

VERTICAL TRAINING PLAN



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BACKGROUND

Over the past ten plus years, the City of Sanford Utility Department has focused much of its attention on improvements to its infrastructure. There have been major improvements to the water supply, water treatment and water distribution systems as well as very significant enhancements to the sanitary sewer treatment plants and its extensive sewer collection system. The City has had the very good fortune of obtaining significant funding for these projects through either state grants or low-interest loans. The utility's staff have foreseen developing national and state trends and have positioned the utility to benefit from them. Staff at both the management and field levels have done an excellent job of obtaining these zero-cost or low-cost resources for the citizens of Sanford. The result is a very strong water and sewer infrastructure that will provide service within the City's utility service area for decades.

The Impact of Anticipated Retirements

However, the utility is now confronted with a new challenge of a non-infrastructure type. It is anticipated that, due to changes in the State of Florida retirement system, a significant number of highly skilled employees with unique knowledge of the utility and its operation will retire within the next several years. The situation is exacerbated by an improving Central Florida economy where there is a growing demand for skilled employees by both private and governmental entities. The Utility Department experienced recent losses of staff as a result. If not given attention at this time, a knowledge-vacuum is anticipated, leaving the utility in a weakened position with the consequence of reduced utility customer service.

A Win-Win for City and Staff

To address the challenge, the utility selected JAKAP Enterprises, LLC (Consultant) to develop this Vertical Training Plan. The plan's focus is on identifying appropriate training for existing employees to prepare them to fill positions that become vacant. This will help maintain the employee knowledge base and thus the strength of the utility to continue to provide excellent service to Sanford's water and sanitary sewer customers. The intent is to provide a win-win situation for the City of Sanford and its Utility Department employees. The City will win when it retains knowledgeable employees and the utility staff will win because the plan provides paths to career advancement through training.

VERTICAL TRAINING PLAN DEVELOPMENT METHODOLOGY

The Consultant worked closely with Utility Department staff to obtain an initial understanding of their current training situation. A Kick-Off meeting was held with Key Staff to describe the Vertical Plan Project and to outline the methods that would be employed to develop the plan. Subsequently a number of interviews and meetings were conducted with employees to determine the current or "as-is" situation.

Following this series of 13 interviews with 34 employees a workshop was held with Key Staff to present and discuss the “As-Is Assessment Results”. Findings presented included current training requirements and trends as well as current and anticipated vacancies; deemed to be the critical positions. The current situation was provided in detail for the major work groups within the Utility Department as follows:

- Administration, Customer Service, and Billing
- Utility Engineering
- Water Resources
- Water and Wastewater Treatment Plant Operations
- Water and Wastewater Treatment Plant Maintenance
- Lift Station Operation and Maintenance
- Water Distribution
- Wastewater Collection

The Consultant contacted other Florida utilities, the City’s Police Department Training Officer, the City’s Information Technology Director, as well as training providers and obtained additional information.

With this insight, the Consultant developed an initial Career Ladder Framework. It consisted of visual ladders for employee advancement within the various work areas. Training courses were also identified at a high level and presented in spreadsheet format. Because on the job training (OJT) was found, during the assessment phase, to be so important within the Utility Department, examples of Standard Operating Procedures (SOPs) were provided to Key Staff. These will be needed as a foundation step if a formalized OJT program is developed at a later time.

Key Staff endorsed the Career Ladder Framework concept so the Consultant began identifying appropriate specific training courses for Utility Department positions. A number of training providers were researched but it was concluded that entities already known to the utility would be the primary sources of training. These include:

- City of Sanford
- FEMA (Federal Emergency Management Agency)
- CSU (California State University) water and wastewater technology and management manuals
- FWPCOA (Florida Water and Pollution Control Operators Association)
- UF/TREEO (University of Florida/Training, Research, and Education for Environmental Occupations)
- Fred Pryor Seminars
- Mitchell Training
- FDEP (Florida Department of Environmental Protection) and EPA (Environmental Protection Agency)

- Seminole State College
- Others

Specific preparatory training courses for Utility Department positions were presented in draft spreadsheet format to Key Staff. They were given opportunities to review, edit and add training courses as they deemed necessary for their work areas.

The most significant aspects of this Vertical Training Plan are the Career Ladder visuals and the associated Career Ladder Training Course spreadsheets. The visuals show paths of career advancement for the employees and the spreadsheets identify the specific training needed for advancement. The combination of visuals and spreadsheets constitutes the core of this Vertical Training Plan.

SUMMARY OF AS-IS ASSESSMENT

The Consultant conducted a series of interactive meetings with employees throughout the Utility Department to assess the current training situation. Training was assessed from the standpoints of legally required and optional training. On the job training was also explored as was current and expected near-term vacancies.

Required Training

There is considerable required training throughout the utility because of Florida Statutes requiring licensed water and wastewater plant operators as well as licensed water distribution operators. There are also license requirements in the Industrial Pretreatment and Fats, Oil and Grease (FOG) control areas as well as Utility Engineering and Water Resources. Legally-required licenses involve training for initial licensure and subsequent training for license renewals.

Prior to the 2008 recession training was adequately funded and employees were able to attend short schools and formal training in classroom settings. However, the training budget became very limited during the recession. This created a situation where employees looked for any available free (usually online) courses that would fulfill licensure requirements. This situation has been alleviated with a return to more normal training budgets.

Optional Training

Optional training is not legally required but is needed to meet skill requirements of various positions. As examples, Cityworks training has been provided so selected employees can use the Cityworks asset management software. The City's Information Technology Department is encouraging City staff to use the SharePoint software so training is being offered but it is not mandatory.

Equipment vendors sometime provide training on specific equipment, especially when it is first introduced within the utility. An example is the vacuum trucks (used to clean sanitary sewer

pipes), and sewer television trucks. These are complex and expensive pieces of equipment so training is typically provided by the vendors.

On the Job Training

On the job training is a very important aspect of training throughout the Utility Department; not unlike other water and wastewater utilities nation-wide. In Sanford it is done daily on an informal basis but a more formal program may be desired. There are a number of reasons why OJT is important. The multiple pieces of water and wastewater pumping and treatment equipment are specialized and require learning the specific characteristics from experienced employees. As more and more technology is used within the utility there is a growing need to learn the operating and maintenance characteristics of these systems.

In water and sewer field operations involving maintenance and repair of the extensive water and sewer pipe networks senior staff teach younger employees how to safely maintain these systems. This is a critical area because of pipe age and pipe type. The very old pipes require special techniques to effect repairs so knowledge of senior staff is very important but it could be lost through retirements of senior highly-skilled staff.

Moreover, in the customer service and billing areas, junior staff must learn from senior staff the procedures that conform to the City of Sanford's ordinances, rates and expected responses to customers. This was an area of near-crisis prior to the beginning of this project when a number of customer service and billing staff left the utility for other employment; all at nearly the same time. Utility Department management dealt with the situation to maintain the output of utility bills and thus utility cash flow but the situation was very difficult.

While OJT is important it was beyond the scope and budget of this project to establish a formal system of OJT training. However, knowledge about formal OJT programs was learned through inquiries of other utilities. A basic starting point for a formal OJT program is documenting standard operating procedures. These are currently available to a limited degree within the department.

Vacancies and Critical Positions

During the assessment interviews, current and expected vacancies were documented. These are considered the critical positions and training should be prioritized to prepare existing staff to fill these positions promptly. The following is a summary of these:

Current Vacancies (through end of May, 2016):

- Public Utilities Director
- Customer Service Supervisor
- Plant Manager of Operations
- Water Plant Operator I
- Utility Service Technician II (3 vacancies)

Potential Near-Term Vacancies (anticipated within the next two years):

- Customer Service Representatives
- Plant Mechanic
- Wastewater Plant Operator III
- Utility Service Technician I
- Utility Operations Specialist

TRAINING INSIGHT FROM OTHER UTILITIES and ENTITIES

The consultant obtained insight into the training programs of several other Florida water and wastewater utilities. The most significant findings are as follows:

JEA (Jacksonville)

This very large utility has had an Apprentice Training Program for a number of years. It is a formal program whereby junior field staff (not treatment plant staff) volunteer for the program and undergo months of training consisting of both classroom and on the job training. They are assigned mentors who help them learn and later judge their job skills. Employees are cross-trained in various job functions through a system of rotation every three months.

