

Survey of Processes, Programs and Investments Required for Implementation of Effective Technical Training and Staff Development Programs

Purpose of the Survey

One of the primary challenges of the water/wastewater industry at this time is to provide the staff development and technical training programs needed by staff in order for them to perform quality work. The purpose of this survey is to document the processes that are being used by water/wastewater utilities that are doing outstanding work in this area, as well as the investments they are making in order to develop quality programs and products. These findings will be published in a BAYWORK report, and posted to the BAYWORK website, for the benefit of the water/wastewater industry.

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Position:	Technical Training Coordinator	
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Date:	7/10/12	
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1. Please provide the following information about your utility:

a. Please check all functions provided by your utility.

Water	Wastewater	Power	Stormwater/ Floodwater
	132		

b. How many staff members are employed by your utility?

132FTE

c. Please describe how different types of training/staff development are handled in your organization, in terms of roles and responsibilities (with an organization chart to help illustrate, if possible).

- i. **Development of Training Modules. Technical Training Coordinator (TTC) received support from an SME (Subject Matter Expert). SME is responsible for providing the necessary references and expert knowledge in the assigned tasks for his/her job classification. The TTC will complete all the administrative tasks associated with development (typing, routing, and edits).**

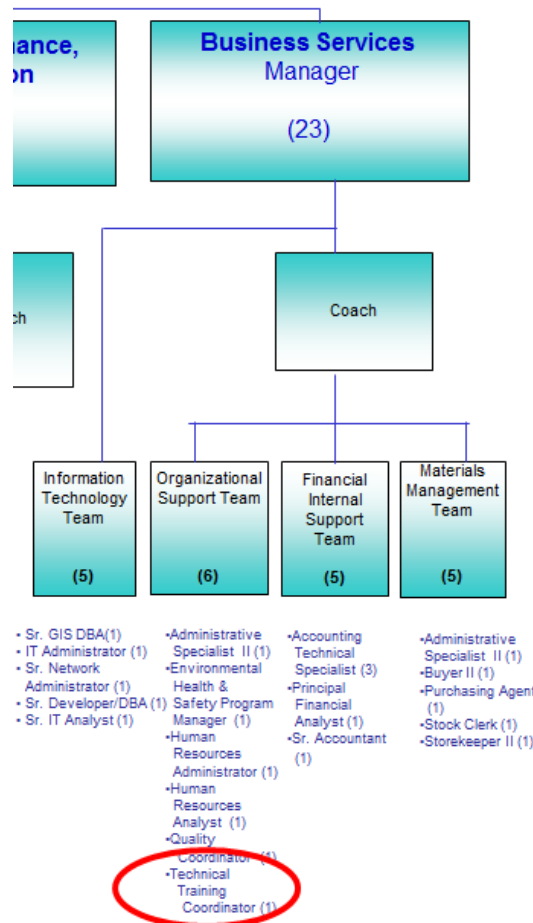
The Coach and Manager and own the Training Module are responsible to review and make appropriate edits/comments. In the case of the Manager, he will also supply the final approval.

- ii. **Training Module Instruction.** A designated SME or management will instruct the course and conduct initial assessments of competency.
- iii. **The TTC is responsible for all Training Module documents as well as all Operating Group SOPs. This done using Microsoft Share Point.**

1 FTE as Technical Training Coordinator

12 Employees have collateral duties as Training Star Points

11 Employees (Subject Matter Experts) support development of training material within their occupation within one of the three Operating Group Workgroups (Plant, Maintenance, Collections)



- d. If your utility has access to any communication technology that would allow for remote participation by SFPUC staff in this site visit (e.g., teleconferencing, videoconferencing, webinar, or skype), please describe.

- i. **SKYPE.** While the District has the ability to use SKYPE, it would require the approval of the District IT Team.

2. Please describe how you prioritize the projects you work on in regards to documentation, staff development, and technical training.

a. Who participates?

The Operating Group managers and coaches. Business Services Manager and Coach, Technical Training Coordinator, and Plant Trainer.

b. What forms, survey, analysis, workshop, documentation, etc. are used to support the prioritization process?

We use(d) the historical knowledge of management. There really is no form, survey, workshop or documentation.

