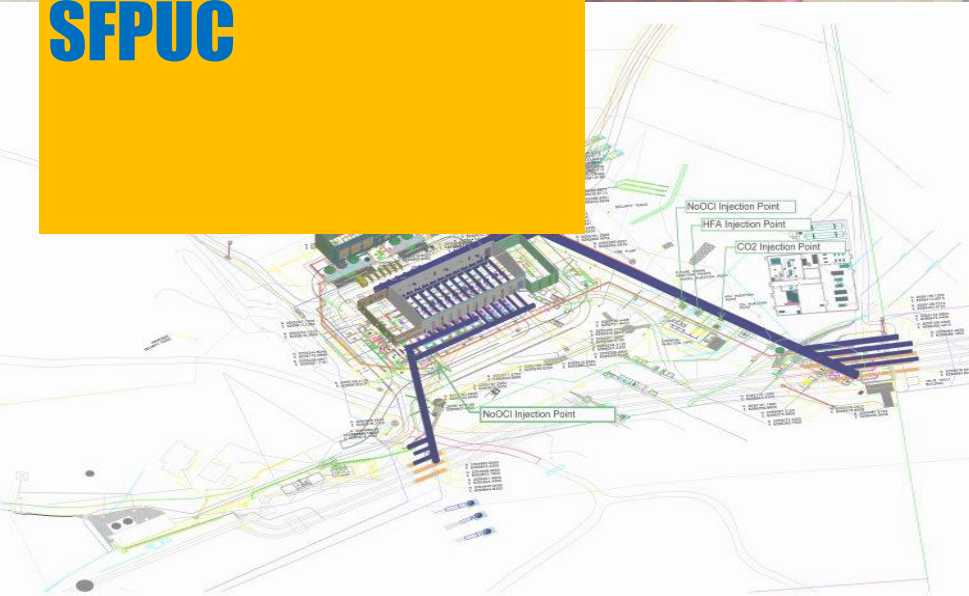




WORKFORCE RELIABILITY: SFPUC



5-Year Strategic Planning Process

- **Needs Assessment**
 - Mission-critical job categories
 - At-risk organizational processes
- **Learning from Others Workshops**
- **Prioritization Workshops**
- **Workgroups Developed Proposals**
 - Qualified Candidates
 - Prepared Staff
 - Optimizing Staff Utilization
 - Organizational Support
- **5-Year Strategic Plan**



Needs Assessment Results

Mission-Critical Job Categories at SFPUC

Classification
Mechanic/Machinist
Electronic Maintenance Technician/Instrument Technician
Engineer
Electrician
Wastewater Treatment Operator
Water Treatment Operator
Water Distribution Operator

Organizational Processes Ranked by Risk to Operational Reliability

Risk Factor
Organizational Recruitment Process
Documentation
Availability of Qualified Candidates
Technical Training
Competency Analysis
Knowledge Management
Staff Development
Innovations to Optimize Staff Utilization

Workforce Reliability Proposals

- The four workgroups developed 14 proposals for implementation at SFPUC:

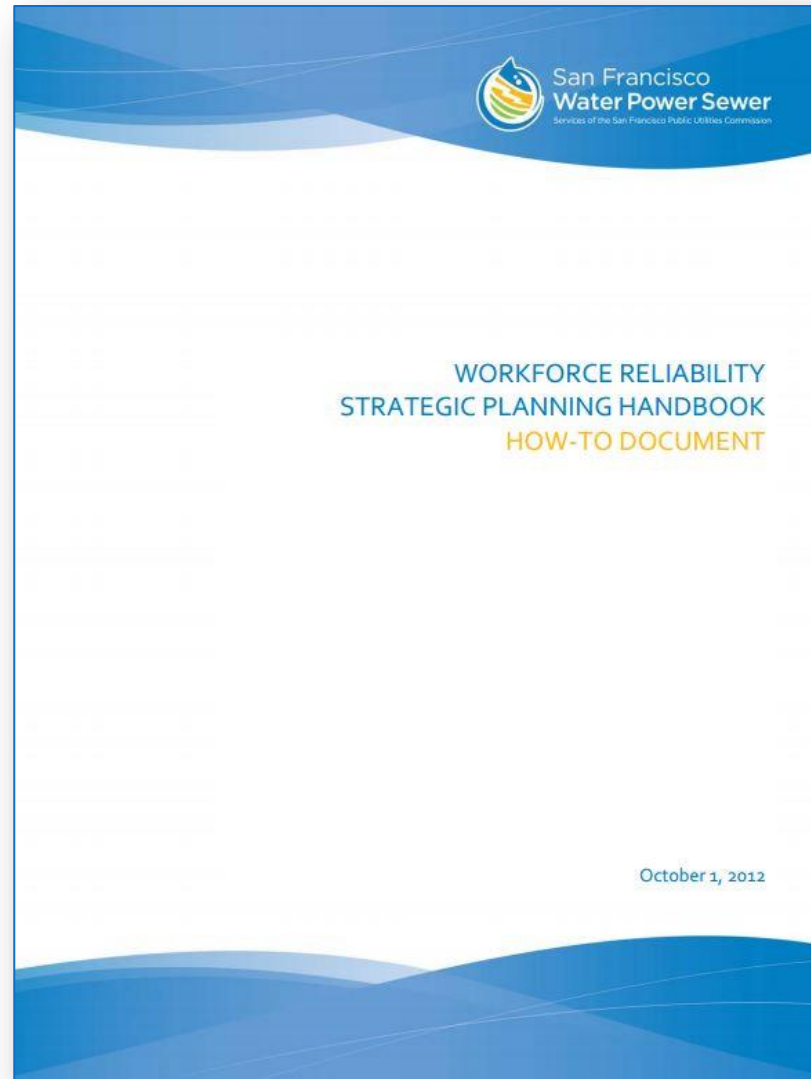
Qualified Candidates
Competency-Based Candidate Development
Community Outreach
Collaboration with Stakeholders
Building Career Paths

Organizational Support
Strengthen Corporate Culture

Optimizing Staff Utilization
Standardization of Equipment
Upgrade MAXIMO Interfaces with Other Programs
Improve Network Performance Issues
Use Mobile Devices to Improve Efficiency
Standardization of Nomenclature

Prepared Staff
Assignment-Specific Competency Analysis
Staff Development
Strategy for Documentation/Knowledge Management
Technical Training

Strategic Planning Handbook



- http://baywork.org/wp-content/uploads/2012/10/HOWTO-SFPUC-Workforce_Reliability_Strategic_Planning_Handbook2.pdf



5-YEAR STRATEGIC PLAN FOR WORKFORCE RELIABILITY IN OPERATIONS



3-Year Progress Report

March 2015

Organizational Support

PROPOSAL	Proposed Actions	FEBRUARY 2017
Strengthen Corporate Culture	• Issue statement from General Manager • Investigate the most effective way to communicate values and service performance at 525 Golden Gate • Professional services support from consultants with experience in implementing the Human Synergistics Model in water utilities.	• With the assistance of expert guidance, SFPUC has strengthened its corporate culture to more fully reflect its core values (equal opportunity, excellence, service, inclusiveness, respect, safety, stewardship, teamwork, and trust).