A founder of this program recommended that Sanford begin such program by writing Standard Operating Procedures for the various water and wastewater field functions. Several examples were provided. These are the basis of much of the apprentice training within the JEA program. He also recommended that utility staff attend short schools such as those provided by the FWPCOA.

Tavares

This nearby utility has many of the same challenges as Sanford, in particular competing with the private sector for skilled staff in an environment of lower utility wages. The utility is managing this challenge by emphasizing staff training. For example, training is discussed at every staff meeting and employees are encouraged to obtain as much training as possible.

The utility is in the process formalizing its training program whereby employees will be notified of classes and will schedule through a coordinator who will track training for each employee. The Director is not a proponent of online classes and prefers classroom settings (such as the FWPCOA short schools) where there is the added benefit of networking. To encourage longevity and to address vacancies promptly, the utility established Assistant Supervisor positions. It is further noted that the utility recently completed construction of a new Utility Administration building that includes a large modern training classroom.

Palm Coast

This utility won the state and national Top Ops (a water utility competition) in 2014 but never the less have found it difficult to find good motivated employees. They are finding a solution by teaming up with nearby Flagler Technical Institution. For the past 3 years the utility and school have offered a 156-hour Water Operator training course at a utility facility to develop certified operators. Courses are taught twice a week for four hours each session with the California State University manuals provided as textbooks. At the end of the program attendees have the knowledge to take the C Water Operator examination.

This has worked well for the utility because they have been able to vet students and selectively hire Interns from the program. These are paid as Trainees within the utility while they obtain the experience needed to obtain their C license. This is a potential source of Operator Trainees for the Sanford Utility Department.

Palm Coast plans to begin a similar program for Wastewater Operators when a new training facility is completed at the utility.

Tallahassee

While the Consultant did not contact the City of Tallahassee, a copy of their recently-developed training program was obtained. It covers fewer positions than the Vertical Training Program being developed for the City of Sanford, but the concept and approach are very similar. It consists of a Career Progression Program (CPP) and a Leadership and Development Roadmap (LaDR). The CPP is the guiding document as to how the career development program is designed and supported by Senior Leaders.

The LaDR is a specific progression pathway for water utility construction and repair field staff and is currently limited to Underground Utility Technicians I, II and IIIs. Training progression paths are defined that include both classroom and on the job training.

The utility is in the process of developing additional LaDRs for Wastewater Plant Mechanics, Wastewater Treatment Operators and also their Gas Utility Operators.

Additional Training Contacts

The Consultant also had conversations with other entities regarding training. Their insight is summarized below:

City of Sanford Police Department: Training is an ongoing daily necessity for the officers to stay current on changing laws and procedures. Much of this is done by 15 in-house trainers and 3 internal training coordinators. Police officers who leave the training program prematurely (within 3 years) must repay the City of Sanford for training expenses.

City of Sanford Information Technology Department: The most significant take-away from these several meetings was the fact that this department has developed a training tracking system using its SharePoint software. It appears that this could be customized to become a training tracking system for the Utility Department.

Jeff Elder, City of Deltona: Mr. Elder teaches FWPCOA water, wastewater, cross-connection control and stormwater courses in nearby Deltona and Osteen.

AWWA and WEF Training

The AWWA (American Water Works Association) and WEF (Water Environment Federation) have a large number of training sources in the form of textbooks, online studies, conferences, webinars, research reports, and videos. These apply directly to water and wastewater utilities and can be valuable to the Sanford Utility Department as supplemental learning or research sources.

The Consultant did not find that training courses from these sources are currently used by staff therefore it was decided that courses for the Vertical Training Plan would be identified from sources already familiar to them. However, as experience is gained from the plan, it is anticipated that courses from these two organizations will be brought forth as alternates to recommended courses or as references for additional insight into particular issues.

CAREER SOURCE AND INTERNSHIPS

The Sanford Utility Department has utilized Career Source recently as a source of two trained employees. While the Vertical Training Plan is intended to reduce reliance on outside hires, this agency should be kept in mind for trained staff whenever particular skills are lacking internally.

The Water Resources area of the Utility Department has utilized internships successfully to obtain engineering skills. This is a viable option for engineering talent given the extensive engineering program at UCF (University of Central Florida). Internships could be extended to Water Operators and perhaps Wastewater Operators given the training program described earlier in this report at the Palm Coast Utility in nearby Flagler County.

Limitations

This training approach at the Utility Department is new and is intended to help motivated employees move up within the organization by taking recommended training courses. However, some limitations are advised:

- **Budget:** The Utility Department's Training Budget is finite so employees cannot expect to be approved for all courses requested.
- **Daily Work:** The daily work of the utility must continue so the time required for training, and away from the job, must be taken into account.

- **Not a Guarantee:** It is noted and emphasized that having completed identified training does not guarantee promotions but it puts trained employees in a better position to compete for open positions.

RECOMMENDED NEXT STEPS

1. **Employee Awareness:** The Vertical Training Plan should be rolled out to the department staff with thorough explanations and ample time for questions. Allow time for the employees to consider and understand the plan prior to their next Evaluation.
2. **Employee Evaluation Process:** During the next round of employee evaluations, training should be a factor in establishing goals for their upcoming work year.
3. **Establish a Training Tracking System:** This was researched to some extent during the plan development and several possibilities identified including the use of SharePoint. A next step should be to select and develop a method. This should include designating a Training Coordinator at the Department level or multiple Coordinators at the Division levels.
4. **Modify the Vertical Training Plan:** As experience is gained with the plan, modifications and improvements are a natural expectation and should be incorporated into it.
5. **Write Standard Operating Procedures:** A method of minimizing knowledge loss is to develop Standard Operating Procedures for typical tasks. It is important that these be written before senior staff retire and their knowledge lost from the utility. SOPs would be a foundation for a formal on the job training program such as the JEA Apprentice Program.

VERTICAL TRAINING PLAN ELEMENTS: THE CORE OF THE PLAN

This section contains the vital elements of the Vertical Training Plan. There are two aspects of this; the Career Ladder Visuals and the Career Ladder Training Course spreadsheets.

Career Ladder Visuals

These were developed based on typical paths taken by Utility Department employees who move into higher level positions. In some work areas there are more than one path available for advancement. The department felt it important to provide an easily-understood visual to guide employees during their careers with the Utility Department. It is intended to act as an incentive for employees to remain employed by the Utility Department and be prepared, through training, to fill higher positions when the opportunities arise.

Career Ladder Training Courses

The Career Ladder Visuals, while graphic and helpful, do not provide the Utility Department's training expectations. Therefore, Career Ladder Training Courses spreadsheets were developed that identify training needed to be prepared for the next position on the Career Ladder.

Career Ladder Visuals and Career Ladder Training Courses spreadsheets are included as follows:

