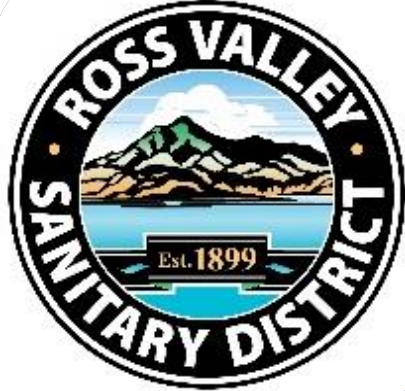


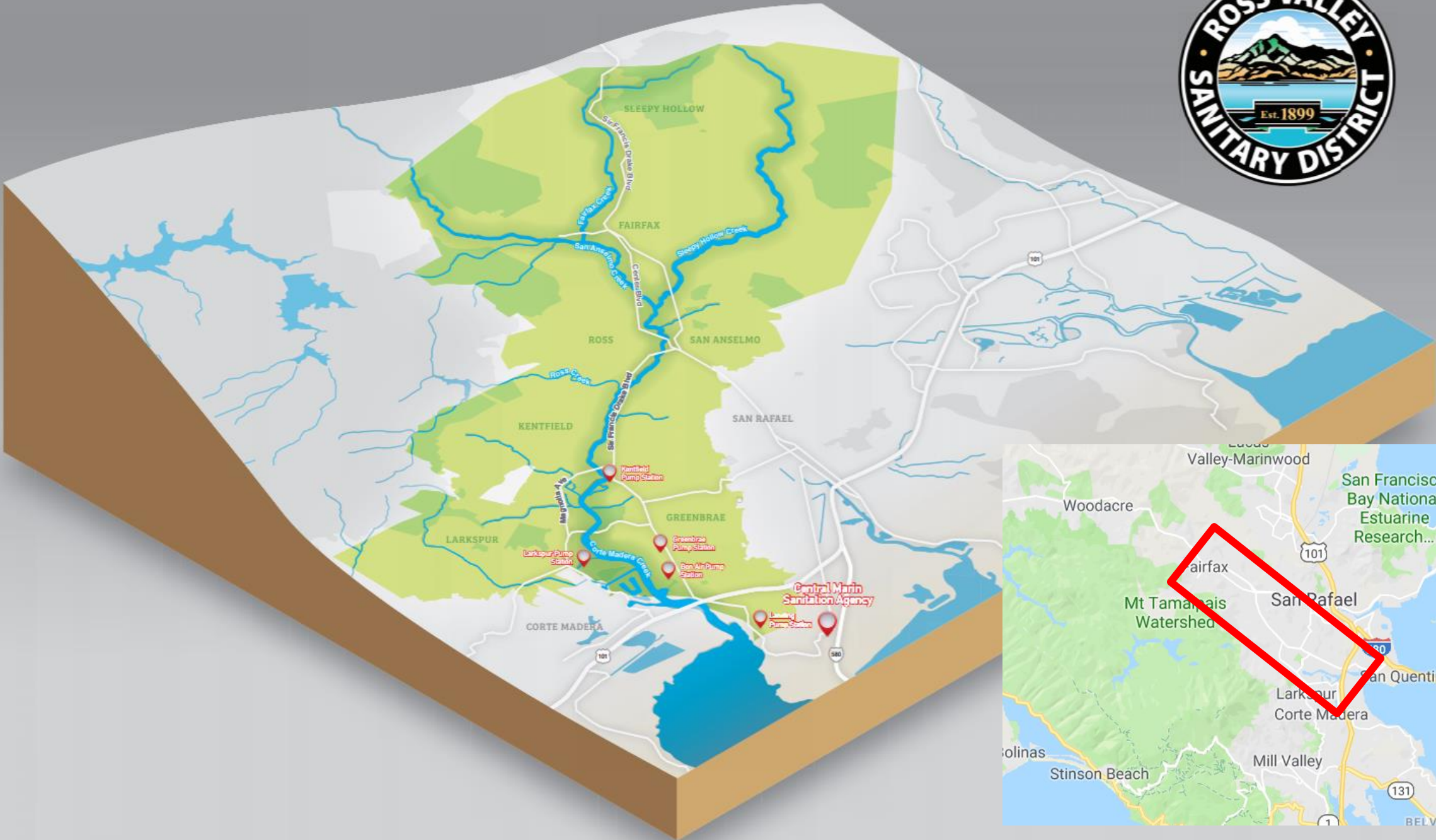


FROM QUESTIONS TO ANSWERS *WORKFORCE DEVELOPMENT AND WHAT GOOD LOOKS LIKE*

Rafael Zarco
Line Maintenance Supervisor
Ross Valley Sanitary District

BAYWORK April 23, 2019





RVSD Facts and Figures

- District formed in 1899
- Customer base of 47,000, 85% residential
- Provide WW collection/conveyance, member agency of CMSA JPA
- One of three WW conveyance agencies comprising the CMSA JPA
- 200 miles of gravity sewers, 19,000 private laterals
- 19 pump stations (5 major, 14 minor / lift stations), 8 miles of force mains
- WW flows range for 4 MGD dry weather to 50 MGD wet weather
- 35 Employees
- \$19.5M O&M Budget, \$48M capital budget



2013 -2016: Rebuilding RVSD



- RVSD hit by a “Perfect Storm” in 2009-2012.
- SSO’s, enforcement actions, financial meltdown, leadership failures, litigation, loss of community trust
- Leadership Adopted the EUM framework for rebuilding RVSD
- Implemented Risk Based Asset Management
- Community supported a 5-year 48% rate increase to fund infrastructure
- Reorganization in 2015, new job specs and alignments, AM-centric
- Strategic Plan and Subsequent Annual Business Plans
- CASA Collection Systems of The Future (COTF) Initiative recommendations
- Staff skills, knowledge, ability are common thread for success

Questions We Needed Answers To

- Objective Criteria to qualify for critical work assignments?
- Standard measure of knowledge, skills, and ability by activity, job class?
- What is our standardized training and qualification process?
- “When we say a person is “qualified” or “trained”, we meant what?
- What does “good” look like at RVSD?
- How do we measure productivity and quality of outcomes across crews?