Prepared Staff

WS&TD Needs Assessment Form

Water Supply and Treatment Division

Facility: Tesla Treatment Facility

Project No: CUW38401

Project Manager: Tracy Cael

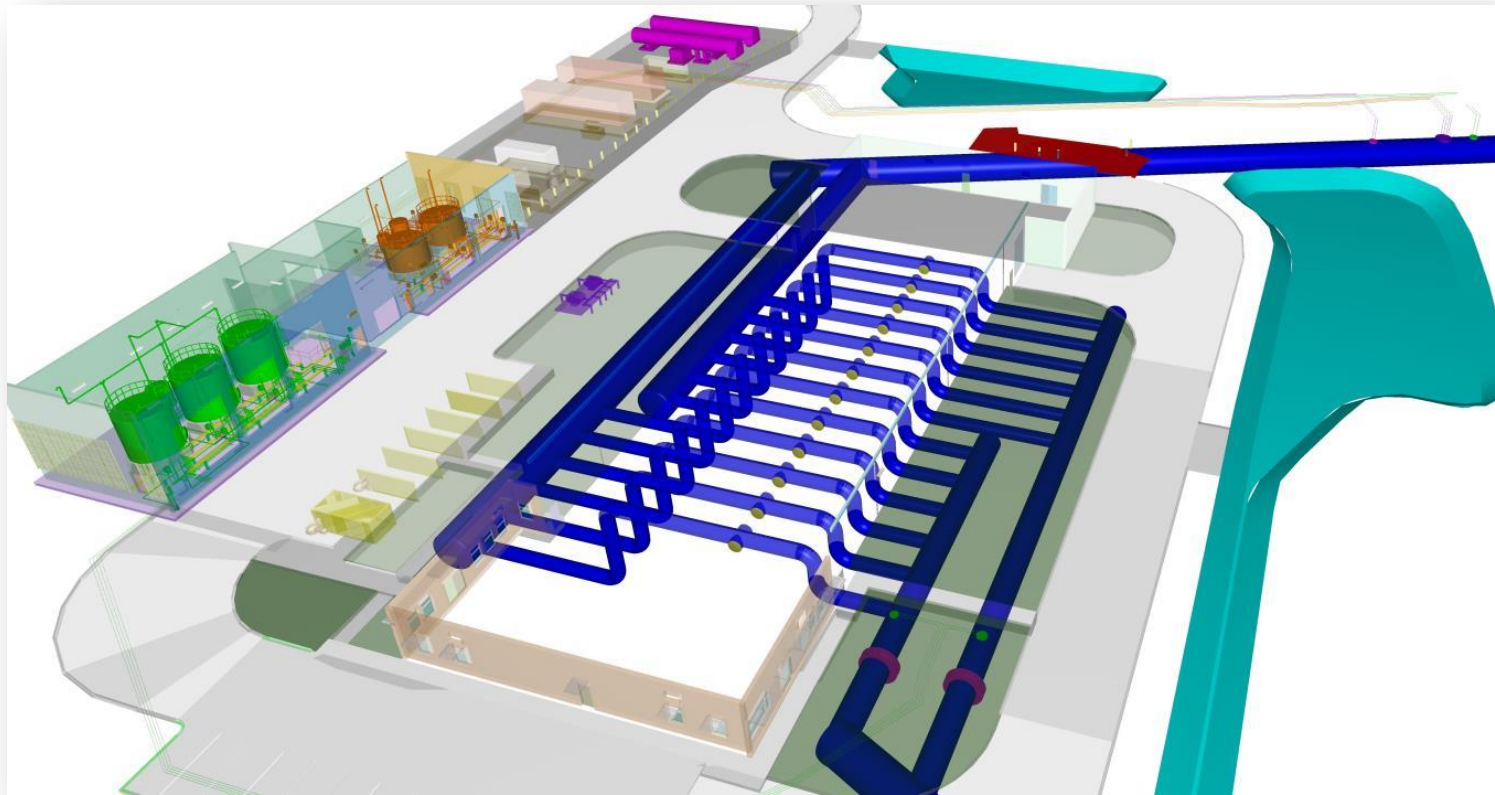
Project Costs:	\$	113,570,000
Construction Costs:	\$	85,000,000
Cost of Portion Requiring Training:	\$	85,000,000
0.2% of Portion Requiring Training*:	\$	170,000

Processes/Equipment Where Training/Documentation is Needed	Staff Requiring Training (check all that apply)		Adequate Documentation Developed?	Adequate Training Materials Developed?	Training Materials Available Online?	Risk (H/M/L)
Facility housing 12 UV reactors and ancillary equipment	X	WS&T Operations	YES	NO	NO	H
	X	WS&T Maintenance	YES	NO	NO	H
		Water Quality Division				
Chemical storage and feed facility for treatment chemicals	X	WS&T Operations	YES	NO	NO	H
	X	WS&T Maintenance	YES	NO	NO	H
		Water Quality Division				
Power systems (e.g., flywheel UPS, emergency generators, breaker room, UPS systems)	X	WS&T Operations	YES	NO	NO	H
	X	WS&T Maintenance	NO	NO	NO	H
		Water Quality Division				
Control systems (e.g., SCADA, instrumentation, security)	X	WS&T Operations	YES	NO	NO	H
	X	WS&T Maintenance	YES	NO	NO	H
		Water Quality Division				
Miscellaneous (e.g., fire system, grit removal, office, laboratory, septic system, domestic water system)	X	WS&T Operations	YES	NO	NO	H
	X	WS&T Maintenance	NO	NO	NO	H
		Water Quality Division				
Water transmission within facility (including butterfly valves)		WS&T Operations				
	X	WS&T Maintenance	NO	NO	NO	H
		Water Quality Division				

Example of Training Materials

Water Enterprise – Water Supply and Treatment Division

Tesla Treatment Facility 3D Graphics



WWE Needs Assessment Form

Wastewater Enterprise

Facility:	Southeast Water Pollution Control Facility (SEP)
-----------	--

Station Where Training/Documentation is Needed	Documentation Developed?	Documentation Up-To-Date?	Training Materials Developed?	Training Material Up-To-Date?	Training Materials and Documentation Available Online?	Risk (H/M/L)
012: Preliminary	Y	N	Y	N	N***	H
042: Primary	Y	Y*	Y	N	N***	H
260: Secondary	Y	N	N	N	N***	H
521: Disinfection	Y*	Y**	Y*	Y*	N***	H
Anaerobic Digestion	Y	N	N	N	N***	H
780: Thickening	Y	N	N	N	Y	H
840: Dewatering	Y	N	N	N	N***	H

* Updated but not reviewed

** Only competency standards documents updated

*** Computers are being added into field stations; documents are available online by all but not from each station

Competency Standards Guide Book



COMPETENCY STANDARDS GUIDE BOOK

CATHERINE CURTIS
GEORGE ENGEL
CARL LUCKENBILL

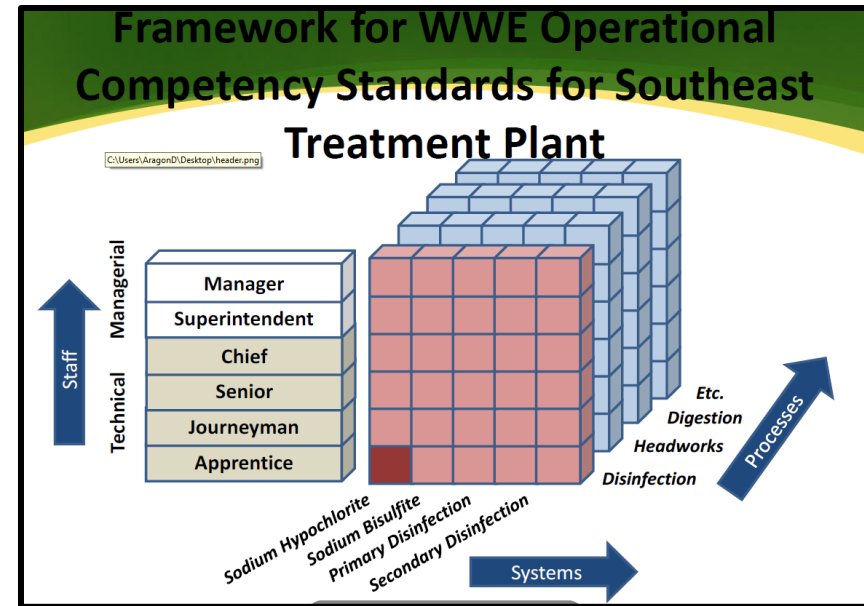
San Francisco Public
Utilities Commission



4/22/2013

What is a competency standard?

- A means to measure performance
- A framework for training
- A system to qualify operators to perform specific duties without direct supervision



WWE Competency Standards Program

Disinfection Training and Competency Testing Tracking

Watch 1									
	Position	Training	Test	Score	Review	Retest	Score	Retest	Score
	7252								
	7373		6/18-19/2013	100					
	7373								
	7373 (50/50)								
	7372	*	6/19/2013	100					
	7372		6/20/2013	100					
	7372	7/9/2013	8/14/2013	92	8/15/2013	8/16/2013	100		
	7372 (50/50)								
	7372	7/9/2013							
	7372		6/20/2013	79	7/25/2013	6/5/2014	100		
	7372		6/18/2013	72	5/23/2014				
	7372		7/24/2013	97		7/8/2014	100		
	7372								
Winnie Laidlaw	7375 grad								

- Operators must score 100%
- Retest until operators meet the requirement
- Results tracked in Learning Management System (LMS)
- Overseen by Superintendent of Operations

Wastewater Collections Training

- Catch Basin and Culvert Cleaning
- Mini-Camera Lateral Inspection
- IBAK Main Sewer Inspection
- Wastewater Sampler Set-Up
- Flow Monitoring Top Site Equipment Service
- Lower Lateral Sewer Cleaning
- Main Sewer Cleaning

