that benefits the PUC.	Qualified Candidates
Millbrae	3	Start	Work with unions to change their training programs to support water-industry standards	Qualified Candidates
Millbrae	3	Start	Get direction from the unions on how to set up a rotation training program for engineers	Qualified Candidates
Millbrae	3	Start	Work with the the unions to create apprenticeship programs and then make sure the PUC preferentially hires from those programs. Make it worthwhile for individuals to participate in the apprenticeship programs by raising the chances they'll be hired by the PUC.	Qualified Candidates
Millbrae	3	Start	Evaluate PUC jobs and re-establish skill sets/criteria for each job	Qualified Candidates
Millbrae	3	Start	Coordinate training with the skills needed to perform PUC jobs	Qualified Candidates

Millbrae	3	Start	Include input from city and union supervisors in each individual's annual performance review	Qualified Candidates
SEP	4	Start	Dedicate resources to create the internal training program. Effort was put forth in the past, but support dwindled and the training became inconsistent. Start and maintain the effort.	Prepared Staff
SEP	4	Start	Allocate time for resources to keep the program going. Make this their "day job" not something in addition to the current assignment	Prepared Staff
SEP	4	Start	Put money in the budget for training	Prepared Staff
SEP	4	Start	Determine in advance how employees will be able to access info about the training program. Make sure access to this info is universal and all can reach it.	Prepared Staff
SEP	4	Start	Gain senior management support so that employees see training as important. Make it clear to staff what they will gain by getting the training.	Prepared Staff
SEP	4	Start	Set standard training schedules and stick to them. Make training part of the PUC culture so that training is expected by all staff on a regular basis, such as X hrs/wk every week or Y hrs/month every month.	Prepared Staff
SEP	4	Start	Simulate real life activities in the training program so useful information is assimilated by the students. Stay away from lessons that are too theoretical.	Prepared Staff
SEP	4	Start	Start by using SMEs as Trainers. Have Trainers teach Trainees. Have Trainees graduate to become Trainers so that the program is self sustaining.	Prepared Staff
Market	4	Start	Find knowledge gaps in staff by reviewing lessons learned. Interview staff to identify weaknesses in the plant operations or maintenance to know where to improve training programs	Prepared Staff
Market	4	Start	Require completion of "near-miss reports." Review those reports to know what training is needed	Prepared Staff
Market	4	Start	Create Job Task Analyses/Performance Models to set the bar on performance (this is applicable to technical positions)	Prepared Staff
Market	4	Start	Create Competency Models that address technical skills, management skills, and interpersonal skills	Prepared Staff
Market	4	Start	Identify internal experts as teachers/mentors. Note that not all SMEs are good teachers.	Prepared Staff
Market	4	Start	Develop a pipeline of SMEs to develop the training materials and teach (if they are qualified to teach)	Prepared Staff
Market	4	Start	Interview supervisors and managers regarding what to include in the training program	Prepared Staff
Market	4	Start	Make sure every employee knows the path to their professional goals	Prepared Staff
Millbrae	4	Start	Develop career paths for all employees	Prepared Staff
Millbrae	4	Start	Assess training needs/conduct a gap analysis between skills required and the skills of current employees	Prepared Staff
Millbrae	4	Start	Design training courses to fill the gaps	Prepared Staff
Millbrae	4	Start	Solicit input from supervisors, managers, and all other employees	Prepared Staff
Millbrae	4	Start	Implement a training and rotation program for PUC engineers	Prepared Staff
SEP	5	Start	Recognize who the SMEs are	Prepared Staff
SEP	5	Start	Recognize what areas deserve SME attention; prioritize the SME areas; not all SMEs are associated with mission critical operations/job categories	Prepared Staff
SEP	5	Start	Assign staff to shadow the SMEs	Prepared Staff
SEP	5	Start	Provide scribes and others to capture/record/document SME knowledge	Prepared Staff
SEP	5	Start	Plan training classes given by SMEs	Prepared Staff
SEP	5	Start	Complete a gap analysis to see where there is a lack of knowledge or reliance on just one SME	Prepared Staff
Market	5	Start	Identify SMEs and which ones are willing to help	Prepared Staff
Market	5	Start	Assign tech support staff to work with the SMEs	Prepared Staff
Market	5	Start	Create a repeatable process for documentation of SME knowledge	Prepared Staff
Market	5	Start	Create a process to incorporate captured knowledge from the SMEs	Prepared Staff
Market	5	Start	Validate the information documented/collection from the SMEs	Prepared Staff
Market	5	Start	Identify areas where only 1 -2 people hold the critical knowledge	Prepared Staff
SEP	6	Start	Develop and document standards based on verbal communication and experience	Prepared Staff
SEP	6	Start	Consider 'lessons learned' as a way to feed into the development of competency standards	Prepared Staff
SEP	6	Start	Identify the work that has already been carried out in QREP (for station 521 disinfection) and continue	Prepared Staff
SEP	6	Start	Make the process 'bottom up'	Prepared Staff
SEP	6	Start	Develop a scalable exam proces to validate traning and experience.	Prepared Staff