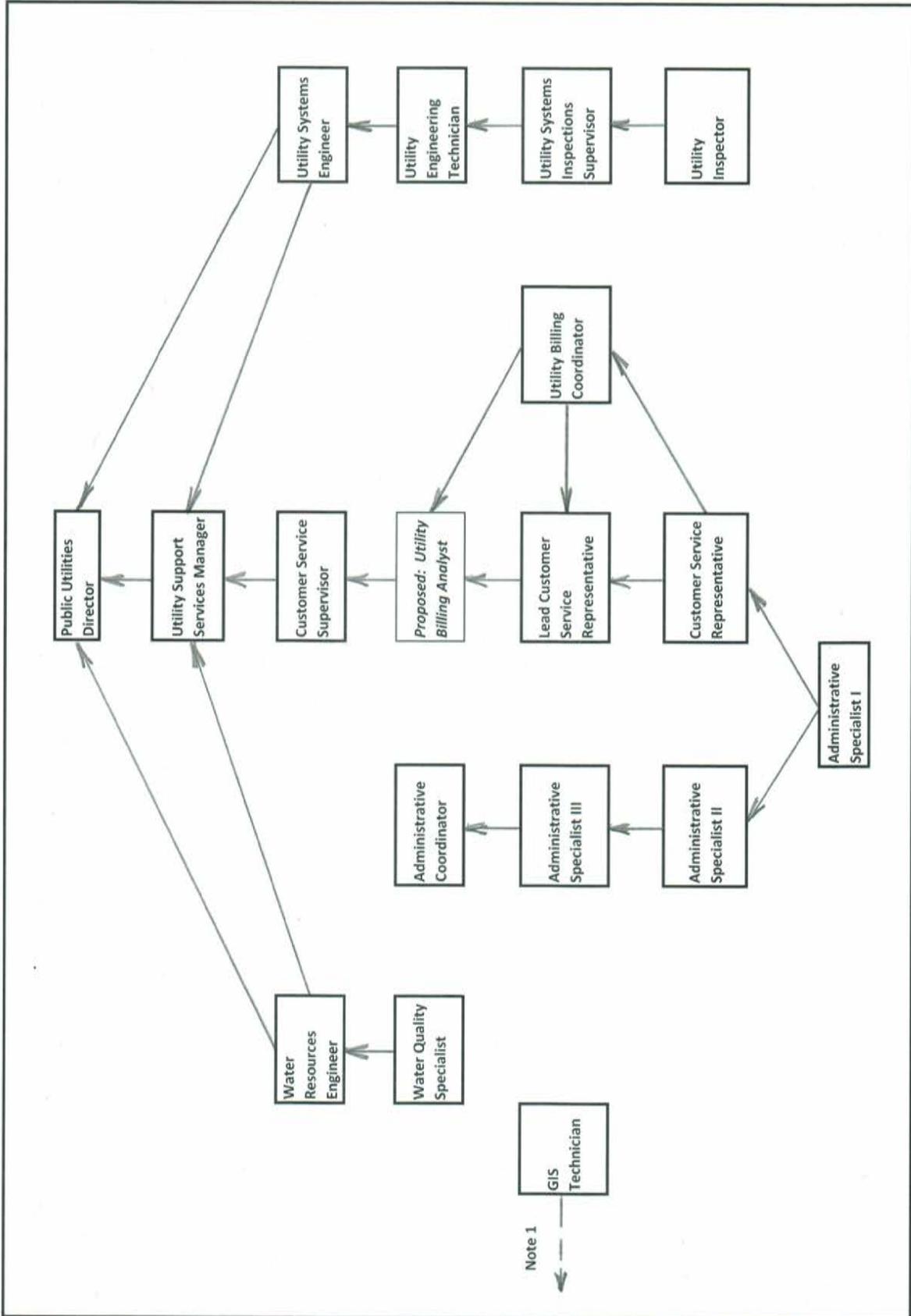
- **Utility Support Services including:**
 - Water Resources
 - Administrative
 - Customer Service and Billing
 - Utility Engineering

- **Plant Operations including:**
 - Water Plant Operations
 - Wastewater Plant Operations
 - Industrial Pretreatment/FOG (Fats, Oil and Grease) Programs

- **Plant Maintenance including:**
 - Electrical Maintenance
 - Mechanical Maintenance
 - Lift Station Operations and Maintenance

- **Utility Operations including:**
 - Water Field Operations
 - Wastewater Field Operations
 - Equipment Operator

**VERTICAL TRAINING PLAN
CAREER LADDERS WITHIN UTILITY SUPPORT SERVICES**



Note 1: The GIS Technician has the potential to be included within a future technology support group.

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: WATER RESOURCES within UTILITY SUPPORT SERVICES

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom	Other Courses
From outside this workgroup - Preparing to become Water Quality Specialist	4 year college degree with major course work in environmental, chemical or civil engineering and 1 year experience. 2 years experience may compensate for 1 year of education. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License or obtain within 18 months of hire. Level 2 Water Distribution License within 3 years.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System				Water Distribution Systems Operator Level 2 & 3 Training \$325; Water Treatment Plant Operations C-Online \$?			
Water Quality Specialist - Preparing to become Water Resources Engineer	Masters Degree, Environmental or Mechanical Engineering. Florida Professional Engineer license preferred. 3 - 4 years technical experience in engineering including 2 years experience in similar water resources engineering in administration and management of regional water and wastewater treatment including high-level supervisory and administrative experience.	Supervisory Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction; IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Water Treatment Plant Operation, Vol. I and II; Water Distribution System Operation and Maintenance; Operation of Wastewater Treatment Plants, Vol. I and II; Advanced Waste Treatment	The Other Advanced Sewage treatment Systems \$15; Balancing Treatment, Rehabilitation, Project Delivery and Cost \$15; Improving Drinking Water Plant Performance and Regulatory Compliance via Chemical Control Optimization \$15; An Innovative Approach to Prioritizing Water Main Replacement \$15; Disinfection By-Product Formation Reduction & H2S Treatment Using Ozone \$15; Utility Customer Relations Level 1 \$290 (Note: This has a 1-day "live" classroom component)	Unidirectional Flushing Workshop \$7; DEP SOP's for Water Sampling & Meter Testing \$295; Process Control of Advanced Waste Treatment Plants \$549	Wastewater Collection Systems \$325; Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Making the Transition from Staff to Supervisor \$99; Dealing with Difficult People \$149; Managing Multiple Priorities, Projects and Deadlines \$39; Budget Management (Note: a webinar CD-ROM) \$199		Project Management Course
Water Resources Engineer - Preparing to become Utility Support Services Manager	B.S. Civil Engineering, Public Administration, Communications or related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.			Utility Management; Manage for Success		Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	How to Deliver Exceptional Customer Service \$179; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249;	Creating the Life-Long Customer \$150; Team Building \$?	
Water Resources Engineer - Preparing to become Public Utilities Director	B.S. Civil Engineering related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.		IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management; Manage for Success			Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Manager's Master Course \$199; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249		

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: ADMINISTRATIVE

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	FWPCOA Online	Fred Pryor Classroom	Mitchell Classroom	Other Courses
From outside this work area - Preparing to become Administrative Specialist I	High School diploma or GED. 1 - 2 years experience general administrative support. Broad exposure and application of current office systems technology and software.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System				
Administrative Specialist I - Preparing to become Administrative Specialist II	High School diploma or GED. 3 - 4 years experience general administrative support. Broad exposure and application of current office systems technology and software.	Records Management		Utility Customer Relations Level 1 \$290 (Note: This is online but also requires 1 "live" classroom component)	The Outstanding Receptionist \$79; Managing Emotions Under Pressure \$149 (for Support Serv. Adm. I)	Phone Skills and Communication \$150	Cityworks Training
Administrative Specialist II - Preparing to become Administrative Specialist III	High School diploma or GED. 3 - 4 years experience general administrative support. Broad exposure and application of current office systems technology and software. Microsoft Office Specialist Certification preferred. ICS-100 Introduction to Incident Command System within 6 month; IS-700 National Incident Management System.	Records Management	ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System		The Outstanding Receptionist \$79 (for Plants Adm. II)		Microsoft Office Specialist Certification courses
Administrative Specialist III - Preparing to become Administrative Coordinator	High School diploma or GED. 5 years experience or training in administrative/secretarial support to include 2 years within senior clerical/secretarial support capacity.	Supervisory Training; Laser Fisch Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction		The Outstanding Receptionist \$79 (for W&S Field Ops. Adm. III)		