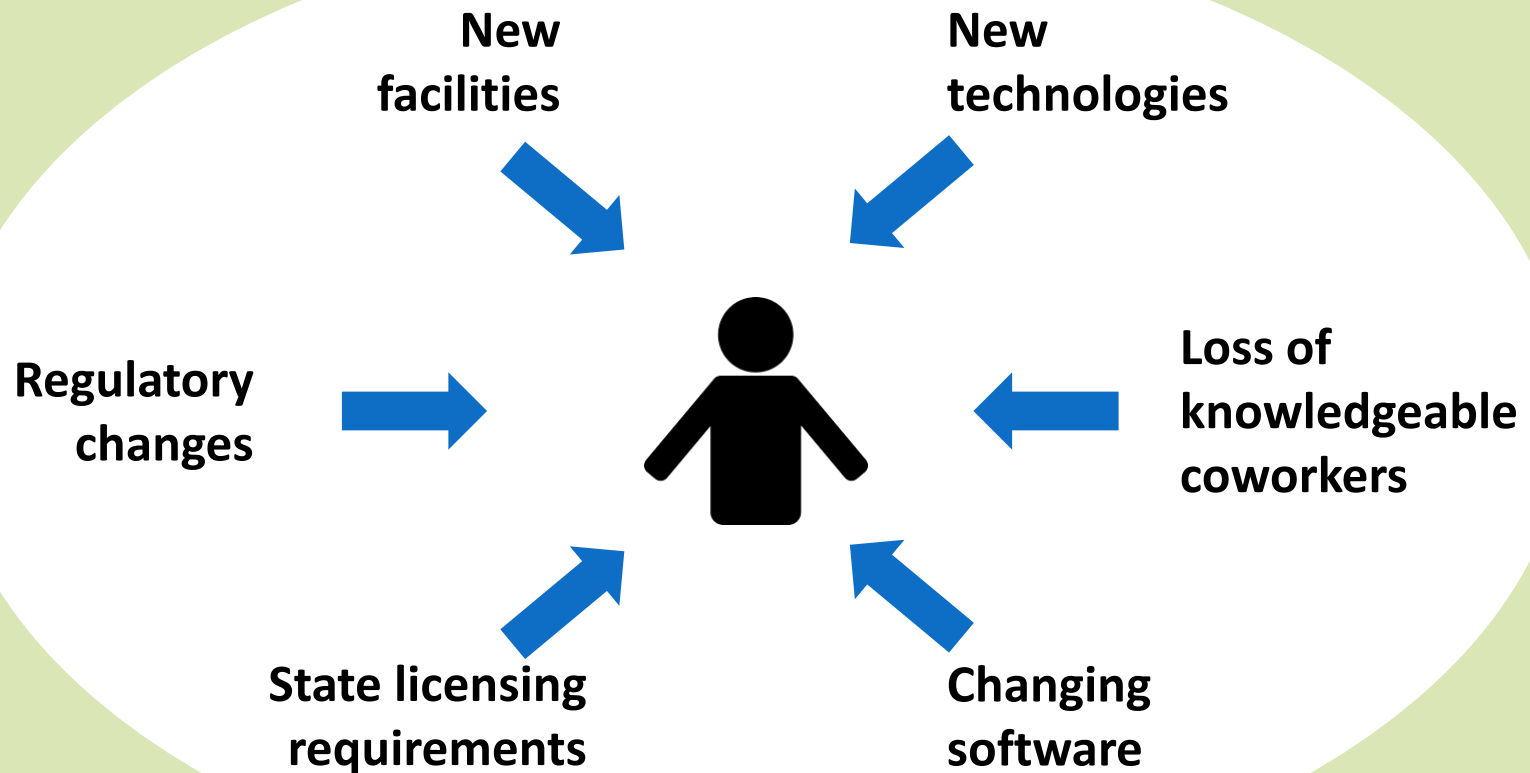
Leader Guide: Lateral Inspection

Sewer Operations Training

Time (Adjustable)	Learning Points	Reference- SOP/ Job Aid/ Ppt	Speaker/ Image
	Group Competition- Answers: 1) False- only lateral inspections 2) C 3) True 4) SOP	Have each team read a question.	MP- Slide 17  Group Competition- First Stop 1) What is a FACS? One of the purposes of this training is to standardize the use of all cities' inspections. 2) Which of the following is not a learning objective? a) Complete the pre-vehicle and pre-field equipment check. b) Assess the location, condition, and characteristics of the trap. c) Conduct quality assurance and control on the video. d) Determine the appropriate corrective action for the identified issues and complete the Resource Work Order. 3) What is a FACS? One of the ground rules is to think about how you can apply this training to your job. 4) Which of the following is the most comprehensive resource that refers to what we cover in this lateral inspection training? a) FACS/SLAP Manual (i) Standard Operating Procedure (ii) SOP (iii) Quick Guide (iv) Pocket Reference Guide
	Lateral Inspection Terms • Ball A device used to center the camera head in the pipe and keep it out of the flow line, also referred to as a "Skid"	Question: What is the difference between a flushing skid and a camera skid?	MP- Slide 18  Lateral Inspection Terms > Ball • A device used to center camera head in the pipe and keep it out of the flow line, also referred to as a "Skid" 

Input gained through 3 year progress report workshops

Prepared Staff



Skilled trades jobs are increasingly complex

Input gained through 3 year progress report workshops

Prepared Staff

Recognize that staff knowledge is a key asset

Capital Programs

	Metro Vancouver	SFPUC WSSIP Equivalent	SFPUC SSIP Equivalent
Capital Cost	\$500M	\$4,600M	\$6,900M
Professional Services Investment (0.2% of Capital Cost)	\$1M	\$9.2M	\$13.8M



Baywork: A Regional Partnership

- **Develop qualified candidates for mission-critical jobs**
- **Provide staff with the information needed to do quality work**
- **Modify work to optimize use of staff available**
- **Maximize cost-effectiveness of investments through collaboration**

Mission-Critical Job Categories



Electrician



Wastewater Treatment Operator



Electronic Maintenance Technician/Instrument Technician



Water Distribution Operator



Engineer



Water Treatment Operator



Machinist/Mechanic



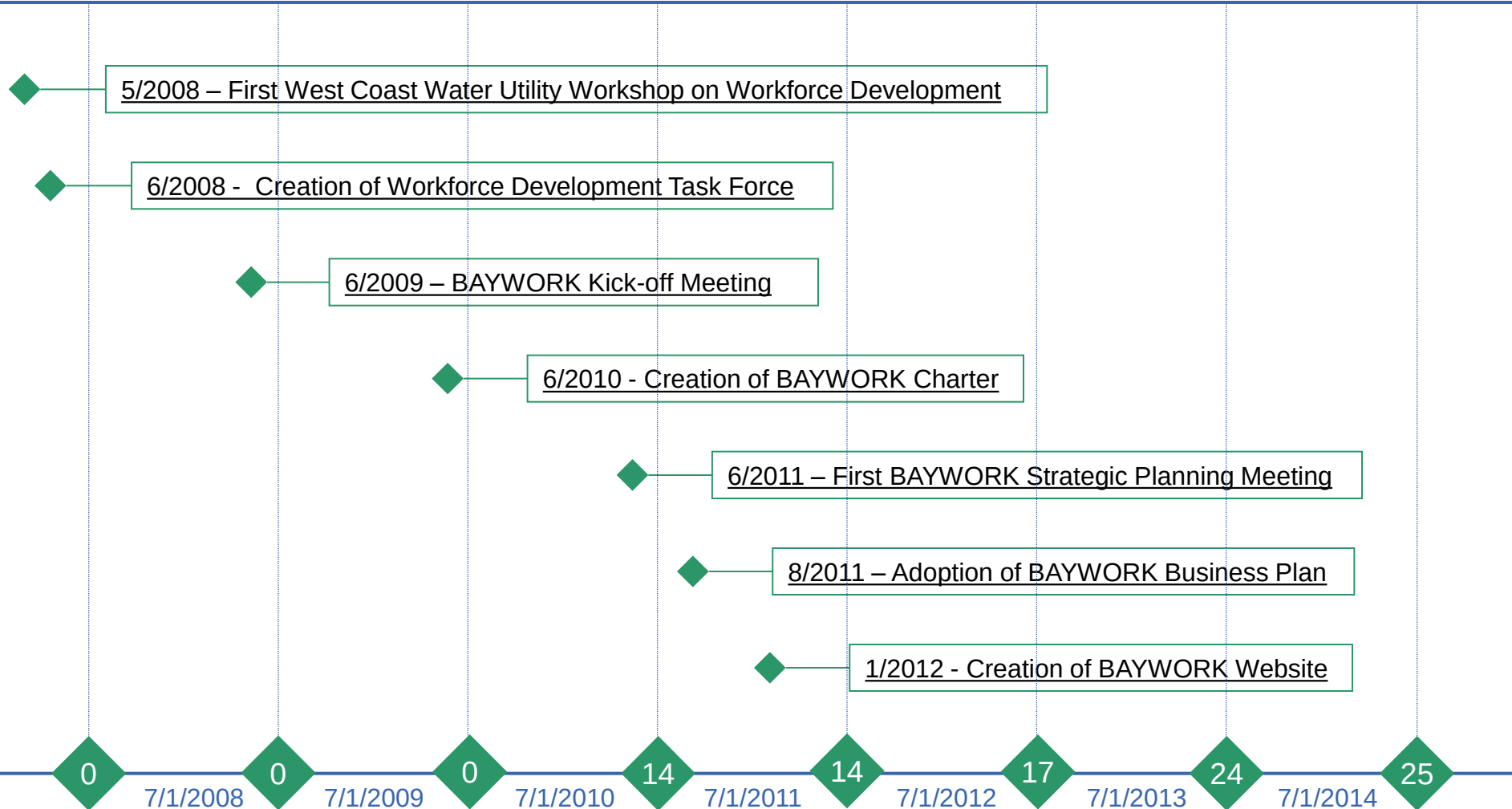
Wastewater Collections Operator

BAYWORK Timeline:

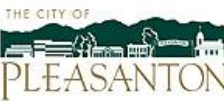
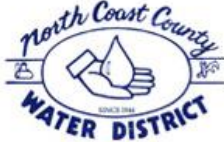