SEP	6	Start	Training for assessors	Prepared Staff
SEP	6	Start	Validate and cross reference with the performance appraisal process	Prepared Staff
Market	6	Start	Document specific skills and roles - perhaps as a form of checklist	Prepared Staff
Market	6	Start	review current job descriptions - are these realistic?	Prepared Staff
Market	6	Start	Interview subject matter experts (SMEs) to determine what skills and ability is needed	Prepared Staff
Market	6	Start	Develop a system or tool like LMS to manage the program	Prepared Staff
Market	6	Start	Identify current competencies such as skills, knowledge and abilities for all current and future positions	Prepared Staff
Market	6	Start	Ensure that organizational missions and goals are clearly communicated and understood	Prepared Staff
SEP	8	Start	Write it into contract documents - in electronic format	Prepared Staff
SEP	8	Start	O&M liasion with contractors	Prepared Staff
SEP	8	Start	Mnagement support	Prepared Staff
SEP	8	Start	Develop a feedback loop for maintenance, ops and engineering to encourage ownership of the process	Prepared Staff
SEP	8	Start	Start with engineering and the development of contracts	Prepared Staff
SEP	8	Start	Vendors and manufacturers training should be planned better and captured	Prepared Staff
SEP	8	Start	Ops and maintenance to communicate more	Prepared Staff
SEP	8	Start	Improve quality of contractors training	Prepared Staff
SEP	8	Start	Inout from O&M in capital projects	Prepared Staff
SEP	9	Start	Better understanding of the current process and baseline knowledge	Prepared Staff
SEP	9	Start	Develop a system for certification in different posts	Prepared Staff
SEP	9	Start	Mandatory staff rotations	Prepared Staff
SEP	9	Start	Good quality training program with a schedule that works at the optimum time for staff	Prepared Staff
Market	9	Start	Generate a list of roles and departments to set boundaries around cross training	Prepared Staff
Market	9	Start	Focus on problem areas and roles	Prepared Staff
Market	9	Start	Develop an application process	Prepared Staff
Market	9	Start	Look at interagency opportunities for cross training	Prepared Staff
Market	9	Start	Study other programs for ideas	Prepared Staff
Market	9	Start	Identify critical skills/areas in alignment with goals	Prepared Staff
Market	9	Start	Regular opportunities to share knowledge such as brown bags, staff meetings or forums	Prepared Staff
Market	9	Start	Interview staff to determine level of interest or desire to participate	Prepared Staff
Market	9	Start	Some form of integration with the performance process or other informal means	Prepared Staff
Millbrae	11	Start	Establish relationships with other organization's managements	Prepared Staff
Millbrae	11	Start	Develop a common budget for collaboration.	Prepared Staff
Millbrae	11	Start	Identify similar training needs between organizations.	Prepared Staff
Millbrae	11	Start	Have regular meetings between organizations.	Prepared Staff
Millbrae	11	Start	Establish a certificate program at Community Colleges - need a long term commitment from partner organizations.	Prepared Staff
Millbrae	11	Start	Increase use of technology (i.e. webcasts) to spread training interagency	Prepared Staff
Millbrae	11	Start	Identify currently available courses/programs.	Prepared Staff
Millbrae	11	Start	Identify partners, exchange information.	Prepared Staff
Millbrae	11	Start	Consider private sector partnerships with organizations who have similar training needs to get more weight from community colleges.	Prepared Staff
Millbrae	11	Start	Examine other regional collaborations for examples of how it might be applied to SFPUC.	Prepared Staff
Millbrae	11	Start	Create regional workgroups based on specific processes/equipment.	Prepared Staff
Millbrae	11	Start	Develop a shared website for aregional awareness of new projects/ideas	Prepared Staff
Millbrae	11	Start	Encourage employee attendance to national/regional conferences.	Prepared Staff
Millbrae	11	Start	Build on existing collaborations with other regional agencies.	Prepared Staff
Millbrae	11	Start	Interagency email discussion groups to solve problems.	Prepared Staff
Market	12	Start	Define need-critical areas and determine organizational needs.	Prepared Staff
Market	12	Start	Define the role of the mentor and identify common competencies (specialized, technical, etc.)	Prepared Staff

Market	12	Start	Identify internal and external role models to be mentors and help structure the program and what supervisory skills are required.	Prepared Staff
Market	12	Start	Identify existing mentoring programs and look at other models	Prepared Staff
Market	12	Start	Establish program entry requirements.	Prepared Staff
Market	12	Start	Establish expectations with regards to time, schedule, outline of program, etc.	Prepared Staff
Market	12	Start	Identify who will be mentored.	Prepared Staff
Market	12	Start	Address union concerns.	Prepared Staff
Market	13	Start	Contact community colleges regarding program.	Prepared Staff
Market	13	Start	Expand pool of resources beyond community colleges	Prepared Staff
Market	13	Start	Develop formal application process and facilitate registration.	Prepared Staff
Market	13	Start	Base objectives on SFPUC culture.	Prepared Staff
Market	13	Start	Research available courses.	Prepared Staff
Market	13	Start	Obtain funding for effort.	Prepared Staff
Market	13	Start	Partner with other agencies.	Prepared Staff
Market	13	Start	Allow staff to teach in programs.	Prepared Staff
Market	13	Start	Further define "leadership" skills and attributes.	Prepared Staff
Market	13	Start	Incorporate mentoring (recommendation 12).	Prepared Staff
Market	13	Start	Look at best practices.	Prepared Staff
Market	13	Start	Have participants study SFPUC relevant projects.	Prepared Staff
Market	13	Start	Set up a peer program.	Prepared Staff
Millbrae	15	Start	Not all courses are loaded onto the LMS - load more and ensure that the links work effectively	Prepared Staff
Millbrae	15	Start	Provide more resources and support to the LMS - ensure skills are adequate	Prepared Staff
Millbrae	15	Start	Develop a follow up procedure to ensure the LMS is effective - it is not currently sustainable	Prepared Staff
Millbrae	15	Start	Raise awareness of personal responsibility	Prepared Staff
Millbrae	15	Start	Staff should develop a clear understanding of how it works - training is required	Prepared Staff
Millbrae	15	Start	Develop better communications - email notifications that work	Prepared Staff
Millbrae	15	Start	Develop an approach to time, for training on LMS and for the training itself	Prepared Staff
Millbrae	15	Start	Develop a staff time and budgeting tool integrated with LMS	Prepared Staff
Millbrae	15	Start	Develop classification specific learning plans	Prepared Staff
Millbrae	15	Start	Analyze and implement previous efforts that interact with LMS	Prepared Staff
Millbrae	15	Start	Consolidate best practices across internal and external agencies	Prepared Staff
Millbrae	15	Start	Review the quality and structure of existing training packages	Prepared Staff
Millbrae	15	Start	Develop a follow up tool - what happens if you miss training?	Prepared Staff
Millbrae	16	Start	Subject matter experts should lead the development of materials and ownership of training	Prepared Staff
Millbrae	16	Start	Develop flow charts for specific tasks	Prepared Staff
Market	16	Start	Implement a documentation process in place for consistent outcomes and format so that what we want it to look like is clear	Prepared Staff
Market	16	Start	Implement documentation standards across the organization and decide what these standards are based on, e.g., best practices	Prepared Staff
Market	16	Start	Set up system for verifying information obtained.	Prepared Staff
Market	16	Start	Create job class for technical writer.	Prepared Staff
Market	16	Start	Conduct training on documentation process.	Prepared Staff
Market	16	Start	Find out who is about to retire or leave without fear of retaliation or discrimination within six months to two years of retirement.	Prepared Staff
Market	16	Start	Identify those potential retirees whose job are the most critical and/or if they are the only ones who know how to do the job	Prepared Staff
Market	16	Start	Develop system to assess criticality of job functions and what are the mission critical job functions.	Prepared Staff
Market	16	Start	Conduct interviews with retirees to ask them what is critical about their job.	Prepared Staff
Market	16	Start	Develop Standard Operating Procedures for tasks within each job function.	Prepared Staff
Market	16	Start	Set up training for replacement employees to ensure that knowledge is transferred once it has been collected.	Prepared Staff
SEP	16	Start	Make part of asset management program.	Prepared Staff
SEP	16	Start	Identify what already exists and what is needed.	Prepared Staff
SEP	16	Start	Evaluate the life left in existing assets.	Prepared Staff