- Typical CSW requires competency in over 60 standard activities.
- *That’s how I was trained.....this Is The Way We Have ALWAYS Done It”*



Where Do We Really Want to Be?

- Build on the EUM Attribute; *Employee and Leadership Development*
- Support knowledge management, succession planning, long term staffing
- Trained, competent workforce across all activities, equipment, systems
 - Establish Certification/Qualification Standards Tied To Training
 - Document Processes (SOP's)
- Adapt to new equipment, tasks, systems
- Consistent, Safe, And Efficient Outcomes Across Crews
- Demonstrate to customers the value of a competent, efficient workforce



How Are We Getting There?

- Leadership recognize value of workforce development
- Made commitment of staff time, \$\$, leadership engagement
- CSRMA “core SOP’s” development participation
- Engaged a professional training system development team
- Implementing sustainable competency based training and certification standards
- Inventoried the Full Range Of Activities Our Workforce Does
- Two phase approach for CBT/C: Pump Stations, Collections Systems
- 2-year Implementation schedule
- Stood up Training Committee



Modern Wastewater O&M

Scope Of Activities



Pump Station O&M
(Mechanical/Electrical/I&C)



Combination Truck



Hydraulic Cleaners



CCTV
PRE/POST/INSPECTIONS



PACP/MACP/LACP



SPOT REPAIR



TRENCHLESS PIPE
PIPE REPAIR



SSO RESPONSE



SMOKE TESTING



INSPECTIONS



TRAFFIC CONTROL



PAVING
RESTORATION



SERVICE CALLS



ENTERPRISE ASSET
MANAGEMENT

What Good Looks Like (prn.*Wiggle*)

For Your Organization, Take a Minute to Answer:

- Who determines when an employee successfully demonstrates competency for a task?
- What documented standards and system are the basis for this determination?