MILESTONES

FY 2008-2009 FY 2009-2010 FY 2010-2011 FY 2011-2012 FY 2012-2013 FY 2013-2014 FY 2014-2015



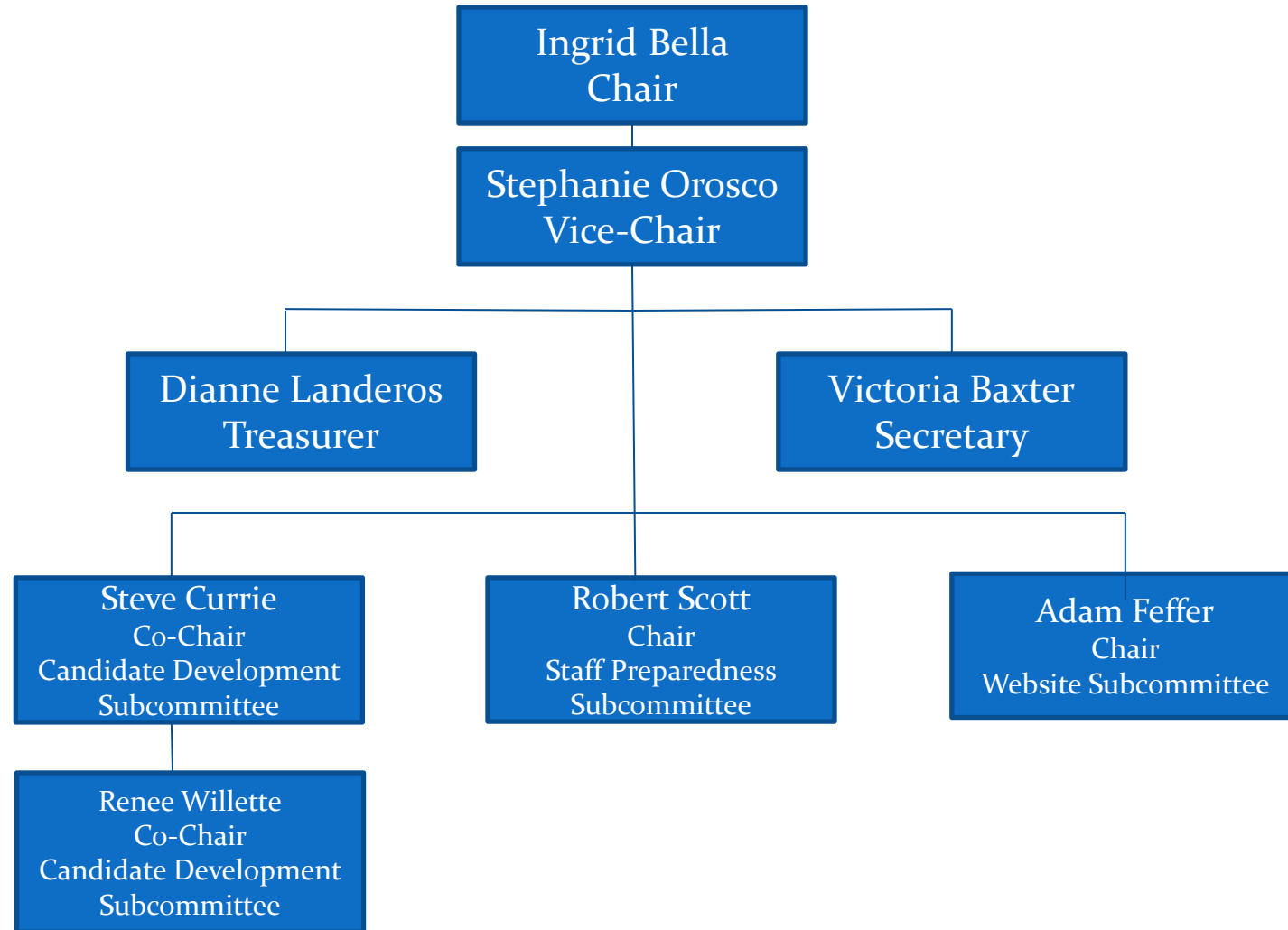
Number of Signatories



27 Signatory Agencies 12/1/2015



BAYWORK Organizational Structure

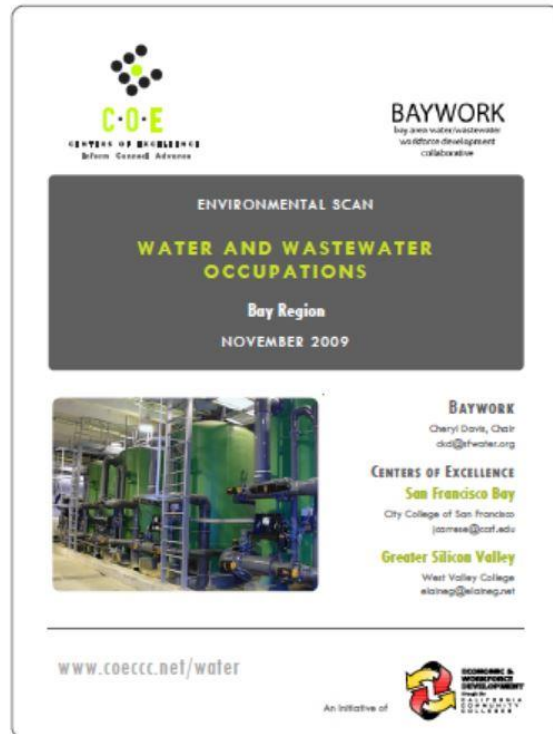


- **Research-Based Action**
- **Continuous Innovation**
- **Cost-Effectiveness through Collaboration**
- **By Utilities for Utilities**
- **Commitment to the Industry as a Whole**

Research-Based Action

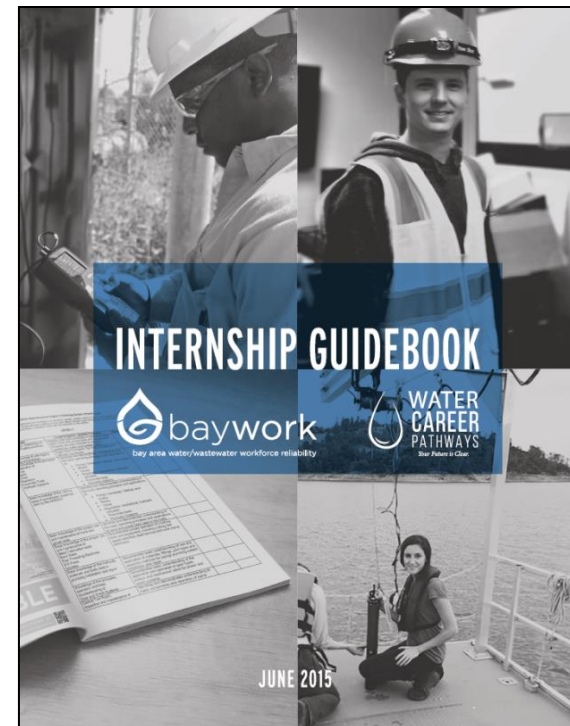
FY 2008-2009

➤ **Research on
Water/Wastewater
occupations**



FY 2014-2015

➤ **Internship Guidebook**



Research-Based Action

- **Career Roadmap reflects research done by BAYWORK with community colleges to determine knowledge students need in order to be successful in vocational training programs**



➔ Build a Good Foundation

Valuable Courses and Experiences to Gain Proficiency with Tools

Algebra	Welding
Geometry/Trigonometry	Metal Shop
Pre-Calculus	Woodshop
English (reading/writing)	Maintenance and repair of bicycles or motor vehicles
Physics	Building construction and repair
Chemistry	Wood/metal crafting
Computer Applications	Machinery repair
Technical Drafting	Building or maintaining computers
Electricity/Electronics	
Intro to Engineering	
Auto Shop	

Useful Links

California Community Colleges Chancellor's Office - Helpful Tips
www.californiacommunitycolleges.cccco.edu/Students.aspx

The California State University - Campuses and Resources
www.calstate.edu/sas/counselors-conferences.shtml

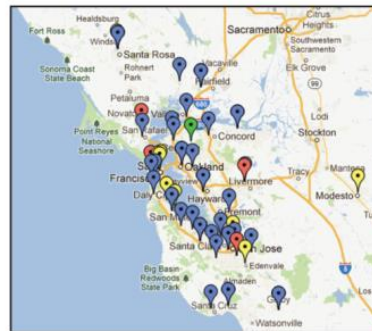
Khan Academy
www.khanacademy.org

➔ Take it to the Next Level

Baywork Training Opportunity Map

BAYWORK's Training Map provides information on Bay Area colleges, universities, unions and vocational programs that can help you prepare for a rewarding career.