SEP	16	Start	Identify the percentage of people who will be retiring in the near future	Prepared Staff
SEP	16	Start	Hire a successor to be trained by the retiring person during the last 1-2 years of employment.	Prepared Staff
SEP	16	Start	Have retiring employees document SOPs of everything they do	Prepared Staff
SEP	16	Start	Good documentation system should eliminate the need for last minute knowledge capture from retiring employees	Prepared Staff
SEP	16	Start	Gather recommendations from retiring employees regarding how to improve systems and processes.	Prepared Staff
SEP	16	Start	Have retiring employees work with training developers as SMEs.	Prepared Staff
SEP	16	Start	Improve system for providing access to emails/computer files after retirement.	Prepared Staff
SEP	16	Start	Get management buy-in for new systems to capture knowledge of retiring employees.	Prepared Staff
Millbrae	17	Start	Provide onsite IT support	Prepared Staff
Millbrae	17	Start	Develop a team approach to documentation - everyone has a role to play	Prepared Staff
Millbrae	17	Start	Use of consultant professional services working with subject matter experts	Prepared Staff
Millbrae	17	Start	Use ISO 14001 template, structure and outline for standardization	Prepared Staff
Millbrae	17	Start	Determine needs for dedicated staffing with the correct expertise (such as writing skills)	Prepared Staff
Millbrae	17	Start	Develop a database, standardized and integrated with other tools	Prepared Staff
Millbrae	17	Start	Develop guidelines for documentation practices	Prepared Staff
SEP	17	Start	Create a dedicated group for documentation with experience in doing it - not a temporary project.	Prepared Staff
SEP	17	Start	Electronic access for everyone - some people need edit access if processes change	Prepared Staff
SEP	17	Start	Streamline existing documentation.	Prepared Staff
SEP	17	Start	Continuously update documentation.	Prepared Staff
SEP	17	Start	Equipment suppliers must provide documentation.	Prepared Staff
SEP	17	Start	Should be an organizational-wide system.	Prepared Staff
SEP	17	Start	Use mlToolbox as a documentation management system.	Prepared Staff
SEP	17	Start	Create a central library with hard copies in addition to electronic access - needs a librarian or document manager.	Prepared Staff
SEP	17	Start	Work with apprenticeship programs to instill need to document and make training courses specific to facilities instead of broad for the purpose of passing tests.	Prepared Staff
SEP	17	Start	Develop procedures for updating documentation and for storing information	Prepared Staff
Millbrae	18	Start	Assess the SFPUC needs (development of materials, improvements, etc.)	Prepared Staff
Millbrae	18	Start	Experienced people are needed to develop the training material	Prepared Staff
Millbrae	18	Start	Most training material will be developed at the Enterprise level, where technical material is unique within each division	Prepared Staff
Millbrae	18	Start	The look and feel of training material should be as standardized as much as possible across the SFPUC	Prepared Staff
Millbrae	18	Start	Training materials should be included in a document control system, controlled by a librarian of sorts, with a proper change control protocol	Prepared Staff
Millbrae	18	Start	Training materials should teach people how to think and use resources	Prepared Staff
Millbrae	18	Start	Production of training materials will require technical writers, graphics staff	Prepared Staff
SEP	18	Start	Gather all current materials that are available now; review, organize, update and formalize as appropriate in order to create an electronic library and paper back-up of critical documents.	Prepared Staff
SEP	18	Start	Set up system of document control so that when one document is updated, they are all updated so that employees will have the most current and accurate information.	Prepared Staff
SEP	18	Start	Set up a records department with a librarian who will know where all the information is located.	Prepared Staff
SEP	18	Start	Provide technical resources so that documents can be scanned and/or pictures taken.	Prepared Staff
SEP	18	Start	Assign task to all employees to write down the Standard Operating Procedures on how to do their jobs.	Prepared Staff
SEP	18	Start	Hire data entry employees to put all the information into electronic format.	Prepared Staff
Millbrae	19	Start	A top down initiative is required to fully implement a knowledge management system	Prepared Staff
Millbrae	19	Start	A knowledge management system should be customized to each Enterprise or group	Prepared Staff
Millbrae	19	Start	A knowledge management system should tie into SCADA and the existing network	Prepared Staff
Millbrae	19	Start	A knowledge management system should be available to people in the office and field, possibly over wireless communications	Prepared Staff
Millbrae	19	Start	To begin implementation of a knowledge management system, data would be transferred out of CMMS and into system	Prepared Staff