COMPETENCY BASED TRAINING SYSTEM OVERVIEW

 **John Influent**
Plant Operator Influent Systems Plant Operator
Plant Operations, Ross Valley Sanitary District

1 Training Modules

6 Competencies Completed

5 Competencies Remaining

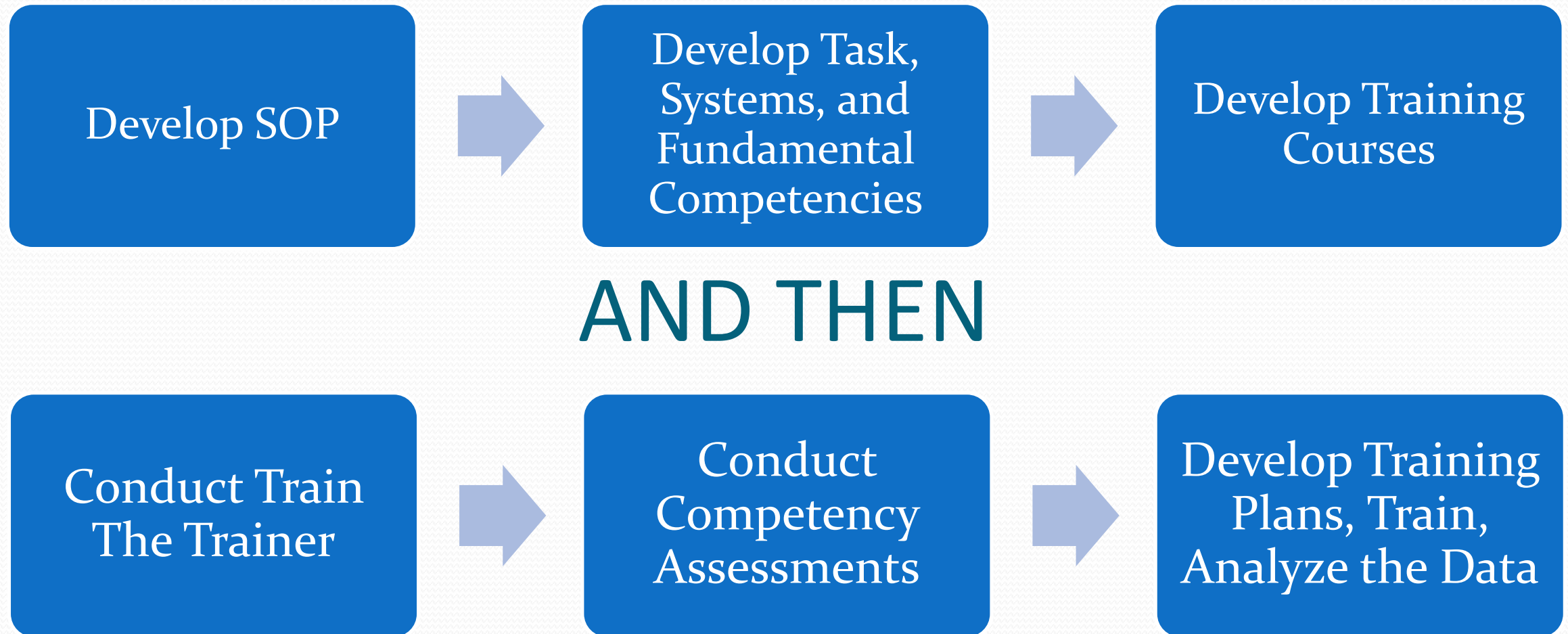
55% Complete

Please note, in order to be considered fully competent, the trainee will need to of completed the following training courses:

Influent Systems	October 05 2017
PO100.200.2 - Southwest Storm Water Pump Station	Completed
Influent Systems	October 05 2017
PO100.200.3 - Milpitas Influent Control Structure (MICS)	Training "The information provided on the pump and its components does not cover the stator and seals."
Influent Systems	April 15 2017
PO100.200.4 - Headworks 2 Pulpair System	Material "Equipment was tagged out and not available. Will re-assess at a later date."
Influent Systems	February 24 2017
PO100.100.1 - Explain preliminary treatment of wastewater.	Completed
Influent Systems	February 24 2017
PO100.100.2 - Explain basic pump theory and operation	Completed
nt Systems	February 24 2017
1 - Explain the hazards and "Hazard"	Completed

Defining What Good looks Like
And
Training To It!