<http://baywork.org/careers/find-training-locations>



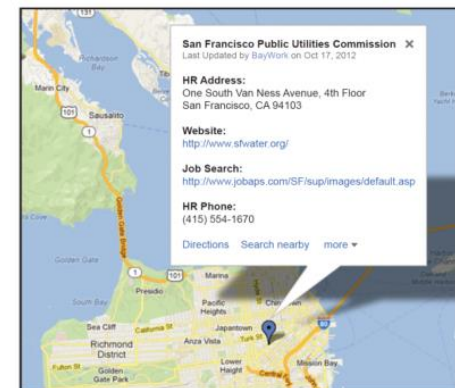
Legend

 Colleges	 High Schools	 Regional Operational Program (ROP)
 Unions	 Other	

➔ Make the Connection

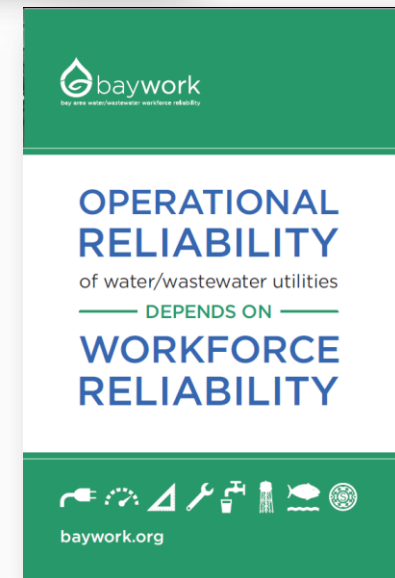
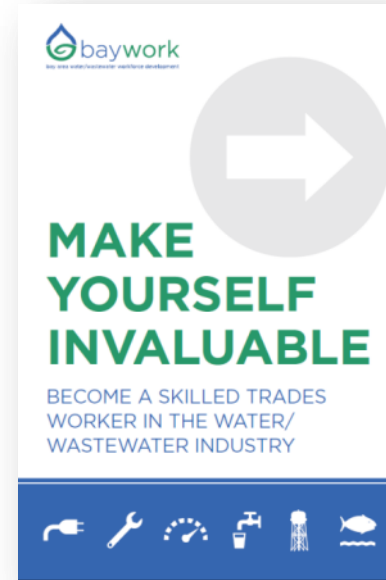
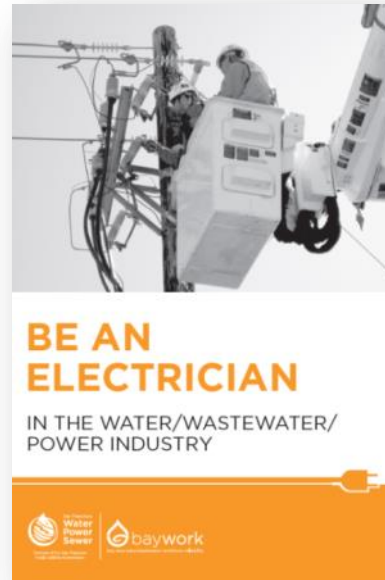
Information on water/wastewater utilities in the Bay Area can be found on the BAYWORK Employer Location Map.

<http://baywork.org/careers/job-training-maps/find-jobs>



Qualified candidates for mission-critical jobs

Outreach Brochures



Outreach Posters



BE AN ENGINEER
EXPLORE YOUR CAREER IN THE WATER & WASTEWATER INDUSTRY.

I reduced energy use.

I rehabilitated 6 miles of pipelines.

I built a 66" steel pipeline crossing an earthquake fault.

I updated as-built mechanical drawings.

I restored wildlife habitat.

I replaced an electrical substation.

I updated a sludge removal system.

I ensured compliance with safe drinking water regulations.

 baywork
bay area water/wastewater workforce reliability

This poster was published by BAYWORK, a Bay Area Workforce Development Collaborative.

LEARN MORE AT
baywork.org/career-path/engineer/




I love solving water treatment challenges.
Lisa Carter, Water Treatment Operator

I'm a water treatment operator certified in water distribution.

I'm a machinist.

I'm an instrument technician.

I'm a wastewater treatment operator.

I'm a water treatment operator.

I'm giving mother nature a helping hand.
Thomas Hedges, Wastewater Treatment Operator

I'm a wastewater treatment operator.

I'm an electrician.

BE INVALUABLE

 baywork
the bay area water/wastewater workforce reliability

Published by BAYWORK, this poster features skilled trades workers from the following Bay Area water/wastewater agencies: Zone 7 Water Agency, Alameda County Water District, San Francisco Public Utilities Commission, and the City of San Jose.

LEARN MORE AT
baywork.org/careers/



Outreach Presentations



	FY13-14	FY 14-15
Outreach Presentations	42	73
Number of venues where BAYWORK distributed Outreach Materials	80	102

Marketing Toolkit



Career Fair - 2015

- Approximately 380 attendees
- In second year, added community colleges, universities, veterans service organizations, and unions as well as BAYWORK signatories



Information Available on Website

Videos that
explain the
career paths of
employees in
mission-critical
jobs



 baywork
bay area water/wastewater workforce reliability

Name: Michelle Tarantino

Organization: Central Contra Costa Sanitary District

Job Category (Check one below):

- ☐ Water Treatment
- ☐ Water Distribution
- ☒ Wastewater Treatment
- ☐ Wastewater Collection
- ☐ Electronic Maintenance Technician/ Instrument Technician
- ☐ Electrician/ Electrical Line Worker
- ☐ Machinist/ Mechanic
- ☐ Other

MISSION-CRITICAL PROFILE

1. Please describe the work you do:
Treat wastewater through various methods and protect the environment.

2. What combination of education, experience, and skill was required in order for you to obtain your job?
Started taking classes (offered through Solano College and various districts) in wastewater treatment and related subjects.

3. What do you like best about your job?
Each day is different! Also, you are constantly learning on the job.

4. Please tell us about the projects and activities you have enjoyed most in your work in the water/wastewater field, and what made them rewarding.
The activities I enjoy the most are the times when "the unexpected" happens and you have to use all your knowledge to get the job done. (i.e. power outages or mechanical failure). Those times are rewarding because of the teamwork which is required to achieve results.

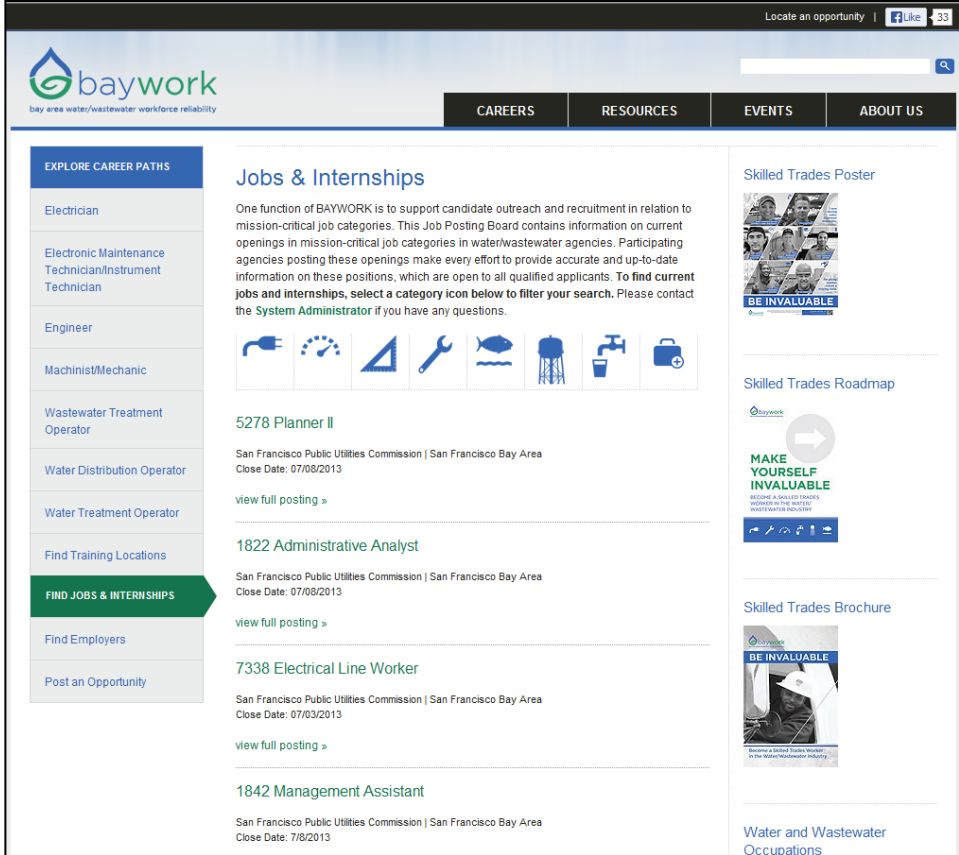
5. What qualities and capabilities are needed in order for an engineer to be successful in the water/wastewater industry?
Team player, flexibility, patience, physical strength, mental grit, and a sense of humor.

6. Do you have any advice for an individual who is considering pursuing a career as an engineer in the water/wastewater industry?



Job and Internship Posting

- Used by 32 water/wastewater agencies during FY 2014-2015
- 9,820 hits to the Job and Internship page during the last nine months of FY 2014-2015



The screenshot shows the Baywork website interface. At the top, there's a navigation bar with the Baywork logo and tagline "bay area water/wastewater work/force reliability". To the right of the logo are links for "CAREERS", "RESOURCES", "EVENTS", and "ABOUT US". Below the navigation bar is a sidebar titled "EXPLORE CAREER PATHS" with a list of job categories: Electrician, Electronic Maintenance Technician/Instrument Technician, Engineer, Machinist/Mechanic, Wastewater Treatment Operator, Water Distribution Operator, Water Treatment Operator, Find Training Locations, FIND JOBS & INTERNSHIPS (highlighted in green), Find Employers, and Post an Opportunity. The main content area is titled "Jobs & Internships" and contains a paragraph explaining the purpose of the Baywork Job Posting Board. Below this paragraph is a row of icons representing various job categories. The page lists several job openings: "5278 Planner II", "1822 Administrative Analyst", "7338 Electrical Line Worker", and "1842 Management Assistant". Each listing includes the employer (San Francisco Public Utilities Commission), the location (San Francisco Bay Area), and the close date. To the right of the job listings are three promotional banners: "Skilled Trades Poster", "Skilled Trades Roadmap", and "Skilled Trades Brochure".