Millbrae	19	Start	A knowledge management system would identify job plans, processes, frequencies of maintenance, operations criteria, and associated equipment	Prepared Staff
SEP	20	Start	Allocate resources to maintain system.	Optimizing Staff Utilization
SEP	20	Start	Optimize existing tools before adding more with proper and continuous updates	Optimizing Staff Utilization
SEP	20	Start	Conduct training to use tools we already have to their complete effectiveness, the whole program	Optimizing Staff Utilization
SEP	20	Start	Streamline access of information to users.	Optimizing Staff Utilization
SEP	20	Start	Bolster up the band-width.	Optimizing Staff Utilization
SEP	20	Start	Provide continued IT support after training.	Optimizing Staff Utilization
SEP	20	Start	Communicate to employees how to access information.	Optimizing Staff Utilization
SEP	20	Start	Provide iPads for all employees.	Optimizing Staff Utilization
SEP	20	Start	Assure access to information for employees in the field.	Optimizing Staff Utilization
Market	20	Start	Get away from paper documents – develop mIToolbox to most effective level	Optimizing Staff Utilization
Market	20	Start	Set up system where documents are stored in working format, not pdf's	Optimizing Staff Utilization
Market	20	Start	Investigate new technologies and determine which would be most useful.	Optimizing Staff Utilization
Market	20	Start	Educate employees in the benefits of information technology through a system of identified internal champions.	Optimizing Staff Utilization
Market	20	Start	Set funds aside for information technology.	Optimizing Staff Utilization
Market	20	Start	Obtain management buy-in	Optimizing Staff Utilization
Market	20	Start	Update existing outdated systems like FAMIS.	Optimizing Staff Utilization
Market	20	Start	Ensure uniformity across systems and Divisions.	Optimizing Staff Utilization
Market	20	Start	Conduct more and better training on information technology	Optimizing Staff Utilization
Market	20	Start	Spread the use of mIToolbox.	Optimizing Staff Utilization
Market	20	Start	Top management communicates clear direction about what information technology to use	Optimizing Staff Utilization
Market	20	Start	Set up a calendar system of available end-users and their skill set.	Optimizing Staff Utilization
Market	20	Start	Integrate all systems so that when you enter information once it populates all the necessary documents	Optimizing Staff Utilization
Market	20	Start	Set up a single point of access with a centralized system.	Optimizing Staff Utilization
Market	20	Start	Make it easy to use and navigate (3 click rule) with a single sign-on.	Optimizing Staff Utilization
Market	20	Start	Ensure consistency throughout the organization.	Optimizing Staff Utilization
Market	20	Start	Involve end-users in implementation.	Optimizing Staff Utilization
SEP	22	Start	Develop comprehensive Standard Operating Procedures	Optimizing Staff Utilization
SEP	22	Start	Stick to industry standards and don't reinvent the wheel.	Optimizing Staff Utilization
SEP	22	Start	Simplify and prioritize processes where possible.	Optimizing Staff Utilization
SEP	22	Start	Spare parts availability increases and minimizes inventory.	Optimizing Staff Utilization
SEP	22	Start	Identify preferred standard items for the Sewer System Improvement Program (SSIP), not just low bid.	Optimizing Staff Utilization
SEP	22	Start	Have Operations and Maintenance review the Request-for-Proposals (RFP's).	Optimizing Staff Utilization
SEP	22	Start	Standardize and streamline purchasing process.	Optimizing Staff Utilization
SEP	22	Start	License maintenance staff for operations certification for increased flexibility.	Optimizing Staff Utilization
SEP	22	Start	Identify subject matter experts.	Optimizing Staff Utilization
SEP	22	Start	Identify where it is feasible to standardize equipment and processes both locations and assets.	Optimizing Staff Utilization
SEP	22	Start	Conduct engineering overview with input from Operations and Maintenance.	Optimizing Staff Utilization
Millbrae	22	Start	Create equipment lists for all facilities.	Optimizing Staff Utilization
Millbrae	22	Start	Assess what equipment works and doesn't work.	Optimizing Staff Utilization
Millbrae	22	Start	Requires culture change - people have strong opinions about what equipment is best.	Optimizing Staff Utilization
Millbrae	22	Start	Engineering, operations, purchasing should all be involved in selection of standard equipment	Optimizing Staff Utilization
Millbrae	22	Start	Requires updated organizational purchasing policy.	Optimizing Staff Utilization
Millbrae	22	Start	Start with engineering in reviewing projects.	Optimizing Staff Utilization
Millbrae	22	Start	Assess real costs (including training and maintenance).	Optimizing Staff Utilization
Millbrae	22	Start	Develop standard plans for common, typical equipment.	Optimizing Staff Utilization
Millbrae	22	Start	De-value value engineering (place higher value on standard equipment with higher life expectancy and lower repair frequency)	Optimizing Staff Utilization

Market	24	Start	Implement system for 360 degree feedback - encourages accountability, etc	Organizational Support
Market	24	Start	Need a lead/spearhead to obtain management support - perhaps HR would lead	Organizational Support
Market	24	Start	Make 360 degree feedback mandatory part of performance reviews	Organizational Support
Market	24	Start	Tie incentives to successfully improving on feedback for acceptance of program.	Organizational Support
Market	24	Start	Feedback should go more than one level up so wider development areas can be recognized.	Organizational Support
Market	24	Start	Employee should not have a say in who will perform their evaluation.	Organizational Support
Market	24	Start	Establish communication protocols which are currently in place.	Organizational Support
Market	24	Start	Develop schedule, cycles, and action plans for delivering/following up on feedback	Organizational Support
Market	24	Start	Feedback should be able to be provided anonymously so there can be no retribution for criticisms.	Organizational Support
Millbrae	25	Start	Empower supervisors not just in responsibility but authority to act as well.	Organizational Support
Millbrae	25	Start	Communicate annual, quarterly and monthly goals to all employees.	Organizational Support
Millbrae	25	Start	Develop trust through action.	Organizational Support
Millbrae	25	Start	Encourage supervisors and managers to listen to their employees both up and down the chain of command.	Organizational Support
Millbrae	25	Start	Develop format for meaningful meetings with a cross-section of groups both horizontally and vertically and hold these meetings once a month.	Organizational Support
Millbrae	25	Start	The top of the chain of command should meet with employees in an assembly, not just immediate supervisor.	Organizational Support
Millbrae	25	Start	Set up standards where supervisors (from the General Manager to the first-line supervisor) are trained as coaches.	Organizational Support
Millbrae	25	Start	Provide employees with weekly updates on project status.	Organizational Support
Millbrae	25	Start	Conduct safety tailgates monthly instead of one day annually.	Organizational Support
SEP	25	Start	Conduct weekly updates.	Organizational Support
SEP	25	Start	Produce meaningful reports – reduce duplication of reports.	Organizational Support
SEP	25	Start	Review current issues / events in safety meetings e.g., news articles and recent events.	Organizational Support
SEP	25	Start	Develop standards for employee expectations.	Organizational Support
SEP	25	Start	Conduct training for managers, not just supervisors.	Organizational Support
SEP	25	Start	Recognize roles and responsibilities of the Maintenance Division.	Organizational Support
SEP	25	Start	Conduct one on one meetings.	Organizational Support
SEP	25	Start	Hold fireside chats.	Organizational Support
SEP	25	Start	Train managers and supervisors on people skills, positive reinforcement and better constructive criticism.	Organizational Support
Market	25	Start	Use 360 degree feedback mechanism for more communication.	Organizational Support
Market	25	Start	Dedicate time for supervisors/employees to meet to voice issues; make this a priority instead of an afterthought.	Organizational Support
Market	25	Start	Establish a process and timing.	Organizational Support
Market	25	Start	Encourage honesty in communication.	Organizational Support
Market	25	Start	Provide employees feedback on senior staff meetings and other organizational decisions	Organizational Support
Market	25	Start	Expand current Town Hall Meetings to be more often and include updates from more senior managers throughout the organization.	Organizational Support
Market	25	Start	Increase frequency of individual meetings with supervisors.	Organizational Support
Millbrae	26	Start	Determine needed resources for workforce reliability efforts and make a commitment to fund it.	Organizational Support
Millbrae	26	Start	Survey different groups to assess what type of resources are needed for each division.	Organizational Support
Millbrae	26	Start	Assess resources that are currently available.	Organizational Support
Millbrae	26	Start	Senior management needs to communicate their vision and mission to all employees.	Organizational Support
Millbrae	26	Start	Set up feedback system to see whether efforts are effective and communicate results to senior management.	Organizational Support
Millbrae	26	Start	Ensure support needed for workforce reliability efforts such as a good database of information and documentation system	Organizational Support
Millbrae	26	Start	Senior management needs to encourage training with a clearly defined budget	Organizational Support
Millbrae	26	Start	Provide equal opportunities for training for all job classes.	Organizational Support
Millbrae	26	Start	Set up an independent group to review and monitor training requests for a more fair system.	Organizational Support
Millbrae	26	Start	Develop metric to determine whether training is effective	Organizational Support
Millbrae	26	Start	Identify training that will help employees do their jobs efficiently.	Organizational Support