COMPETENCY DEVELOPMENT, TRAINING, ASSESSMENT PROCESS



SOP and Task Analysis

- Examination of Each Step
 - In-Depth Analysis of Process
 - Dangerous and/or Inaccurate Process Corrected
 - Research of Existing References
 - Discovery of New or Improved Process
- Outcomes of Task Analysis
 - Knowledge and Skill Competencies
 - Job Descriptions
 - Safety
 - Process Review

Ross Valley Sanitary District
Standard Operating Procedure



VACCON Combination Truck

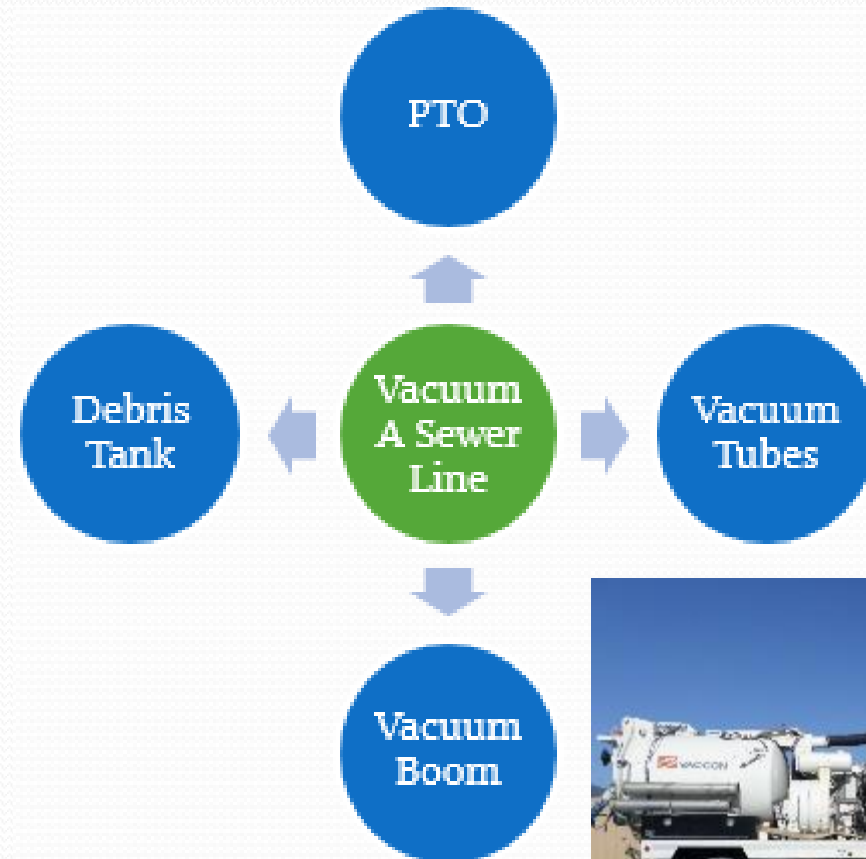
TASK STANDARD ANSWERS – VACCON

- For Any Task Competency (Skill and Knowledge)
 - What Are The Steps To This Procedure?
 - What Are The Reasons For Each Step?
 - What Control/Coordination Is Required?
 - What Means Of Communication Are Used?
 - What Safety Precautions Must Be Observed?

Table of Contents	
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Control System Overview	25
Boom & Water System Controls	29
Hydroflushing/Jetting	33
Handgun	47
Filling the Water Tanks	50
Vacuuming	51
Decanting	60
Decanting Pump	63
Dumping Debris	71
Vacuum Compressor Fan Cleaning	77
Nozzles	84
Diesel Particulate Filter (DPF)	85

SYSTEM STANDARD ANSWERS – VACCON

- For Any System Competency (Knowledge)
 - What Models/Types Are Available?
 - Where Is It Located
 - How Does It Operate
 - What Maintenance Is Done By Collection Workers To Ensure Proper Operation?
 - What Are The Probable Indications If This Component Fails



Training Process

- Classroom Followed By Practical Demonstration and Assessment of Skill



What Makes A Subject Matter Expert, An Expert Trainer?