Top Ten Pages Visited FY 2014-2015



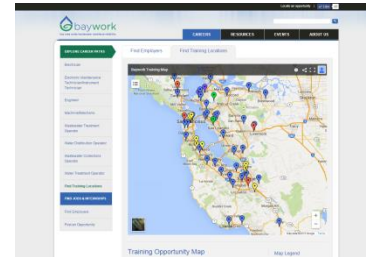
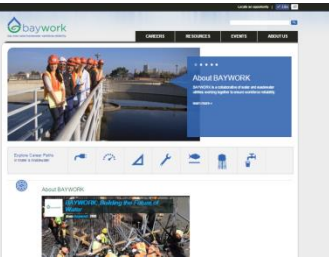
Home Page

Jobs and
Internships

Resources

Find Training
Locations

Careers



12,100

9,820

3,445

3,294

3,164

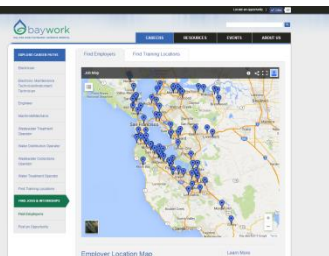
Job Map

Electronic
Maintenance
Technician /
Instrument Tech

Water
Treatment
Operator

Wastewater
Treatment
Operator

Instrumentation
and Control
(I&C) Engineer



3,094

2,373

2,350

2,299

1,398

Contextualized Learning Project

Using real-life scenarios and videos of utility staff to create curriculum materials that will help students prepare for mission-critical jobs



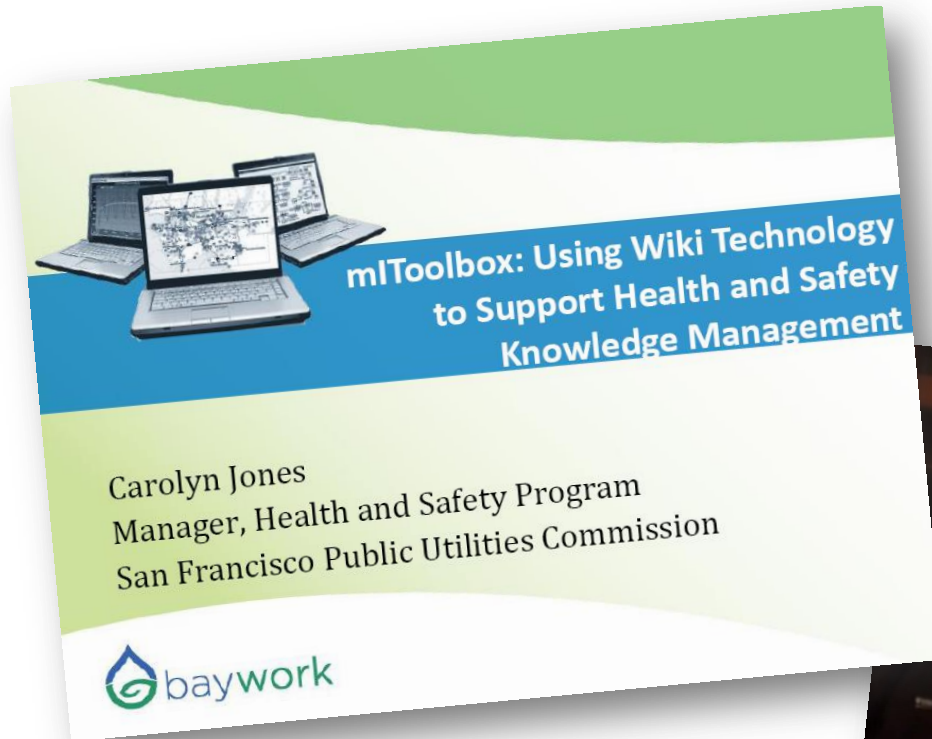
Products of Pilot Project

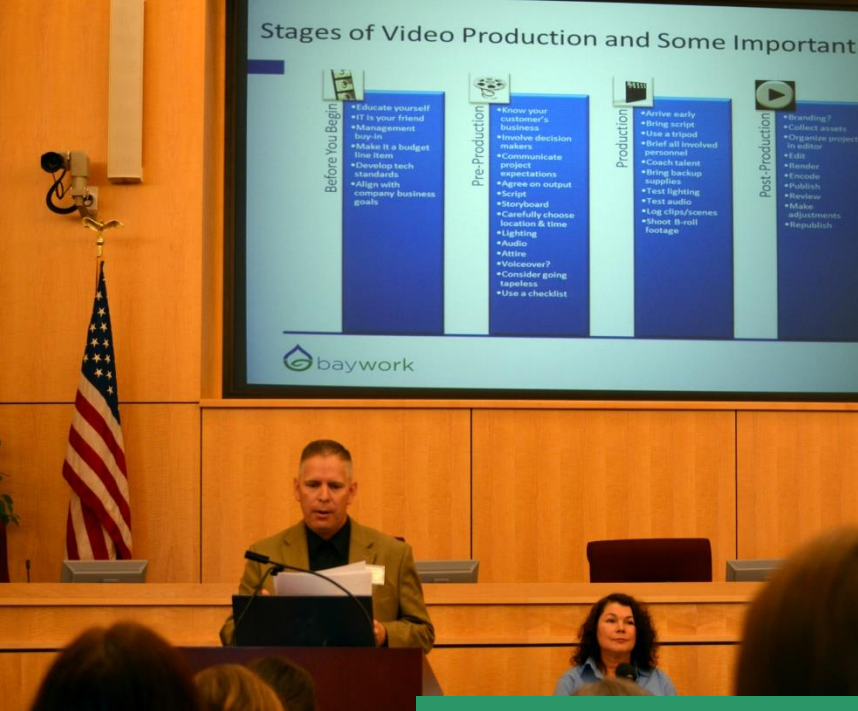
The Perfect Storm pilot project includes video, curriculum, worksheets, and mission-critical job profiles



**Providing staff with the
information they need to
do quality work**

Workshop on Effective Use of Technology





Using Technology to Teach



New Approaches to Staff Training

➤ Workshops on Wheels



East Bay II Workshop on Wheels

[CAREERS](#)[RESOURCES](#)[EVENTS](#)[ABOUT US](#)

East Bay II Workshop on Wheels

October 15, 2014

[View all workshops...](#)[Download Agenda](#)

Share     

Resources from this Workshop

-  [East Bay II Workshop on Wheels Agenda](#)
-  [Wipes Clog Pipes](#)
-  [City of Pittsburg Water Treatment Plant Survey](#)
-  [Mt. View Sanitary District Survey](#)
-  [East Bay Municipal Utility District Survey](#)
-  [Delta Diablo Sanitation District Survey](#)
-  [Central Contra Costa Sanitation District Survey](#)
-  [Zeolite Anammox Pilot Plant Presentation](#)

Video of BAYWORK East Bay II Workshop on Wheels

Information-sharing among Utilities



125 water and wastewater professionals from 25 Bay Area agencies participated in the BAYWORK Training Buffet

BAYWORK TRAINING BUFFET

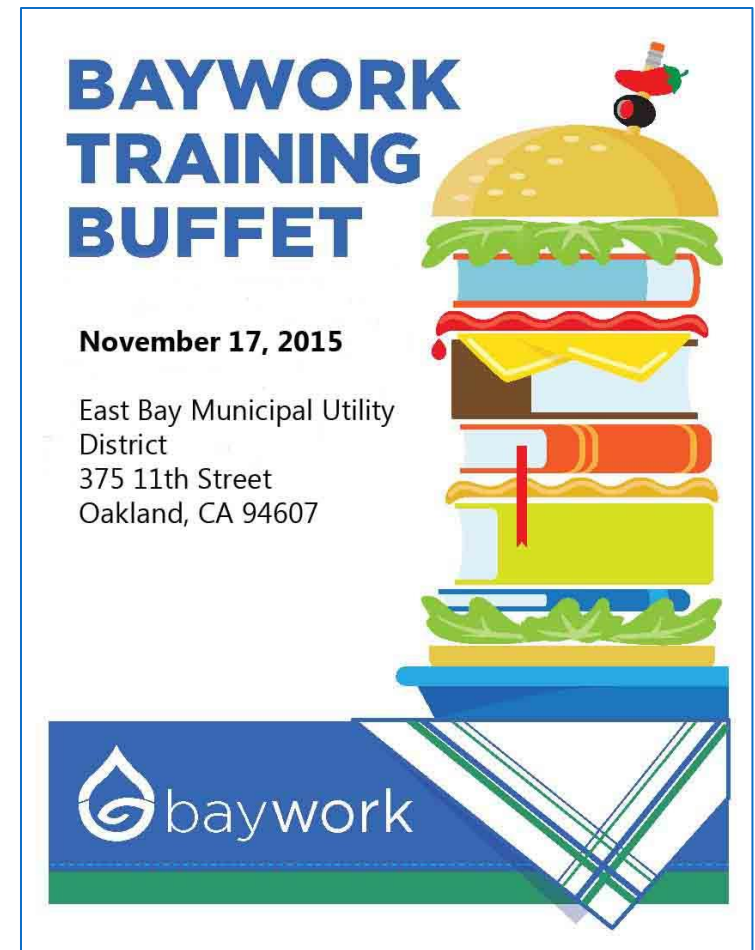
November 17, 2015

East Bay Municipal Utility
District
375 11th Street
Oakland, CA 94607



For utilities, by utilities

- **14 pick-and-choose classes**
- **21 instructors from nine utilities**
- **Contact hour credits through CWEA and SWRCB**