**Table F-2: Table of Feedback Provided to the Question “What Would Success Look Like?”
(See next page)**

Location	Rec. #	Type	Item	Category
SEP	2	Success	More qualified, pre-trained, knowledgeable candidates will be available to apply for positions and they will be more prepared to learn and enter the apprenticeship programs	Qualified Candidates
SEP	2	Success	Entry level staff will have a starting knowledge of Instrumentation and Controls	Qualified Candidates
SEP	2	Success	Industry-specific classes will be offered at the community colleges	Qualified Candidates
SEP	2	Success	Targeted and qualified trades will apply for PUC jobs	Qualified Candidates
Market	2	Success	Apprenticeship programs are in place	Qualified Candidates
Market	2	Success	PUC sees more and higher quality applicants	Qualified Candidates
Market	2	Success	There is a greater awareness of the PUC among faculty and students	Qualified Candidates
Market	2	Success	A greater % of local applicants are hired into the PUC or other local agencies because they are more skilled in the future	Qualified Candidates
Market	2	Success	More SFPUC staff become mentors to students	Qualified Candidates
Millbrae	2	Success	High school curriculum includes introductions to the water and wastewater industry.	Qualified Candidates
Millbrae	2	Success	PUC provides the teachers/mentors and training materials on the subject of water/wastewater for use at local high schools	Qualified Candidates
Millbrae	2	Success	More individuals apply for positions at the PUC and they are more qualified than in the past	Qualified Candidates
Millbrae	2	Success	Invitations are received from local high schools requesting PUC staff visit to address students on Career Days	Qualified Candidates
Millbrae	2	Success	More budget is allocated by senior management for outreach to local high schools, community colleges and universities	Qualified Candidates
Millbrae	3	Success	More qualified candidates apply for positions	Qualified Candidates
Millbrae	3	Success	PUC becomes more active with the unions and union training programs better equip employees to do PUC jobs	Qualified Candidates
SEP	4	Success	Training is something staff looks forward to. It is not something they <u>have</u> to do, it is something they <u>want</u> to do.	Prepared Staff
SEP	4	Success	Treatment process-specific and maintenance topic-specific classes are offered and taught by SMEs.	Prepared Staff
Market	4	Success	Improved safety record	Prepared Staff
Market	4	Success	Staff demonstrate higher technical competence	Prepared Staff
Market	4	Success	Better consistency in job performance/knowledge across each job family	Prepared Staff
Market	4	Success	There is a cultural shift in the PUC from Knowledge-hoarding to Knowledge-sharing	Prepared Staff
Market	4	Success	Staff reach their professional goals (with support from training programs)	Prepared Staff
Market	4	Success	There is a higher level of participation in training, improved job satisfaction and better application of learned skills	Prepared Staff
Millbrae	4	Success	Succession planning is smooth; replacements have the skills needed to step into vacancies	Prepared Staff
Millbrae	4	Success	Staff can back each other up	Prepared Staff
Millbrae	4	Success	Training is consistent in quality and frequency	Prepared Staff
Millbrae	4	Success	PUC culture changes to one in which information is shared	Prepared Staff
Millbrae	4	Success	Individual employee accountability improves	Prepared Staff
SEP	5	Success	SOPs are up to date	Prepared Staff
SEP	5	Success	Standards are developed and implemented	Prepared Staff
SEP	5	Success	Information is consolidated and stored in 1 spot that all know about and can access	Prepared Staff
SEP	5	Success	Senior management supports the capture of SME knowledge	Prepared Staff
SEP	5	Success	We develop more SMEs; we limit the number of critical areas in which just one person knows how to operate or maintain the area	Prepared Staff
Market	5	Success	People/the Organization uses the knowledge capture process routinely	Prepared Staff
Market	5	Success	There is a reduction in errors, fewer injuries, and increased creativity and innovation	Prepared Staff
Market	5	Success	Documentation is comprehensive	Prepared Staff
Market	5	Success	Information collected is valid	Prepared Staff
SEP	6	Success	A flexible system continually self improving and evolving.	Prepared Staff
SEP	6	Success	Identify weak and strong points	Prepared Staff
SEP	6	Success	Incentives - promotion and acknowledgement	Prepared Staff
SEP	6	Success	Integrated with sustainability and controllers report.	Prepared Staff
SEP	6	Success	Permit violations are reduced	Prepared Staff
SEP	6	Success	Satisfied workforce - happy people, less sick leave, ownership of work	Prepared Staff
SEP	6	Success	Clear expectations	Prepared Staff