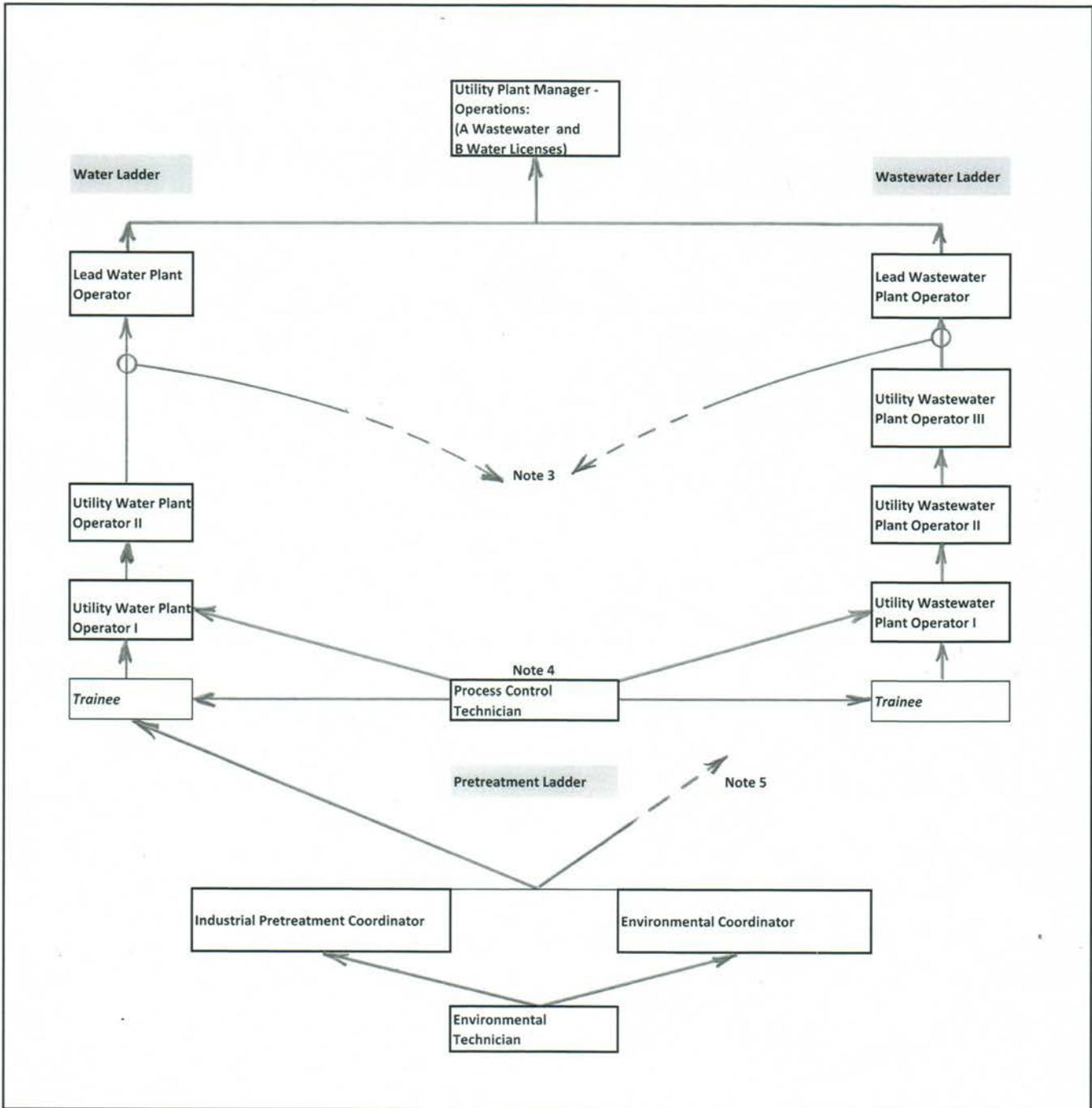
VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: CUSTOMER SERVICE and BILLING within UTILITY SUPPORT SERVICES

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom	Other Courses
From outside this work area - Preparing to become Administrative Specialist I	High School diploma or GED. 1 - 2 years experience general administrative support. Broad exposure and application of current office systems technology and software.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System							
Administrative Specialist I - Preparing to become Customer Service Representative	High School diploma or GED. Demonstrated aptitude for customer service work and 1 year clerical and cashiering functions.				FWPCOA: Utility Customer Relations Level 1 \$290 (Note: This has a 1-day "live" classroom component)				Creating the Life-Long Customer \$150	Cityworks Training
Customer Service Representative - Preparing to become Utility Billing Coordinator	High School diploma or GED. 3 - 4 years experience in data processing and bookkeeping to include 1 - 2 years experience within similar utility billing setting. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System	Records Management	ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System					Dealing with Difficult People, \$149; How to Deliver Exceptional Customer Service \$179; Basic Supervision \$149; Managing Multiple Priorities, Projects and Deadlines \$39		SunGard HTE training.
Utility Billing Coordinator - Preparing to become Lead Customer Service Representative	High School diploma or GED. 2 - 3 years customer service, clerical and cashiering experience. SunGard HTE experience preferred; billing experience in Utilities environment preferred. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System	Supervisory Training	ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System					Making the Transition from Staff to Supervisor \$99; A Crash Course for the First-Time Manager or Supervisor \$149		
Utility Billing Coordinator or Lead Customer Service Representative - Preparing to become Utility Billing Analyst (FY17 Proposed Position)	To be determined							Managing Multiple Priorities, Projects and Deadlines \$39		
Lead Customer Service Representative - Preparing to become Customer Service Supervisor	Associates Degree supplemented by 5 - 7 years responsible customer service, clerical and cashiering experience, to include 2 years in a lead capacity.	Supervisory Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction					Managing Multiple Priorities, Projects and Deadlines \$39	Team Building \$?	
Customer Service Supervisor - Preparing to become Utility Support Services Manager	B.S. Civil Engineering, Public Administration, Communications or related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.			Utility Management; Manage for Success			Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249		
Utility Support Services Manager - Preparing to become Public Utilities Director	B.S. Civil Engineering related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.		IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management; Manage for Success		Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249		

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: UTILITY ENGINEERING within UTILITY SUPPORT SERVICES

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	FWPCOA Classroom	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Correspondence & Classroom	FDEP/EPA Rules	Other Courses
From outside this work area - Preparing to become Utility Inspector	High School diploma or GED; relevant vocational training; 3 - 4 years underground utility experience. Florida Driver's License, Safe Driving Designation preferred. Knowledge of backflow prevention and cross connections and be able to be certified. Able to obtain Level III Water Distribution operations and maintenance license and minimum level certification in sanitary collection systems.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System		Wastewater Collection System Maintenance \$75		Backflow Prevention Assembly Tester Training and Certification \$595	Water Distribution System Operator Level 2 & 3 Training \$325; Wastewater Collection Systems Online \$325	E-mail and Business Writing (note, not offered in Florida)			
Utility Inspector - Preparing to become Utility Systems Inspections Supervisor	AA or AS degree - engineering, utility planning, or project management; or School Diploma with 3 - 5 years experience project management, Water and Sewer construction and/or maintenance; 2 years supervisory experience in water and wastewater field; knowledge of backflow protection and Cross Connection Control programs. Within 6 months: ICS-100 Introduction to Incident Command System and IS-700 National Incident Management System.	Supervisory Training	ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System	Water Distribution System Operation and Maintenance; Wastewater Collection Systems		Back Flow Repair Class \$305; Back Flow Tester Class \$405; Reclaimed Water Field Inspector Course \$380	Water Distribution System Pipes and Valves \$169		Dealing With Difficult People \$149; Making the Transition from staff to Supervisor \$99; Business Writing for Results \$199 or Seminole State College course ENC3213			Seminole State College: ENC3213 - Technical and Business Writing or Fred Pryor writing course
Utility Systems Inspections Supervisor - Preparing to become Utility Engineering Technician	Associate degree, course work Civil or Mechanical Engineering; 2 years engineering tech office and field work - water and wastewater utilities; or High School diploma with 4 years paraprofessional Civil or Mechanical Engineering involving water and wastewater utility work; Experience with various software (Excel, MS Word, Share Point, GIS, AutoCAD, Bluebeam.). Customer Service Experience required.			Water Distribution System Operation and Maintenance; Wastewater Collection Systems	Utility Customer Relations Level 1 \$290 (Note: This has a 1-day "live" classroom component)				Microsoft Excel: Beyond the Basics \$99; Dealing with Difficult People \$149; Business Writing for Results \$199 or Seminole State College course ENC3213		FDEP Water and Wastewater Regulations	Seminole State College: ENC3213 - Technical and Business Writing or Fred Pryor writing course. Excel, MS Word, Share Point, GIS, AutoCAD, Bluebeam training.
Utility Engineering Technician or Utility Inspections Supervisor - Preparing to become Utility Systems Engineer	Bachelor's Degree in Engineering, Mechanical Engineering or related. 5 to 7 years responsible technical experience in engineering including 3 years project management experience in water and wastewater and 2 years experience with AutoCAD 2000 or higher and ESRI ArchMap 9X or higher or equivalent combination of education, training and experience.	Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction; IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Water Distribution System Operation and Maintenance; Wastewater Collection Systems	Utility Customer Relations Level 1 \$290 (Note: This has a 1-day "live" classroom component)	Value Engineering Regulatory Burden to Lower Cost \$15			Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines \$39	Team Building \$?	FDEP Water and Wastewater Regulations	Seminole State College: BCN2721 - Construction Scheduling and Planning (Note: 2 Prerequisites required - BCN 1221 and BCT 2700); AutoCAD 2000 or higher training; ESRI ArchMap 9X or higher training.
Utility Systems Engineer - Preparing to become Utility Support Services Manager	B.S. Civil Engineering, Public Administration, Communications or related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.			Utility Management; Manage for Success			Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249			
Utility Systems Engineer - Preparing to become Public Utilities Director	B.S. Civil Engineering related field. 5 - 7 years responsible technical experience in public utilities including 2 years in lead/supervisory capacity.		IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management; Manage for Success				Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249			