Training Buffet Class Schedule

BAYWORK Staff Preparedness Training Buffet - Class Registration

November 17, 2015

To register for a class, [click](#) on a box below:

<u>Time</u>	<u>TRC1</u>	<u>TRC2</u>	<u>Board Room Annex</u>	<u>Board Room</u>
8:30 - 9 a.m.	RECEPTION	RECEPTION	RECEPTION	RECEPTION
9 - 11 a.m.	Knowledge Transfer - A Toolkit that Works for Water & Wastewater Utilities - Gabriel Lewall, Senior Learning & Development Specialist, SMUD	Drought Responses – Recycled Water Give-away, Alternate Water Reuse - Levi Fuller, Chief Plant Operator & Wastewater Treatment Plant Supervisor, DSRSD & John Scarpulla, Non-potable Program Manager, SFPUC	Strategic Succession Planning - Derry Moten, Manager of Employee & Organizational Development & Maria Marques, Senior Human Resource Analyst, Employee & Organizational Development, EBMUD	Water Quality for Everyone - Ana Corti, Water Quality Analyst Lab Director, City of Pittsburg
11 a.m. - noon	Interviewing Skills and Techniques to Help Achieve Your Career Goals - Peggy Donatelli, Recruitment Program Administrator, Debra Williams, Recruiter, Delores Grissom, Recruiter, SCVWD	Bringing an Advanced Water Purification Membrane Plant Online - Pam John, Utility Treated Water Operations Manager, SCVWD	Leadership in Safety - Larry Olivan, Safety/Special Program Administrator, Oro Loma Sanitary District	Drinking Water Reference Materials & Websites - Sue Murphy, Water Quality Specialist Solano Irrigation District
12 - 1 p.m.	LUNCH	LUNCH	LUNCH	LUNCH
1 - 3 p.m.	An Overview of Recruitment and Selection, Performance Management, and Labor Relations - Teji O'Malley, Human Resources Manager, Central Contra Costa Sanitary District	Managing a Technical Training Production Project- Chris Albon, Water Quality Technician, Brenda Donald, Supervising Wastewater Control Inspector, & other SFPUC staff	Knowledge Transfer - A Toolkit that Works for Water & Wastewater Utilities - Gabriel Lewall, Senior Learning & Development Specialist, SMUD	Open Forum – Drinking Water and Wastewater Operator Certification Programs - Annette Caraway, Chief of the Office of Operator Certification, State Water Resources Control Board
3 - 4 p.m.		Wastewater Treatment Plant Compliance - James Ervin, Compliance Manager, City of San José	A Lighthearted Approach to Spill Incidents - Larry Olivan, Safety/Special Program Administrator, Oro Loma Sanitary District	

Strategic Investment in Staff Knowledge Workshop

Over 100 water and wastewater professionals attended the workshop on Feb. 4, 2015 at the Santa Clara Valley Water District in San José



Register today !!!

10:30 -11:30 a.m., Monday, August 31, 2015

Is your agency at risk of losing critical, undocumented knowledge?

Attend the BAYWORK webinar on “Knowledge Transfer - A Toolkit that can work for Water and Wastewater Utilities”

- Winner of the “Training Top 125” for 2015 - learn about SMUD’s comprehensive and innovative knowledge capture program, including strategies to identify knowledge-loss risk, which knowledge/skills to focus on capturing, and a variety of strategies for capture & transfer of expert know-how!



**Gabriel Lewall,
Senior Learning &
Development Specialist,
Sacramento Municipal
Utility District,
Sacramento, CA**



Register here today !!!

10:30 -11:30 a.m., Tuesday, December 8, 2015

No one wants to cause damage to the environment by releasing chlorinated water to creeks or storm drains, right?

Attend the BAYWORK webinar on “Navigating a New Era of Drinking Water Discharge Compliance”

Hear about San Jose Water Company’s early experiences with implementing the permit throughout operations and see an innovative assembly that can be installed in-line with the overflow of tanks and reservoirs to dechlorinate drinking water in the event of an accidental potable water discharge.



**Casey
Claborn

Water
Quality
Engineer**



**Adam
Feffer

Water
Quality
Engineer**

- Webinar qualifies for .5 CWEA and .5 SWRCB credits



On-line interactive manual on best management practices in knowledge transfer

- I. Purpose and format
- II. A Case Study of the Possible: The Sacramento Municipal Utility District Model
- III. Knowledge Transfer Tools
 - Workforce reliability planning
 - Succession Planning
 - Management Engagement
 - Work Modification
 - Documentation
 - Training and development
 - Knowledge sharing systems
- IV. Moving Forward Together
 - BAYWORK commitment to periodic expansion and update of toolkit
 - Knowledge Transfer Toolkit Survey Form and submission process

Website Resources

VIDEOS

[View all videos...](#)

Chris Nicoletti, Mechanic
Union Sanitary District



Anna Garcia, Wastewater Treatment Operator
Dublin San Ramon Services District



Jeff Madden, Water Treatment Operator
Zone 7 Water Agency



Maurice Harper, Wastewater Treatment Operator
San Francisco Public Utilities Commission

WORKSHOPS & EVENTS

[View all workshops & events...](#)

Strategic Investment in Staff Knowledge
February 04, 2015



BAYWORK Training Buffet
November 19, 2014



East Bay II Workshop on Wheels
October 15, 2014



South Bay Workshop on Wheels
June 04, 2014

HOW-TO GUIDES

[View all How-tos...](#)

Workshops on Wheels Project
BAYWORK



Inter-Agency Use of Videoconferencing to Support Staff Training
BAYWORK



From M.O.S. to J-O-B
Environmental Protection Agency



San Francisco Public Utilities Commission – Staff Preparedness: Lessons Learned from Star Utilities
San Francisco Public Utilities Commission

GOALS

Candidate Development

Develop qualified candidates for mission critical jobs.

[View details...](#)

Staff Preparedness

Provide staff with the information they need to do quality work.

[View details...](#)

Process Optimization

Modify work processes to optimize use of available staff.

[View details...](#)

Collaboration

Maximize cost-effectiveness of workforce reliability investments through collaboration.

[View details...](#)

baywork.org/resources

[CAREERS](#)[RESOURCES](#)[EVENTS](#)[ABOUT US](#)

WORKSHOPS & EVENTS



Strategic Investment in Staff Knowledge
February 04, 2015



BAYWORK Training Buffet
November 19, 2014



East Bay II Workshop on Wheels
October 15, 2014



South Bay Workshop on Wheels
June 04, 2014



How-to Workshop on Successful Internships
January 23, 2014



East Bay Workshop on Wheels
March 11, 2014

Organizational Processes

- ☐ Candidate Development
- ☐ Competency Analysis
- ☐ Documentation
- ☐ Innovation to Optimize Staff Utilization
- ☐ Knowledge Management
- ☐ Organizational Recruitment Process
- ☐ Staff Development
- ☐ Technical Training

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Mission Critical Jobs

- ☐ Electrician
- ☐ Engineer
- ☐ Instrument Technician / Electronic Maintenance Technician
- ☐ Mechanic / Machinist
- ☐ Wastewater Collections
- ☐ Wastewater Treatment Operator
- ☐ Water Distribution Operator
- ☐ Water Treatment Operator

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PROCESSES

Workforce readiness investments through collaboration

- Collaboration among utilities and with stakeholders (e.g., educational institutions)

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Baywork

shared a link.

3 · 10:12 AM · 

Learn how Star Utilities are preparing their staff to reliably perform mission-critical work. Check out the link below!

How-To – San Francisco Public Utilities Commission – Staff Preparedness: Lessons Learned from...
baywork.org

File Type: .pdf Authors: Cheryl Davis Organizations: San Francisco Public Utilities Commission Signatories: San Francisco Public Utilities Commission, Union Sanitary District

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Baywork

shared a link.

January 13 · 

Check out our Baywork website - <http://baywork.org/> to see where the water and wastewater utilities are in the San Francisco Bay Area



Baywork | Bay Area Water/Wastewater Workforce Development
baywork.org



Baywork

shared a photo.