Knowing what we know now, a process such as Gordon Grahams, Risk versus Frequency table would be a valuable tool. The table has the user place tasks that employees must complete in one of four categories:

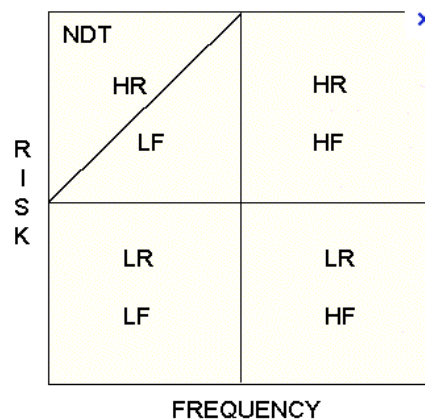
LR/HF. Low Risk/High Frequency. Tasks that are done frequently and have a low risk to the District.

LR/LF. Low Risk/Low Frequency. Tasks that are done infrequently and have a low risk to the District.

HR/HF. High Risk/High Frequency. Tasks that are done frequently and have a high risk to the District.

HR/LF. High Risk/Low Frequency. Tasks that are done infrequently that have a high risk to the District.

The initial focus would be on the HR/LF task.



- c. What criteria are used as a basis for prioritization of specific tasks or processes? (Check all that apply)

Employee Safety

Regulatory Compliance

High Volume

High Consequence of Failure

Other (please explain):

While the model in para 2.b. uses HR/LF, the District uses the term high consequence of error.

“What is the consequence of error?”. We looked at which systems or equipment that has the highest consequence of error to the District. Frequency of use was the second factor. After ranking them, will we now use this systematic approach in the development of each module.

3. What demonstrated knowledge, skills and abilities do you look for when hiring new employees to do instructional design, development and delivery?

This is not a consideration in our hiring process.

4. What organizational rewards (e.g., job advancement opportunities) if any are provided to staff who receive technical and/or staff development training?

Increases in Pay Rate Steps. Promotion to (CSW II, CSW Lead, Mech II) can be accelerated. Successful completion of State certification for Plant Operator I, II, III.

5. What type of culture change do you believe are necessary in order for training and staff development programs to support successful succession management? In your opinion, has your organization made strides toward implementing such changes, and if so, how? If your organization collects data which relates to advancement in this area, which data do you collect, and how do you measure your advancement?

Defer to Judi Berzon (HR).

6. Have you incorporated regulatory compliance procedures and documentation into your operating and maintenance work order system?

7. What different formats for documentation, staff development, and training materials have you considered and used in your training programs? What have you found to be some of the pros and cons of different approaches?

Material	Considered <i>(check all that apply)</i>	Used <i>(check all that apply)</i>	Pros	Cons
Written SOPs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Video SOPs	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Online training	<input checked="" type="checkbox"/>			
Video				
Interactive				
Avatar				
Curriculum to be used in a classroom setting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
With powerpoint	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
With video footage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Simulations using computer technology	<input checked="" type="checkbox"/>			
Field guides	<input checked="" type="checkbox"/>			
Scenario based training	<input checked="" type="checkbox"/>			
Webinars	<input checked="" type="checkbox"/>			
Skype				
Podcasts	<input checked="" type="checkbox"/>			
Videoconferencing	<input checked="" type="checkbox"/>			
Mentoring				
Other (explain):				

8. Please provide information for any training program or product produced in each applicable category where documentation/training materials have been produced.

Material	Sample product or program
Written SOPs	Paving, SCADA, Pump Station Mechanic
Video SOPs	Tractor Loader Backhoe
Online training	None
Video	
Interactive	
Tutorial	
Avatar	
Materials to be used in a classroom setting	
Powerpoint	Paving
Student Guides	None
Video	Centrifuge Maintenance
Other (Please Explain)	
Simulations using computer technology	None.
Field guides	None.
Scenario based training	In the preliminary discussion phase.
Field Demonstrations	During instruction of all training modules.
Webinars	None.
Skype	None.
Podcasts	None.
Videoconferencing	None.
Mentoring	Leadership School

Other:	

Training/Staff Development Project Worksheet

Topic/purpose of training	Paving Projects
Name or Title of Training Product(s) or Programs Produced	Paving Training Module
Type of Products/Programs Produced	Competencies, Standards, SOP, Curriculum, Powerpoint, Training Area
Date(s) Produced	October – December 2010

For this product or set of products or programs, please describe the following (if it is feasible to provide a flowchart or time line, this would be extremely helpful).