**VERTICAL TRAINING PLAN
CAREER LADDERS WITHIN PLANT OPERATIONS**



Note 1: The Environmental Coordinator position is officially within Plant Maintenance but is shown here because of its relationship with the Industrial Pretreatment Coordinator position.

Note 2: The *Trainee* position(s) are requested but not yet approved.

Note 3: If Water and Wastewater Plant Operators are cross-trained, they may be able to enter the alternate ladder without starting at the Trainee level.

Note 4: The Process Control Technician could enter either the Water or Wastewater ladder at either the Trainee level or Plant Operator I level, depending on his/her experience.

Note 5: The Industrial Pretreatment Coordinator and Environmental Coordinator could enter the Wastewater ladder at some point above the Trainee level, depending on how much of their experience counts toward the Wastewater Plant Operator license.

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: WATER PLANT OPERATIONS

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom or Correspondence	FDEP/EPA Rules
From outside this work area - Preparing to become Trainee	Position not yet approved so requirements not available		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System							
Trainee or Process Control Technician - Preparing to become Utility Water Plant Operator I	High School diploma or GED. 6 - 11 months experience in utilities or pump-mechanical operations. Water Treatment Plant Operator C License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System	Water Treatment Plant Operation, Vol. I and Vol. II	Water Treatment Plant Operator Level C \$300; Basic Electrical Safety \$15; Fall Protection \$15; Flammable Materials Awareness \$15; Lockout/Tagout \$15; Chlorine Safety - Awareness \$15; Confined Space - Awareness \$15	The Science of Disinfection \$245; DEP SOPs for Water Sampling & Meter Testing \$295	Water Treatment Plant Operations C \$?		OSHA Permit Required Confined Space Entry classroom \$150	Florida Statute Chapter 62-602 (Operator Certification); 62-550 (Drinking Water Standards)
Utility Water Plant Operator I - Preparing to become Utility Water Plant Operator II	High School diploma or GED. 2 - 3 years experience in utilities and/or public pump-mechanical operation. Class B Drinking Water License.			Water Treatment Plant Operation, Vol. I & II	Sodium Hypochlorite \$15	Dissolved Oxygen & Oxidation Reduction Potential Training \$249				62-550 (Drinking Water Standards)
Utility Water Plant Operator II - Preparing to become Lead Water Plant Operator	High School diploma or GED. 5 - 7 years responsible experience in utilities and/or public pump-mechanical operation to include 2 - 3 years in lead capacity. Class B Drinking Water License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Supervisory Training	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction	Utility Management	Disinfection By-Product Formation Reduction & H2S Treatment Using Ozone \$15			Basic Supervision \$149; A Crash Course for the First-Time Manager or Supervisor \$149	OSHA Permit Required Confined Space Entry Rescue classroom \$445	62-550 (Drinking Water Stds. And MCLs); 62-560 (Non-Compliance); 62-699 (Staffing); EPA 141-80 (Lead and Copper);
Lead Water Plant Operator - Preparing to become Utility Plant Manager - Operations	B.S. Degree in chemistry, biology, engineering or related field. 8 - 10 years responsible experience in utility operations to include 5 - 7 years in supervisory capacity. Class B Drinking Water License. Class A Wastewater Treatment Plant Operator's License.	Supervisory Training; Records Management	IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management; Manage for Success		Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines #39; For Females: Leadership & Management Skills for Women \$199	Team Building \$?	

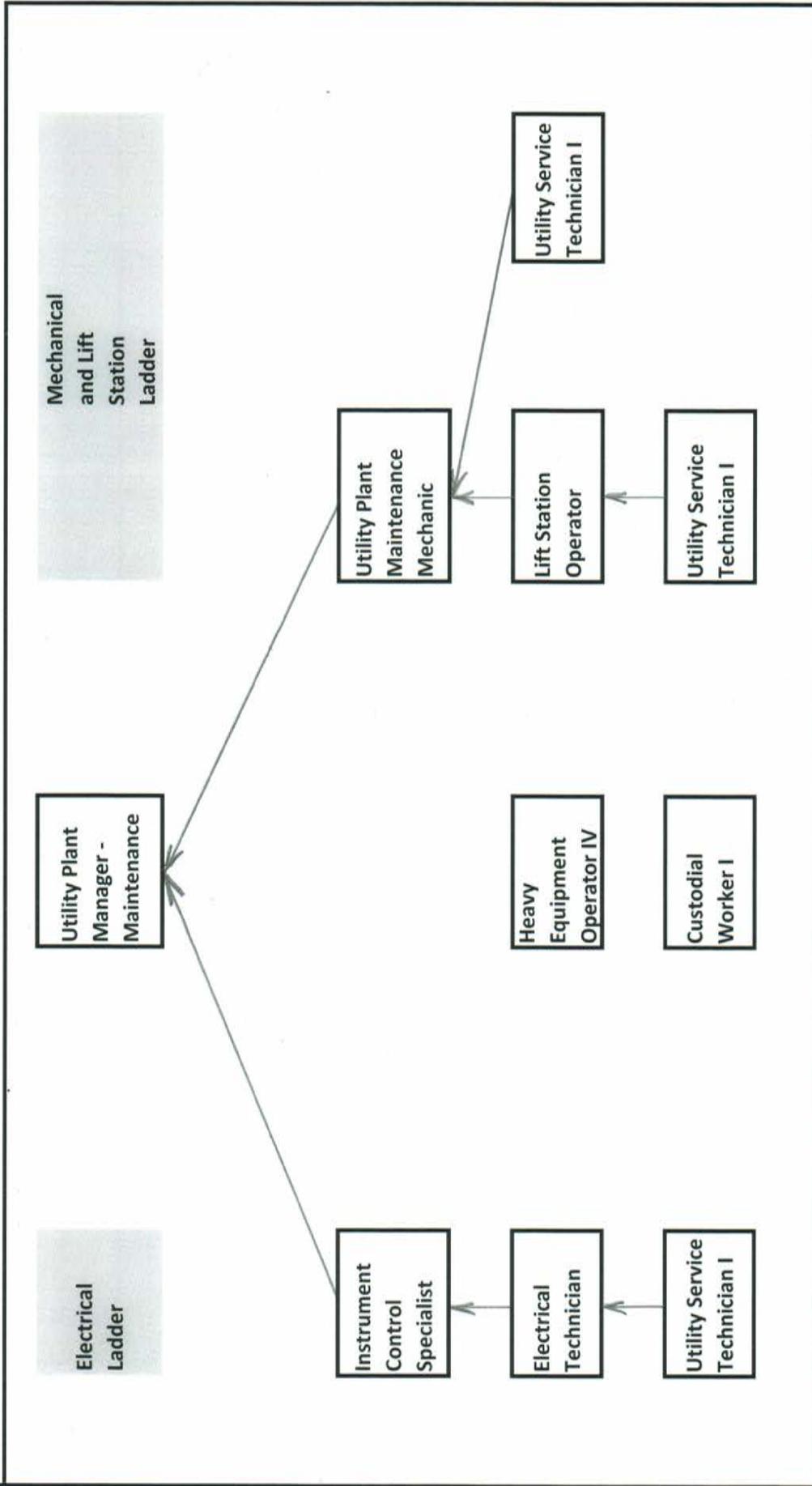
VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: WASTEWATER PLANT OPERATIONS