10 · 10:12 AM · 



Machinist/Mechanic | Baywork
baywork.org

Under general direction, the Mechanic/Machinist performs preventive, routine and emergency maintenance and repair of a variety of heavy and light equipment, related systems and components.

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8 hours ago · 



Brice Hy, Wastewater Treatment Operator, San Francisco Public Utilities Commission

Brice Hy, a wastewater treatment operator at San Francisco Public Utilities Commission shares his experience.

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Baywork

changed their cover photo.

January 13 · 



Website an International Resource

Country ?	Sessions ? ↓
	20,439 % of Total: 100.00% (20,439)
1.  United States	16,622 (81.32%)
2.  India	727 (3.56%)
3.  Brazil	273 (1.34%)
4.  Canada	196 (0.96%)
5.  Philippines	178 (0.87%)
6.  United Kingdom	133 (0.65%)
7. (not set)	117 (0.57%)
8.  South Africa	113 (0.55%)
9.  Turkey	104 (0.51%)
10.  Spain	101 (0.49%)

**Fiscal Year
2014 - 2015**

2,271
13,8437

Average website visits per month
Unique visitors to date



Sustainability
Specialist
Group

Workforce Sustainability

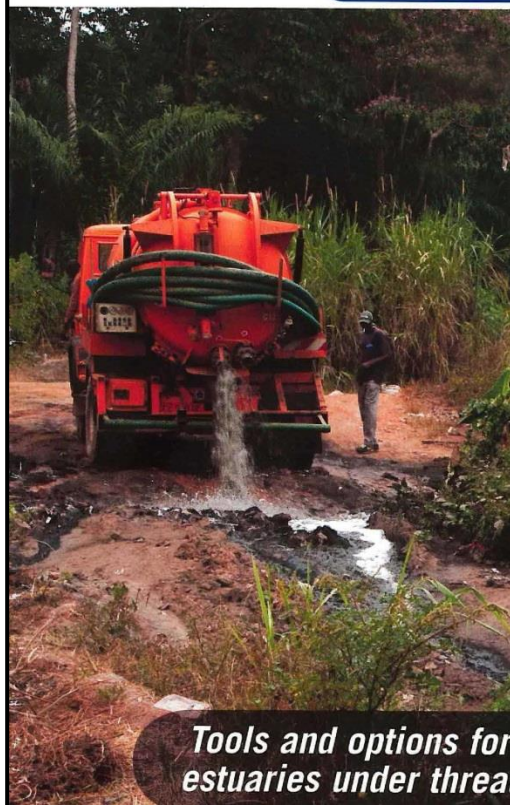
inspiring change

IWA Article on Workforce Issues - 2014

water²¹

June 2014

Magazine of the International Water Association



Tools and options for estuaries under threat

Workforce sustainability: an international challenge

● Retaining and developing knowledge in a workforce is a key issue for utilities, yet it is often overlooked.

CHERYL DAVIS introduces the IWA's Sustainability Specialist Group's newly set up Workforce Sustainability Working Group, which will research how to ensure that utility staff members have the information they need.

Although the physical assets of water and wastewater utilities vary radically, all utilities rely on an asset that is sometimes overlooked: the ability of staff to operate and maintain equipment and facilities in a way that protects public health and the environment.

One aspect of workforce reliability is the need to replace the skills of retiring workers, another is the necessity to upgrade the capacity of current staff to manage new equipment and processes. The international reality is that candidate development, documentation, technical training, knowledge management and staff development have historically been secondary (and largely underfunded) priorities of the water / wastewater industry. As a result, even affluent agencies that have constructed advanced infrastructure often fail to implement the processes needed to ensure that staff know how to operate and maintain it. Regulations and technology have advanced more quickly than our industry's progress in staff training and knowledge management. As a result, even experienced workers are sometimes unprepared to handle the responsibilities assigned to them.

The importance of addressing this industry-wide vulnerability is becoming increasingly clear. When IWA's Sustainability Specialist Group asked its members to evaluate the potential benefits of several topics for further investigation, one topic prioritized in survey results was workforce sustainability. As a result, the Sustainability Specialist Group is initiating a working group that will research, analyze, and report on best management practices in four areas of workforce sustainability:

- Development of qualified candidates in mission-critical areas such as skilled trades and engineering
- Providing staff with the information they need to do quality work (e.g., through documentation, staff development, technical training and knowledge management)
- Modifying work processes to optimize use of staff available (e.g., through increased use of information technology)

- Collaboration among industry professionals and stakeholders to increase the cost-effectiveness of workforce investments

San Francisco's BAYWORK consortium
One aspect of the working group's research will be documentation of case studies of situation-appropriate solutions in regions that are geographically, demographically, and culturally diverse. An example of one region's attempt to address these four challenges collaboratively and comprehensively is BAYWORK, a consortium of water / wastewater utilities in the San Francisco Bay Area. Founded in 2009, BAYWORK signatories now include 21 water / wastewater agencies, two professional associations (the Cal / Nevada American Water Works Association and the California Water Environment Association), and the Bay Area Community College Association. BAYWORK's website (<http://baywork.org>) reflects the products and services that BAYWORK has developed, all of which are freely available to others.

In the area of candidate development, for example, the site provides detailed information on the work performed by mission-critical trade workers (e.g., water treatment operators) and engineers. The site includes videos of individual workers discussing the work they do and the training they obtained in order to get their jobs. The jobs and internship posting component of the website can be used by water and wastewater utilities located in any part of the world.

The resources component of the website provides information from BAYWORK workshops, as well as how-to guides relating to all aspects of workforce reliability. For example, the site contains the five-year Strategic Plan for Operational Reliability developed by the San Francisco Public Utilities Commission (SFPUC). SFPUC's strategic planning process included presentations by not only US utilities but also Yarra Valley Water in Australia (with information on empowering corporate culture) and Metro Vancouver in Canada (a utility leader in terms of technical training



San Francisco's BAYWORK consortium has made freely available tools for workforce reliability. Credit: Jaraman / Shutterstock.com.

and knowledge management). The website provides PowerPoint and videos of each of these presentations as well as a how-to guide on developing a strategic plan for workforce reliability. Because the how-to guide provides an overview of this planning framework, an outline of the progression of steps, and forms used to support the process, it could be applied at any level, from a workgroup within a single utility to a national assessment of workforce reliability needs.

The website reflects information-sharing on key topics and how-to guides based on research with industry leaders. For example 'Staff preparedness: lessons learned from star utilities' reflects information gained from site visits to five utilities doing outstanding work in documentation, technical training, staff development, and knowledge management. BAYWORK has also developed innovative approaches to technical training, such as Workshops on Wheels, where participants visit multiple agencies and sites to see new approaches to wastewater collection, water and wastewater treatment, wastewater recycling, and conversion of feed water to energy.

The BAYWORK experience has illustrated the ability of industry professionals to help and learn from each other in the area of workforce reliability. This collaboration will be expanded to a global level by a working group of the IWA Sustainability Specialist Group. The Workforce Sustainability Working Group will be led by Cheryl Davis. The research conducted by this working group will result in documentation of best management practices in workforce sustainability from by all components of our industry (including utilities, consultants, vendors, and academic institutions), and lessons learned that can be applied across international boundaries. IWA members with information on effective workforce sustainability programmes are invited to contact Cheryl Davis. ●

UTILITY MANAGEMENT

About the author
Cheryl Davis is Chair of BAYWORK and Manager of the Workforce Development Initiative of the Water Enterprise of the San Francisco Public Utilities Commission.
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IWA Workshop on Workforce Reliability - 2015

IWA Conference Workshop Agenda – Jordan, 2015

Workforce Reliability as a Component of Operational Reliability: How Does your Utility Measure Up?

I. Purpose of Workshop

Why we need workforce reliability and how do we achieve it?

II. Examples of Workforce Reliability Programs in Candidate Development, Staff Preparedness, Optimized Use of Staff, and Collaboration

III. Facilitated Discussion of Experience of Attendees (Efforts, Achievements, Challenges, Lessons Learned)

IV. Group Report-Outs on Experiences and Support Desired from IWA



Wadi Mujib, Jordan

Workforce Sustainability Survey

Workforce Sustainability

Best Practices Survey

I. Respondent

Name: Anne Farquhar

Position: General Manager People & Culture (P&C)

Responsibilities in organization: Lead the P&C Group to design, implement and maintain Strategies, Systems, Programs and Services that provide the foundations for a constructive working environment that attracts and retains highly capable and satisfied employees. Includes: enterprise change, capability (learning and development, succession & career planning), recruitment, culture, industrial relations, health & wellbeing, etc.

Length of time in position: 14 years

Name of organization: Yarra Valley Water

E-mail address: anne.farquhar@yvw.com.au

Telephone: 61 3 98722410

Country: Australia

II. Type and location of organizations(s) that implemented workforce sustainability activity or program

- A. Sector: Utility / Government/Governmental Agency
- B. Name of organization(s): Yarra Valley Water
- C. Description of organization(s): Water retailer
- D. Region(s): East Asia & the Pacific
- E. Country or Countries: Australia

Background:

To understand some of our programs, it's important to understand what drives us. Our 2020 Strategy informs our actions, and everything we do is in service of our strategy. This diagram provides a brief snapshot of our strategy purpose and commitments.



Questions?