SEP	6	Success	Integration with the performance appraisal process	Prepared Staff
Market	6	Success	Some form of skills test or checklist developed	Prepared Staff
Market	6	Success	This should not be part of the performance review in the near term (3-5yrs) until the process is up and running	Prepared Staff
Market	6	Success	Well established training program that integrates with competency process	Prepared Staff
Market	6	Success	Clearly understood missions and goals and what it takes to get there - well defined gap analysis	Prepared Staff
SEP	8	Success	Minimal start up issues, less change orders, on time delivery	Prepared Staff
SEP	8	Success	Ops and maintenance know everything about it!	Prepared Staff
SEP	8	Success	Documentation is updated and accurate	Prepared Staff
SEP	8	Success	saves money, time and improves safety	Prepared Staff
SEP	8	Success	Helps turnover/retention	Prepared Staff
SEP	8	Success	Employees are valued	Prepared Staff
SEP	9	Success	Less violations, issues and problems - happy staff	Prepared Staff
SEP	9	Success	There should be a smooth transition is staff are absent	Prepared Staff
Market	9	Success	The ability to supplement the workforce	Prepared Staff
Market	9	Success	Increased staff satisfaction	Prepared Staff
Market	9	Success	Technical staff able to work across different departments	Prepared Staff
Market	9	Success	Increased knowledge and ownership in different roles	Prepared Staff
Market	9	Success	Seamless transition of staff when absent - several are able to step in	Prepared Staff
Market	9	Success	Job satisfaction	Prepared Staff
Millbrae	11	Success	Program established and continued support.	Prepared Staff
Millbrae	11	Success	Increased number of candidates with better qualifications.	Prepared Staff
Millbrae	11	Success	Increased employee knowledge.	Prepared Staff
Millbrae	11	Success	Increased complementary skills (soft skills)	Prepared Staff
Millbrae	11	Success	Get to know peers at other agencies better.	Prepared Staff
Millbrae	11	Success	Minimized performance of redundant studies.	Prepared Staff
Market	12	Success	Mentees become future mentors.	Prepared Staff
Market	12	Success	There is increased job satisfaction, productivity and morale.	Prepared Staff
Market	12	Success	There is increased organizational understanding of what makes a good supervisor	Prepared Staff
Market	12	Success	Employees are being promoted.	Prepared Staff
Market	12	Success	A long term evaluation of the participants with performance measures is conducted.	Prepared Staff
Market	12	Success	The program is tied to specific goals as appropriate to participants.,	Prepared Staff
Market	12	Success	There will be high participation and satisfaction as well as a specific measure of the results.	Prepared Staff
Market	13	Success	Funding is in place and staff resources are supported.	Prepared Staff
Market	13	Success	Employees participate and graduate.	Prepared Staff
Market	13	Success	There exists a partnership agreement between agencies.	Prepared Staff
Market	13	Success	There is a higher skill level in graduates.	Prepared Staff
Market	13	Success	Employees are promoted from within.	Prepared Staff
Market	13	Success	There is long term tracking of graduates.	Prepared Staff
Market	13	Success	A continuous learning process is set up.	Prepared Staff
Market	13	Success	Succession planning will be in place.	Prepared Staff
Market	13	Success	There will be a streamlined process with providers.	Prepared Staff
Market	13	Success	There will be positive PR about SFPUCL leaders.	Prepared Staff
Market	13	Success	There will be consistent, high quality and knowledgeable staff and leadership.	Prepared Staff
Market	13	Success	Supervisors will be good at supervision and leadership.	Prepared Staff
Millbrae	15	Success	Training for all staff is up to date	Prepared Staff
Millbrae	15	Success	The ability to quickly identify training needs and deficiencies (either by staff or management)	Prepared Staff
Millbrae	15	Success	Training needs are being met so the number of classes should be reducing	Prepared Staff
Millbrae	15	Success	An accessible and efficient system	Prepared Staff

Millbrae	15	Success	Staff should be able to check LMS and all classes are populated so that there is clear visibility on what's coming up.	Prepared Staff
Millbrae	15	Success	LMS should include the basic list of mandatory training	Prepared Staff
Millbrae	15	Success	A universal standard for safety, regulatory and craft specific training to improve the quality of staff	Prepared Staff
Millbrae	16	Success	We should be able to give a document to a member of staff and they can satisfactorily perform the task	Prepared Staff
Millbrae	16	Success	Integration with an internal training program	Prepared Staff
Millbrae	16	Success	Materials are readily available with an electronic search function	Prepared Staff
Millbrae	16	Success	Personal tacit knowledge has been translated into a format that can be shared	Prepared Staff
Market	16	Success	There will be consistent and repeatable processes within job classes.	Prepared Staff
Market	16	Success	There will be a decrease in health and safety issues and violations.	Prepared Staff
Market	16	Success	There will be an increase in productivity, job satisfaction and morale.	Prepared Staff
Market	16	Success	Knowledge will be captured in the succession process.	Prepared Staff
Market	16	Success	There will be written and documented Standard Operating Procedures accessible from the field and in electronic format.	Prepared Staff
Market	16	Success	Standard Operating Procedures will be available even in times of disaster.	Prepared Staff
Market	16	Success	There will be a series of pass-off meetings to responsible parties and these responsible parties will be identified.	Prepared Staff
Market	16	Success	There will be a standard format for documentation in place.	Prepared Staff
Market	16	Success	We will know the actual retirees for each Division.	Prepared Staff
Market	16	Success	There will be a feedback system on value of obtaining information.	Prepared Staff
SEP	16	Success	Well-documented scripts of knowledge.	Prepared Staff
SEP	16	Success	Good training program.	Prepared Staff
SEP	16	Success	More cross training providing flexibility in stationing.	Prepared Staff
SEP	16	Success	Smooth transitions when staff retire - no voids felt in process.	Prepared Staff
SEP	16	Success	No need to rehire retirees as consultants.	Prepared Staff
SEP	16	Success	Management has bought-in and enforced documentation procedure changes.	Prepared Staff
Millbrae	17	Success	A well developed system in place to effectively and efficiently location the documentation required	Prepared Staff
Millbrae	17	Success	A reliable asset database (for SOPs, PMs and associated documentation etc)	Prepared Staff
Millbrae	17	Success	Document system integrated with other systems to support inventory control and purchasing	Prepared Staff
Millbrae	17	Success	New staff can find documentation efficiently	Prepared Staff
Millbrae	17	Success	Increased efficiency in maintenance and operations	Prepared Staff
Millbrae	17	Success	Supports training and development of staff	Prepared Staff
SEP	17	Success	Everyone has easy access to complete, well-organized information	Prepared Staff
SEP	17	Success	Reduced frustration, higher employee efficiency	Prepared Staff
SEP	17	Success	Increases employee happiness.	Prepared Staff
SEP	17	Success	Don't have to ask supervisors where information is.	Prepared Staff
SEP	17	Success	All documentation cross-referenced by equipment number	Prepared Staff
SEP	17	Success	NO silos for documentation.	Prepared Staff
SEP	17	Success	Organization has a separate data manager.	Prepared Staff
SEP	17	Success	On-line access to all documentation.	Prepared Staff
SEP	17	Success	Organized document management system where obsolete data is deleted.	Prepared Staff
Millbrae	18	Success	SFPUC staff are all trained in the same way	Prepared Staff
Millbrae	18	Success	SFPUC staff are all knowledgeable about how to perform their job duties	Prepared Staff
Millbrae	18	Success	SFPUC staff are all knowledgeable about where to find technical training materials; materials are possibly available through mobile or desktop applications	Prepared Staff
SEP	18	Success	All Standard Operating Procedures for all jobs are in one place in a perfect library with a Dewey decimal system for easy location.	Prepared Staff
SEP	18	Success	All employees will understand why we are here, our vision and mission.	Prepared Staff
SEP	18	Success	One click and you are in the library.	Prepared Staff
SEP	18	Success	There is one location for the accurate, easy-to-access information.	Prepared Staff
SEP	18	Success	There will be more efficient plant operation with upsets minimized.	Prepared Staff