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom or Correspondence	FDEP/EPA Rules
From outside this work area - Preparing to become Trainee	Position not yet approved so requirement not available		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System							
Trainee or Process Control Technician - Preparing to become Utility Wastewater Plant Operator I	High School diploma or GED. 6 - 11 months experience in utilities or pump-mechanical operations. Class C Wastewater Treatment Plant Operator's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System	Operation of Wastewater Treatment Plants, Vol. I and II	Basic Electrical Safety \$15; Fall Protection \$15; Flammable Materials Awareness \$15; Lockout/Tagout \$15; Wastewater Treatment Plant Operator C \$300; Chlorine Safety \$15; Confined Space - Awareness Level \$15	The Science of Disinfection \$245			OSHA Permit Required Confined Space Entry classroom \$150	Florida Statute Chapter 62-602 (Operator Certification); 62-600 (Domestic Wastewater Facilities)
Utility Wastewater Plant Operator I - Preparing to become Utility Wastewater Plant Operator II	High School diploma or GED. 2 - 3 years experience in utilities and/or public pump-mechanical operation. Class B Wastewater Treatment Plant Operator's License.			Operation of Wastewater Treatment Plants, Vol. II, Advanced Waste Treatment	Odor Control at Wastewater Treatment Plants \$15; Sodium Hypochlorite \$15	Dissolved Oxygen & Oxidation Reduction Potential Training \$249				62-600 (Domestic Wastewater Facilities)
Utility Wastewater Plant Operator II - Preparing to become Utility Wastewater Plant Operator III	High School diploma or GED. 4 - 5 years experience in utilities and/or public pump-mechanical operation. Class A Wastewater Treatment Plant Operator's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System	Manage for Success, Water and Wastewater		Microbiology of Activated Sludge \$649			Management of Wastewater Facilities I and II (correspondence) \$150 each	62-600 (Domestic Wastewater Facilities)
Utility Wastewater Plant Operator III - Preparing to become Lead Wastewater Operator	High School diploma or GED. 5 - 7 years responsible experience in utilities and/or public pump-mechanical operation to include 2 - 3 years in lead capacity. Class A or B Wastewater License depending on plant size.	Supervisory Training	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction	Utility Management	Stabilizing Chlorine Demand in Wastewater Effluent \$15	Process Control of Advanced Waste Treatment Plants \$549; Activated Sludge Process Control & Troubleshooting \$?		A Crash Course for the First-Time Manager or Supervisor \$149	OSHA Permit Required Confined Space Entry Rescue classroom \$445	62-601 (Plant Monitoring); 62-640 (Biosolids); 62-699 (Treatment Plant Classification and Staffing)
Lead Wastewater Operator - Preparing to become Utility Plant Manager - Operations	B.S. Degree in chemistry, biology, engineering or related field. 8 - 10 years responsible experience in utility operations to include 5 - 7 years in supervisory capacity. Class B Drinking Water License. Class A Wastewater Treatment Plant Operator's License.	Supervisory Training; Records Management	IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management		Water Reclamation & Treatment Processes \$?; Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines #39; For Females: Leadership & Management Skills for Women \$199	Team Building \$?	62-4 (Permits); 62-604 (Collection System and Transmission Facilities); 62-610 (Reuse of Reclaimed Water and Land Application)

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: INDUSTRIAL PRETREATMENT/FOG (FATS, OIL, GREASE) PROGRAMS

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	Fred Pryor Classroom	Mitchell Classroom	FDEP/EPA Rules	Other Classes
Outside the work area - Preparing to become Environmental Technician	High School diploma or GED. Vocational training for type of inspections performed. 3 - 4 years experience in water/wastewater sampling, utilities operation, maintenance or construction. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System						
Environmental Technician - Preparing to become Environmental Coordinator	B.S. Degree Chemistry, Biology or related. 3 - 4 years skilled experience in pre-treatment, wastewater and oil and grease programs. FOG Certificate or Industrial Pretreatment Certificate, minimum C level within 2 years.	Supervisory Training; Records Management		Pretreatment Facility Inspection; Operation of Wastewater Treatment Plants, Volume II, Chapters 11, 12 and 13	Fall Protection \$15; Utility Customer Relations Level 1 \$290 (Note: This class has a 1-day "live" classroom component); Confined Space Awareness Level \$15	Dealing With Difficult People \$149; Basic Supervision \$149; Managing Multiple Priorities Projects and Deadlines \$39	Creating the Life-Long Customer \$150	FDEP: Recommendations for Regulating Fat, Oil and Grease Processing and Biofuel Production Facilities in Florida;	Microsoft Office Suite; Seminole State College: BCN2251C: Building Construction Documents or EGN1111C: Engineering Graphics - Drawing
Environmental Technician - Preparing to become Industrial Pretreatment Coordinator	B.S. Degree Chemistry, Environmental Biology or related field. 3 - 4 years skilled experience in pre-treatment, wastewater and and sewer environmental programs with similar agency.	Supervisory Training; Records Management		Pretreatment Facility Inspection; Operation of Wastewater Treatment Plants, Volume II, Chapters 11, 12 and 13	Utility Customer Relations Level 1 \$290 (Note: This class has a 1-day "live" classroom component); Chlorine Safety \$15; Confined Space - Awareness Level \$15	Dealing With Difficult People \$149; Basic Supervision \$149; Managing Multiple Priorities Projects and Deadlines \$39	Creating the Life-Long Customer \$150	FDEP: Guidance Manual for Pretreatment Programs; FIPA (Florida Industrial Pretreatment Association) Industrial Pretreatment Certification Program	

**VERTICAL TRAINING PLAN
CAREER LADDERS WITHIN PLANT MAINTENANCE**



Note 1: The Environmental Coordinator position is shown on the Career Ladder for Plant Operations because of its similarities with the Industrial Pretreatment Coordinator position.

Note 2: The Equipment Operator IV position is also included in the Career Ladder for Utility Operations because most of the Equipment Operator positions are in that division.

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: ELECTRICAL MAINTENANCE

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	FWPCOA Classroom	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom	Other Courses
From outside this work area - Preparing to become Utility Service Technician I	High School diploma or GED. 1 year experience in manual labor preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System								
Utility Service Technician I Preparing to become Electrical Technician	High School diploma or GED. Vocational/Technical certification in electric work supplemented by 4 - 5 years responsible experience in electrical work preferably in industrial equipment. Journeyman Electrician Certificate within 2 years. Class B Commercial Driver's License within 6 months.			Water Treatment Plant Operator, Vol. I Chapter 10 (Plant Operation) and Vol. II, Chapter 18 (Maintenance); Operation of Wastewater Treatment Plants, Vol. II Chapter 15 (Maintenance)	Basic Electrical Safety \$15; Fall Protection \$15; Flammable Materials Awareness \$15; Lockout/Tagout \$15; Chlorine Safety \$15; Confined Space - Awareness Level \$15	Utilities Maintenance II \$255	Introduction to Electrical Maintenance \$549; SCADA and Electrical Training: What Utility Staff Need to Know \$?				Seminole State College: BCV0604C: Electrician Helper I; Courses to obtain Journeyman Electrician Certificate
Electrical Technician - Preparing to become Instrument Control Specialist	Vocational training in computers and electronics supplemented by 5 - 7 years skilled experience in instrumentation and SCADA systems.	Supervisory Training		Water Treatment Plant Operator, Vol. II, Chapter 19 (Instrumentation); Advanced Waste Treatment, Chapter 9 (Instrumentation)	Utilities Maintenance III \$255					Electric Motor Controls \$175	Seminole State College: BCN2251C: Building Construction Documents or EGN1111C: Engineering Graphics - Drawing
Instrument Control Specialist - Preparing to become Utility Plant Manager - Maintenance	High School diploma or GED. Associate's Degree preferred supplemented by 8 - 10 years experience in utility operations including 5 - 7 years within supervisory capacity. Class B Commercial Driver's License.	Supervisory Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction; IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management and Manage for Success			Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50;	Dealing With Difficult People \$149; Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines	Team Building \$?	Microsoft Office Suite; Cityworks Training