1. The process used to create it (them):
 - a. **Identification of tasks and processes.**
 - b. **Determination of system knowledge required to complete the tasks.**
 - c. **Development of standard answers.**
 - d. **Development of Standard Operating Procedures (Done in concert with c.)**
 - e. **Development of curriculum**
 - i. **Consideration is given to most effect learning style based on audience**
 - f. **Development of slides and material to support learning**

2. Professional services and/or contractual costs: **In-House**

3. Estimated staff time (by job category): **TTC 80 Hours. SME (CSW II) 60 Hours. Coach 5 Hours. Manager 10 Hours. Coach and manager time was for review and edits.**

4. What issues did you run into that affected the amount of time it took to develop the product(s) or program(s), such as lack of specific skill sets, time allowed away from job to participate, etc.?

Determining how to do the practical. Settled on having employees pave areas within the corporate yard that required re-paving.

5. Any equipment and supplies that were required (including hardware/software):
 - **Asphalt**
 - **Lute**
 - **Torch Kit with Gas**
 - **Quikrete**
 - **Construction Truck**

- Utility Compactor (Roller)
- Utility Trailer
- Tamping Rammer
- One-way Plate Compactor
- Emulsion Sprayer
- SS1H Emulsion Oil
- Dump Truck
- Delineators/Cones

6. Incentives used to encourage staff to develop staff training material:

District Alternate Compensation Program

The purpose of the Alternate Compensation Goals Program is to provide monetary awards to employees or teams that establish and meet planned goals for activities that provide a benefit to the District. This element of the program provides an annual recognition for accomplishing a goal.

Annual Goals

Goals need to be specific and fall within the categories of either individual or team goals. Goals are established by an employee, group of employees, or entire team, working with their Coach.

7. Tracking system used to track costs associated with development of training tools:

We did not use a tracking system during development.

8. Support required for implementation of the training tool (e.g., providing equipment in the field to provide staff access to information, or change in work schedules to allow training time)

Plant – 1 FTE as Plant Operator Trainer

Maintenance – 3 Mechanic II. One Mechanic II at any given time for up to 80 hours to complete a module.

Collections – 5 Collection System Worker II. One CSW II for up to 80 hours to complete a module.

Construction of the Training Center to give Collections access to realistic training that could be controlled. We have not determined the cost of the training center.

Work schedules are written around the approved training schedule.

Last year (FY12) training hours for the operating workgroups were (percentage of yearly work hours spent in training is in parenthesis next to the hours):

- a. District Wide: 4196.8
 - i. Treatment and Disposal 670.8
 - 1. TPO 533.8 (1.6%)
 - 2. RST 137.1 (1.2%)
 - ii. Fabrication Maintenance and Construction 510.3
 - 1. Mech/PS 416.8 (1.6%)
 - 2. Elec/IT 93.5 (0.9%)
 - iii. Collection Services 1313.1
 - 1. CS Support 90.3 (0.6%)
 - 2. CS MTV 561.5 (2.8%)
 - 3. CS Const 661.3 (3.0%)

9. What have you done to ensure that training products/programs are used? (Examples would be providing access to field staff through mobile computers, requiring supervisors to track staff use of training materials and verification of knowledge gained, tracking use through a Learning Management System, and scheduling formal training sessions using materials.)

All training modules must be completed by employees. Either as a refresher or as initial/recurrent trainings. We track the training type and length using our Learning Management System.

10. How do you evaluate the success of your training product(s) or program?

We use the feedback of employees (Kirkpatrick Level 1). We have just scheduled our first Level 3 Assessment to ascertain the level of knowledge and skill after one year has passed since the training intervention.

11. Lessons Learned:

- **MANAGEMENT MUST DRIVE THE BUS OR IT WILL DIE**
- **It is going to take longer than you think**
- **Sources taken away from work**
- **Details, Details = Frustration**
- **This is not an event, it is a process**

- **Not everyone can:**
 - **Develop a module**
 - **Train fellow employees**
 - **Assess fellow employees**