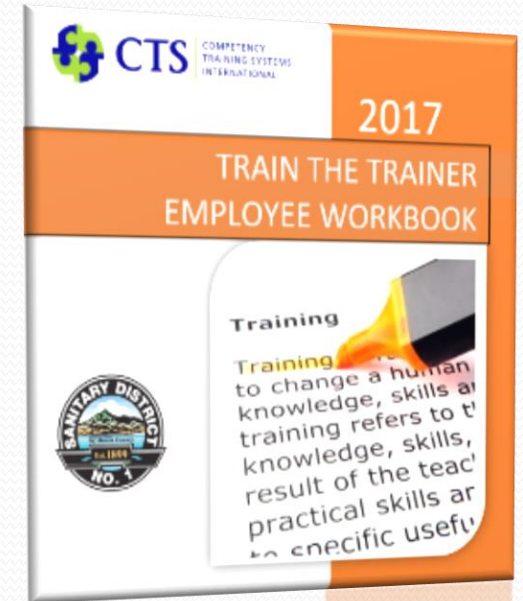
- The Train The Trainer course
 - Four Modules
 1. Adult Learning Theory
 2. Training Module Development
 3. Training Strategies and Techniques
 4. Competency Assessment

Know what an assessment is and why we use them

Develop an assessment from a Training Module

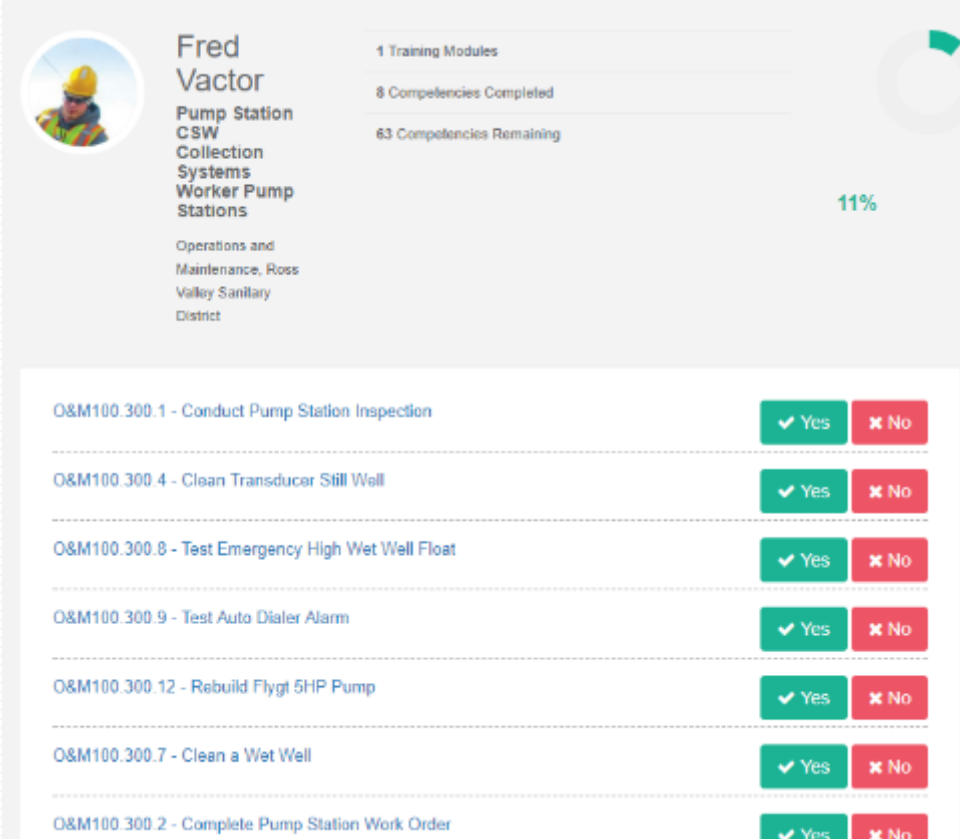
Assess an employees performance

Develop Standard Operating Procedures (SOP)