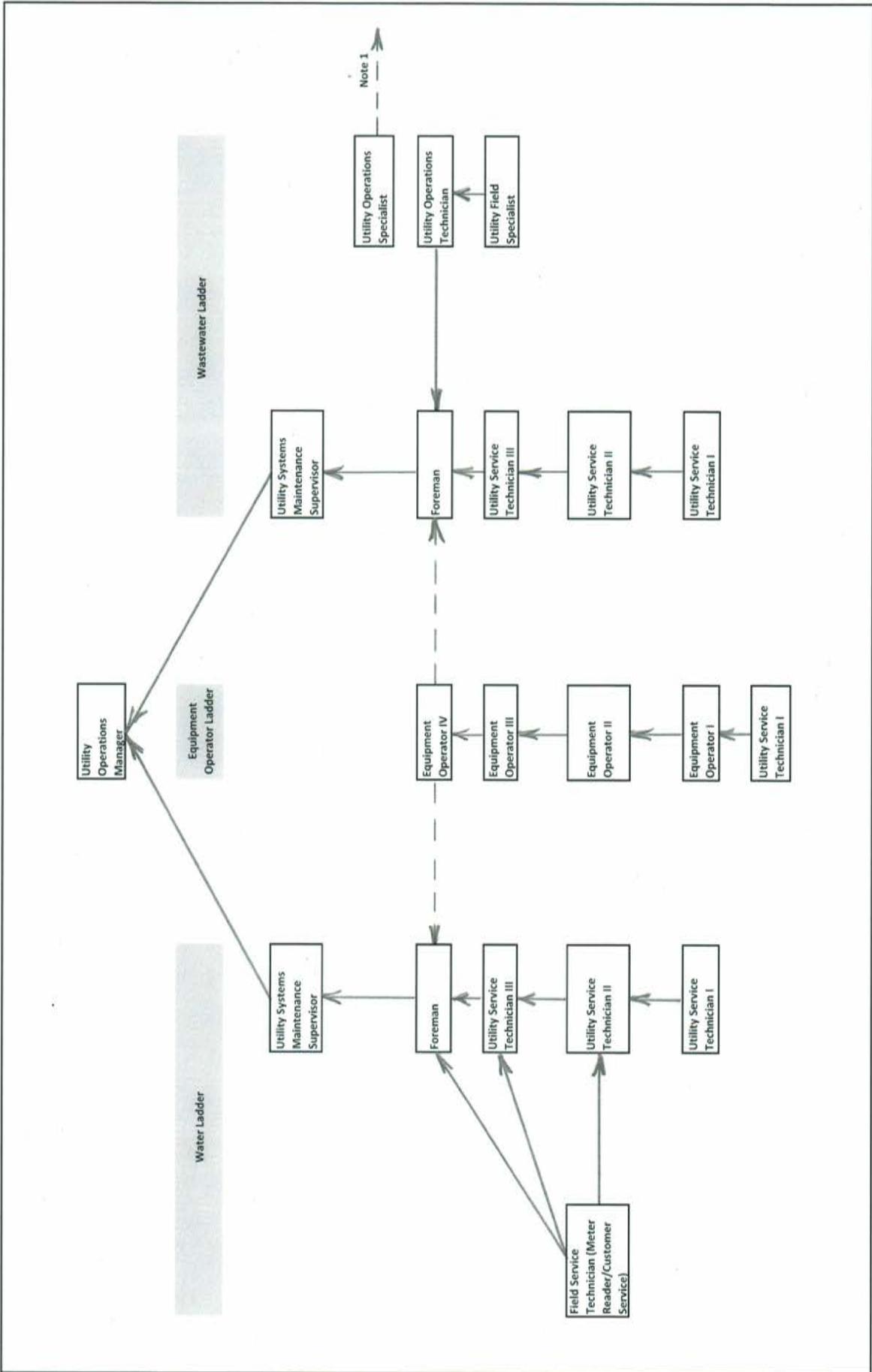
VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: MECHANICAL MAINTENANCE

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	FWPCOA Classroom	TREEO Classroom	TREEO Online	Frey Pryor Classroom	Mitchell Classroom	Other Courses
From outside this work area - Preparing to become Utility Service Technician I	High School diploma or GED. 1 year experience in manual labor preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plan Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System; IS-700 National Incident Management System								
Utility Service Technician I - Preparing to become Utility Plant Maintenance Mechanic	High School diploma or GED. Vocational training and/or certification supplemented by 3 - 4 years responsible experience in manual labor and utilities installations, repairs and operations. Class B Commercial Driver's License.	Supervisory Training		Water Treatment Plant Operation, Vol. I Chapter 10 (Plant Operation) and Vol. II, Chapter 18 (Maintenance); Operation of Wastewater Treatment Plants, Vol. II Chapter 15 (Maintenance)	Fall Protection \$15; Flammable Materials Awareness \$15; Lockout/Tagout \$15; Chlorine Safety \$15; Confined Space - Awareness Level \$15; Trench & Excavation Safety - Awareness \$15	Utilities Maintenance II \$255; Utilities Maintenance III \$255;	Introduction to Lift Station Maintenance \$245; Pumping Systems Operation and Maintenance \$549; Basic Water and Wastewater Pump Maintenance \$249			Mechanical Maintenance C, B and A correspondence \$225 each; OSHA Permit Required Confined Space Entry \$150; OSHA Permit Required Confined Space Entry Rescue \$445; Pump Maintenance and Repair \$265	
Utility Plant Maintenance Mechanic Preparing to become Utility Plant Manager - Maintenance	High School diploma or GED. Associate's Degree preferred supplemented by 8 - 10 years experience in utility operations including 5 - 7 years within supervisory capacity. Class B Commercial Driver's License.	Supervisory Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction; IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management and Manage for Success			Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines	Team Building \$?	Microsoft Office Suite; Cityworks Training

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: LIFT STATION OPERATIONS and MAINTENANCE

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Classroom	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom	Other Courses
From outside this work area - Preparing to become Utility Service Technician I	High School diploma or GED. 1 year experience in manual labor preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System								
Utility Service Technician I - Preparing to become Lift Station Operator	High School diploma or GED. 3 - 4 years responsible mechanical or electrical experience in utilities/lift station operation. Class B Commercial Driver's License.			Operation of Wastewater Treatment Plants, Vol. II Chapter 15 (Maintenance)	Utilities Maintenance II \$255	Basic Electrical Safety \$15; Fall Protection \$15; Flammable Materials Awareness \$15; Lockout/Tagout \$15; Confined Space - Awareness Level \$15	Introduction to Lift Station Maintenance \$245; Basic Water and Wastewater Pump Maintenance \$249	Wastewater Collection Systems \$325		OSHA Permit Required Confined Space Entry \$150; OSHA Permit Required Confined Space Entry Rescue \$445	
Lift Station Operator - Preparing to become Utility Plant Maintenance Mechanic	High School diploma or GED. Vocational training and/or certification supplemented by 3 - 4 years responsible experience in manual labor and utilities installations, repairs and operations. Class B Commercial Driver's License.	Supervisory Training		Water Treatment Plant Operation, Vol. I Chapter 10 (Plant Operation) and Vol. II, Chapter 18 (Maintenance); Operation of Wastewater Treatment Plants, Vol. II, Chapter 15 (Maintenance)		Utilities Maintenance III \$255				Mechanical Maintenance C, B and A correspondence \$225 each	
Utility Plant Maintenance Mechanic - Preparing to become Utility Plant Manager - Maintenance	High School diploma or GED. Associate's Degree preferred supplemented by 8 - 10 years experience in utility operations including 5 - 7 years within supervisory capacity. Class B Commercial Driver's License.	Supervisory Training; Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction; IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Utility Management and Manage for Success				Emergency Preparedness Planning \$50; How to use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; Making the Transition from Staff to Supervisor \$99; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Managing Multiple Priorities Projects and Deadlines	Team Building \$?	Microsoft Office Suite; Cityworks Training

**VERTICAL TRAINING PLAN
CAREER LADDERS WITHIN UTILITY OPERATIONS**



Note 1: The Utility Operations Specialist has the potential to be included within a future technology support group.
Note 2: While this visual does not depict it, there is cross-training among the water and wastewater field personnel.