SEP	18	Success	Employees will be happier.	Prepared Staff
Millbrae	19	Success	High SFPUC staff usage	Prepared Staff
Millbrae	19	Success	SFPUC staff suggesting improvements to the system, indicating buy-in	Prepared Staff
Millbrae	19	Success	One software program where all required information can be found	Prepared Staff
Millbrae	19	Success	The ability for staff to research an issue, recognize limitations, and develop recommendations for management	Prepared Staff
SEP	20	Success	Every employee has an iPad in his or her hands.	Optimizing Staff Utilization
SEP	20	Success	A feedback system exists to see where we are going and to make sure information is being used	Optimizing Staff Utilization
SEP	20	Success	There will be less frustration to get needed information.	Optimizing Staff Utilization
SEP	20	Success	Information will be found through one portal, one central location (e.g., codes of safe practices).	Optimizing Staff Utilization
SEP	20	Success	There will be an effective search engine.	Optimizing Staff Utilization
SEP	20	Success	There will be a system of version control.	Optimizing Staff Utilization
Market	20	Success	Needed information is readily accessible to get the job done more efficiently and make prompt effective decisions.	Optimizing Staff Utilization
Market	20	Success	Employee morale would be increased.	Optimizing Staff Utilization
Market	20	Success	Employee skill set would be increased.	Optimizing Staff Utilization
Market	20	Success	We would save paper.	Optimizing Staff Utilization
Market	20	Success	There would be a faster more streamlined work flow process.	Optimizing Staff Utilization
Market	20	Success	There is a memo from management for uniformity of information technology systems.	Optimizing Staff Utilization
Market	20	Success	There is a system of feedback to log and track usage.	Optimizing Staff Utilization
Market	20	Success	Employees accessed the calendar of available end-users for cross-fertilization of information.	Optimizing Staff Utilization
Market	20	Success	There will be widespread adaptation of technology once employees know how to use it.	Optimizing Staff Utilization
Market	20	Success	Data will be useable, accurate and the same across Divisions.	Optimizing Staff Utilization
Market	20	Success	There will be increased team work and sharing of information.	Optimizing Staff Utilization
SEP	22	Success	Parts and stock items that work in multiple locations will be at hand.	Optimizing Staff Utilization
SEP	22	Success	Everyone will know how to do everything. It will be easy to rotate employees due to staffing flexibility	Optimizing Staff Utilization
SEP	22	Success	There will be a more effective emergency response.	Optimizing Staff Utilization
SEP	22	Success	There will be an easier purchasing process.	Optimizing Staff Utilization
SEP	22	Success	Communication will be improved.	Optimizing Staff Utilization
SEP	22	Success	There will be better efficiency and reduced training requirements.	Optimizing Staff Utilization
SEP	22	Success	Maintenance employees are certified in Operations.	Optimizing Staff Utilization
SEP	22	Success	Sustainability Report and Controllers Report will show improvement on meeting standards.	Optimizing Staff Utilization
SEP	22	Success	There will be no violations on NPDES permit.	Optimizing Staff Utilization
SEP	22	Success	There will be sign-off by Operations and Maintenance on the RFP's.	Optimizing Staff Utilization
Millbrae	22	Success	More uniformity across regional facilities.	Optimizing Staff Utilization
Millbrae	22	Success	Cost savings	Optimizing Staff Utilization
Millbrae	22	Success	Decreased training costs.	Optimizing Staff Utilization
Millbrae	22	Success	Increased ease of purchasing.	Optimizing Staff Utilization
Millbrae	22	Success	Standardized replacement parts - less storage and training required.	Optimizing Staff Utilization
Millbrae	22	Success	Increased organizational reliability.	Optimizing Staff Utilization
Millbrae	22	Success	Increased efficiency due to increased familiarity with equipment.	Optimizing Staff Utilization
Market	24	Success	Everybody recognizes areas on which they can improve and can work to develop these areas	Organizational Support
Market	24	Success	Every employee has personal objectives and a workplan for achieving goals.	Organizational Support
Market	24	Success	Measureable metrics have been developed to track success of program.	Organizational Support
Market	24	Success	Clear, defined system for providing feedback is in place.	Organizational Support
Market	24	Success	Success list is available.	Organizational Support
Market	24	Success	Increased productivity/morale/happiness.	Organizational Support
Millbrae	25	Success	Morale will be high.	Organizational Support
Millbrae	25	Success	All concerns and issues will be addressed.	Organizational Support
Millbrae	25	Success	Clear, consistent written directives will be set and enforced.	Organizational Support

Millbrae	25	Success	The employee satisfaction survey will reflect positive results.	Organizational Support
Millbrae	25	Success	Productivity will be high and there will be less anxiety.	Organizational Support
Millbrae	25	Success	Scheduled meetings are occurring.	Organizational Support
Millbrae	25	Success	Everyone will know where we are going, how we will get there and how we will know that we have arrived	Organizational Support
Millbrae	25	Success	Supervisors as coaches will have a uniform standard of listening to employees for which they are held accountable	Organizational Support
Millbrae	25	Success	Employees will know expectations; there will be no surprises.	Organizational Support
Millbrae	25	Success	A system of feedback will be in place to address issues and questions for continual improvement.	Organizational Support
SEP	25	Success	There will be an Open Door Policy.	Organizational Support
SEP	25	Success	There will be more advanced notice of changes such as staffing and crew.	Organizational Support
SEP	25	Success	There will be an informed and educated work group who are knowledgeable and empowered to take ownership of their jobs.	Organizational Support
SEP	25	Success	Information will travel up and down the organization.	Organizational Support
SEP	25	Success	There will be regular meetings between Maintenance and top management.	Organizational Support
Market	25	Success	Everybody is well informed.	Organizational Support
Market	25	Success	Increased morale; increased feeling of belonging and inclusion.	Organizational Support
Market	25	Success	Positive perception of management.	Organizational Support
Market	25	Success	A clear process is in place for increased communication.	Organizational Support
Market	25	Success	A calendar of Town Hall events is available.	Organizational Support
Market	25	Success	Management is aware of employees expectations, and vice versa.	Organizational Support
Market	25	Success	Long term organizational plan is available - priorities, funding, etc. from an organizational perspective	Organizational Support
Market	25	Success	Monthly newsletters from management to staff are distributed.	Organizational Support
Millbrae	26	Success	Employees are getting trained to do their jobs.	Organizational Support
Millbrae	26	Success	There is an easier transition as employees move from position to position and/or location to location.	Organizational Support
Millbrae	26	Success	Training materials and management of information will be available and therefore will be efficient and less frustrating.	Organizational Support
Millbrae	26	Success	There will be an understanding of resources that are needed and funding sources will be identified and provided.	Organizational Support
Millbrae	26	Success	The employee satisfaction survey will reflect positive results.	Organizational Support
Millbrae	26	Success	There will be less work-related injuries and illnesses as well as disability claims.	Organizational Support