ASSESSMENT APPLICATION AND OUTCOME

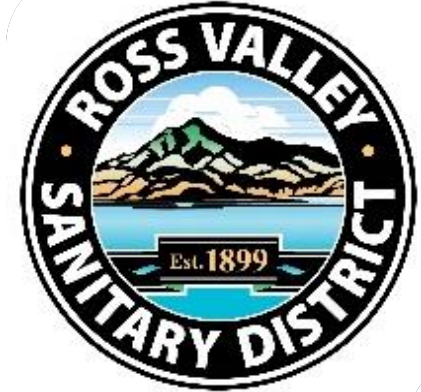
- Assess whether the employee has the knowledge and skill to complete the task in accordance with the Standard Answer
- Assessment After Training and Practical Demonstration/Experience
- Assessment of Existing Employees- Establish What They Know and Don't Know
- Train To The Delta
- CERTIFIED/QUALIFIED



The screenshot displays a user profile for Fred Vactor, a Pump Station CSW Collection Systems Worker Pump Stations, with a progress indicator showing 11% completion. The interface lists eight competencies for assessment, each with 'Yes' and 'No' response buttons.

Competency	Yes	No
O&M100.300.1 - Conduct Pump Station Inspection	☒	☐
O&M100.300.4 - Clean Transducer Still Well	☒	☐
O&M100.300.8 - Test Emergency High Wet Well Float	☒	☐
O&M100.300.9 - Test Auto Dialer Alarm	☒	☐
O&M100.300.12 - Rebuild Flygt 5HP Pump	☒	☐
O&M100.300.7 - Clean a Wet Well	☒	☐
O&M100.300.2 - Complete Pump Station Work Order	☒	☐

GOING FORWARD



Observations and Lessons Learned So Far

- Be open to outside, objective evaluation of where your organization stands
- “How to eat an elephant...”; be realistic, this is long term undertaking
- Commit staff time and resources
- Engage staff at all levels for participation (SME's, SOP development)
- SOP development, review of existing practices shows strengths and weaknesses of practices and staff knowledge, skills.

Observations and Lessons Learned So Far

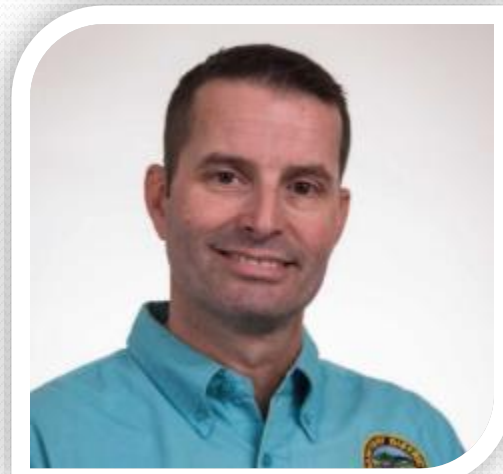
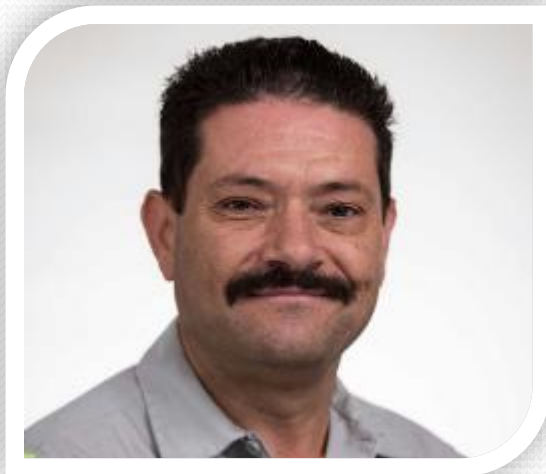
- CBT/C development supports succession planning and knowledge management needs, capturing and organizing “institutional knowledge”
- Need information management tool (software) to manage volume of information: across staff, job classes, changing activity
 - Universal Training Assessment of Competency (UTAC)
- Sustainable program requires core team of “trainers” and SME’s

You Need Great People

- Managers



- Subject Matter Experts



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