APPENDIX G: WORKFORCE RELIABILITY WORKGROUPS

Program Category	SFPUC Workgroup Participants
Qualified Candidates	Vanessa Conrad (Wastewater/Collections) Steven Currie (S.F. Office of Economic and Workforce Development) Catherine Curtis (Wastewater/PRCD) Cheryl Davis (Water) Suzanne Gautier (Communications) David Hashemi (Human Resources Services) Todd Kyger (Program Controls and Support Bureau) Walter Melville (Power/Engineering) Maria Ryan (S.F. Department of Human Resources)
Organizational Support	Cheryl Davis (Water) Marla Jurosek (Wastewater/PRCD) Paula Kehoe (Water/Water Supply Planning) Greg Mayer (SSIP) Maria Ryan (S.F. Department of Human Resources) Camron Samii (Power/Administration and Budget)
Prepared Staff – Training <i>(competency analysis, documentation, technical training, staff development)</i>	Linda Cole (Human Resources Services) Catherine Curtis (Wastewater/PRCD) Cheryl Davis (Water) Tracy Deleon (Information Technology Services) Brenda Donald (Wastewater/CSD) Peter Gallota (City Hall Fellow/Wastewater-CSD) Johnson Ho (Wastewater) Carolyn Jones (Health and Safety) Woon Lee (SSIP Documentation/Records) Carl Luckenbill (Human Resources Services) Greg Mayer (SSIP) Jim Salerno (Water/Natural Resources) MA Stevenson (Health and Safety) Tina Tang (Health and Safety) Chad Thigpen (Human Resources Services)

<p>Prepared Staff – Knowledge Management</p>	<p>Joe Cowan (WSIP/Archive Management) Catherine Curtis (Wastewater/PRCD) Cheryl Davis (Water) Leslie Fisher (Business Services/Records Management) Kenneth Lee (Water/Water Quality) Woon Lee (SSIP Documentation/Records) Linda Leong (Wastewater/Engineering) Carl Luckenbill (Human Resources Services) Ken Olivencia (Wastewater) Jim Salerno (Water/Natural Resources) George White (Infrastructure/Capital Planning)</p>
<p>Optimizing Staff Utilization</p>	<p>Sue Black (Power/Operations) Paul Bonitz (Wastewater/Maintenance) Catherine Curtis (Wastewater/Planning) Fonda Davidis (Information Technology Services) Cheryl Davis (Water) *Edward Forner (Water/Water Supply and Treatment) *Lawrence Hom (ITS) *Connie Mar (ITS) John Powell (Wastewater/Maintenance) *Oli Sadler (ITS) *Ken Salmon (ITS) *Yash Sharman (ITS) Dan Truong (ITS/I&C) *Raymond Yip (ITS)</p> <p>* Attended special meeting of workgroup to discuss ITS support for proposals</p>

**APPENDIX H: PROPOSED FUTURE TASKS IN PHASE 2
(JANUARY – JUNE, 2012) AND PHASE 3 (FY 2012-2013)**

**Table G-1: Table of Tasks
(See next page)**

CONSULTING SUPPORT NEEDED TO IMPLEMENT WORKFORCE RELIABILITY

I. Qualified Candidates

1/12 – 6/12	FY 12/13	Task
X	X	Documentation of high school courses and educational experiences needed to support success in candidate development programs for mission-critical trades classifications (for distribution at career fairs, high schools, career counseling centers, community events, etc.)
X	X	Development of career roadmaps (from high school through technical training through on-the-job training opportunities) for mission critical job categories (machinists, electronic maintenance technicians, and electrical line workers)
	X	Administrative support for contest to design on-line game for BAYWORK website, to allow high school students to check whether they are getting the skills they need to move into skilled trades positions
X	X	Posters, videos, and brochures related to mission-critical job categories
X	X	Assistance in preparing documents to justify funding support for apprenticeship programs for electrical line workers, machinists, and electronic maintenance technicians

II. Organizational Support

1/12 – 6/12	FY 12/13	Task
X		Creation of video reflecting SFPUC corporate values
	X	Consultation on corporate culture by professionals with work experience with Human Synergistics model

III. Optimizing Staff Utilization

1/12 – 6/12	FY 12/13	Task
X	X	Professional services support for pilot project in Power Enterprise on standardization of equipment
X	X	Tracking of progress on IT issues (e-time, MAXIMO, and on-line response time) raised by workgroup

IV. Prepared Staff

1/12 – 6/12	FY 12/13	Task
X		Knowledge Management Strategy Prioritization Workshops (one for each Enterprise) to determine operational priorities for documentation, technical training, and knowledge management
X		Survey of software used by mission-critical classifications, their level of access to the computerized information they need, and access to computer-equipped training labs
X	X	Documentation of competency analysis completed using resources currently available
X	X	Documentation of staff development programs (cross-training, staff rotations, programs for professional development in relation to business communication, supervision, management and corporate cultures and a formal mentoring program) developed using resources currently available
X		Creation of survey instrument to be used for on-site visits to organizations with strong documentation, staff development, technical training, and knowledge management problems

1/12 – 6/12	FY 12/13	Task
X		Develop standards for nomenclature relating to assets (e.g. facilities and equipment) to be used in documentation
X	X	Technical support for information-gathering through on-site visits and documentation of results on processes for prioritization; training materials; documentation templates; in-house and professional support used to translate knowledge of technical subject matter experts into documentation and training materials; number and type of in-house positions; cost of professional services support; use of external training resources (e.g., community colleges, universities, professional associations, and private vendors). Documentation of findings.
	X	Knowledge Management Guidance Document (guidelines for documentation, sample templates, guidance on use of SFPUC knowledge management system such as mIToolbox and Sharepoint)
	X	Support in defining in-house resources to support documentation staff development technical training, and knowledge management on an ongoing basis

V. Overall

1/12 – 6/12	FY 12/13	Task
X	X	Administrative support in scheduling meetings, recording notes, and action items, documenting findings, tracking progress on proposals, and preparing reports in relation to all proposals generated by the Workforce Reliability planning process
X	X	Perform additional research into workforce reliability expenditures of organizations with best-in-class practices.