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: WATER FIELD OPERATIONS

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom or Correspondence	Other Training
From outside this work area - Preparing to become Utility Service Technician I or Field Service Technician	High School diploma or GED. 1 year experience preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System				Water Distribution Systems Operator Level 2 & 3 Training \$325; Water Treatment Plant Operations C-Online \$?			Florida Class B Commercial Driver License Course
Utility Service Technician I or Field Service Technician - Preparing to become Utility Service Technician II	High School diploma or GED. 2 years manual labor experience and utilities installations, repairs and operations. Within 18 months: Water Distribution Operator Level 3 License or Water Treatment Plant Operator Level C License. Possess Class B Commercial Driver's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System	Water Distribution System Operation and Maintenance; Water Treatment Plant Operation, Vol 1 & 2	Fall Protection (on-line) \$15; Water Distribution 3 Online (on-line) \$225; Water Treatment Plant Operator Level C (on-line) \$300; Confined Space - Awareness Level (on-line) \$15; Trench and Excavation Safety - Awareness (on-line) \$15	Water Distribution System Pipes and Valves \$169	Wastewater Collection Systems \$325		OSHA Permit Required Confined Space Entry classroom \$150; Water Distribution C correspondence \$225; Water Meter Installation and Troubleshooting correspondence \$150	Class B Commercial Driver's License course with Tanker Endorsement
Field Service Technician (Meter Reader) or Utility Service Technician II - Preparing to become Utility Service Technician III, Water	High School diploma or GED. 4 years manual labor experience and utilities installations, repairs and operations. Within 18 months: Water Distribution Operator Level 3 License or Water Treatment Plant Operator Level C License. Possess Class B Commercial Driver's License.			Water Distribution System Operation and Maintenance; Collection Systems: Methods for Evaluating and Improving Performance		Asbestos: Cement Piping (ClassII) \$?				Class B Commercial Driver's License course with Tanker Endorsement
Field Service Technician (Meter Reader) or Utility Service Technician III - Preparing to become Foreman, Water	High school diploma or GED. 3 - 4 year experience in area of assignment. 1 year experience in lead capacity in Public Works, Parks and Grounds Maintenance, Leisure Services, Utilities. Licensing and certifications determined by area of assignment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Supervisory Training	ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System	Water Distribution System Operation and Maintenance; Collection Systems: Methods for Evaluating and Improving Performance		Unidirectional Flushing Workshop \$? Water Distribution systems Operator Level 1, \$549; Asbestos Cement Piping (Class II) \$?; Water Distribution system Pipes and Valves \$169; Wastewater Collection Systems \$325	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; How to Deliver Exceptional Customer Service \$179; Basic Supervision \$149; Managing the Transition from Staff to Supervisor \$99; A Crash Course for the First-time Manager or Supervisor \$149;	OSHA Excavation Safety classroom \$150; OSHA Permit Required Confined Space Entry Rescue classroom \$445	Class B Commercial Driver's License course with Tanker Endorsement; Microsoft Office Suite; Cityworks Training; Project Management Course; Introduction to GIS; Florida Statute Chapter 62-550 (Drinking Water Standards and MCL); EPA 141-80 (Lead and Copper Rule)
Foreman (Water) - Preparing to become Utility Systems Maintenance Supervisor	AA or AS degree in Engineering, Management or Public Administration; Water Distribution Operator 2 or Water Treatment Plant Operator C. Class B Commercial Driver's License. Within 18 months: Level 2 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction	Utility Management; Collection Systems: Methods for Evaluating and Improving Performance; Water Treatment Plant Operation, Vol 1 & 2		Water Distribution Systems Operator Level 2 & 3 Training \$649;	Water Distribution Systems Level 2 & 3 \$325; Water Treatment Plant Operations C \$?; Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Managing Multiple Priorities Projects and Deadlines \$39; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Budget Management (Note: a webinar CD ROM) \$199	Water Distribution B correspondence \$225	Class B Commercial Driver's License course with Tanker Endorsement
Utility Systems Maintenance Supervisor (from water side) - Preparing to become Utility Operations Manager	Associate's Degree. 8 - 10 years responsible experience with utility operations management/supervisory positions. Within 18 months: Possess Level 2 Water Distribution Operator or higher License or Water Treatment Plant Operator Class C or higher License.		IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Manage for Success; Operation and Maintenance of Wastewater Collection Systems, Vol. I and II; Collection Systems: Methods for Evaluating and Improving Performance; Water Distribution System Operation and Maintenance; Water Treatment Plant Operation, Vol 1 & 2		Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50		Team Building classroom \$?	

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: WASTEWATER FIELD OPERATIONS

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Classroom	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom or Correspondence	Other Courses
From outside this work area - Preparing to become Utility Service Technician I	High School diploma or GED. 1 year experience preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System					Water Distribution Systems Operator Level 2 & 3 Training \$325; Water Treatment Plant Operations C-Online \$?			Florida Class B Commercial Driver License Course
From outside this work area - Preparing to become Utility Field Specialist	High School diploma or GED. 2 years experience in construction maintenance and repair work. Level 3 or higher Water Distribution License within 18 months of hire. Class B Commercial Driver's License within 6 months of hire. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System					Water Distribution Systems Operator Level 2 & 3 Training \$325;			Florida Class B Commercial Driver License Course
Utility Service Technician I - Preparing to become Utility Service Technician II	High School diploma or GED. 2 years manual labor experience and utilities installations, repairs and operations. Within 18 months: Water Distribution Operator Level 3 License or Water Treatment Plant Operator Level C License. Possess Class B Commercial Driver's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System	Operation and Maintenance of Wastewater Collection Systems, Vol. 1; Water Treatment Plant Operations, Vol. 1 & 2	Water Distribution Level 2 & 3 \$255	Water Distribution 3 \$225; Water Treatment Plant Operator Level C \$300; Fall Protection \$15; Confined Space - Awareness Level \$15; Trench Excavation Safety - Awareness \$15;		Wastewater Collection Systems \$325		OSHA Permit Required Confined Space Entry classroom \$150; Water Distribution C correspondence \$225	Class B Commercial Driver's License course with Tanker Endorsement; Wastewater Collection C License courses; Intermediate MOT course
Utility Service Technician II - Preparing to become Utility Service Technician III, Wastewater, and Utility Field Specialist - Preparing to become Utility Operations Technician	High School diploma or GED. 4 years manual labor experience and utilities installations, repairs and operations. Within 18 months: Water Distribution Operator Level 3 License or Water Treatment Plant Operator Level C License. Possess Class B Commercial Driver's License.			Operation and Maintenance of Wastewater Collection Systems, Vol. 1; Water Treatment Plant Operations, Vol. 1 & 2			Asbestos: Cement Piping (Class II) \$?				Class B Commercial Driver's License course with Tanker Endorsement; Wastewater Collection B License courses; Intermediate MOT course
Utility Service Technician III and Utility Operations Technician - Preparing to become Foreman, Wastewater	High school diploma or GED. 3 - 4 year experience in area of assignment. 1 year experience in lead capacity in Public Works, Parks and Grounds Maintenance, Leisure Services, Utilities. Licensing and certifications determined by area of assignment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Supervisory Training;	ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System	Water Distribution System Operation and Maintenance; Collection Systems: Methods for Evaluating and Improving Performance;		Wastewater Collection System Maintenance \$75	Wastewater Collection Systems \$325	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; How to Deliver Exceptional Customer Service \$179; Basic Supervisor \$149; Managing the Transition from Staff to Supervisor \$99; A Crash Course for the First-time Manager or Supervisor \$149;	OSHA Excavation Safety classroom \$150; OSHA Permit Required Confined Space Entry Rescue classroom \$445;	Class B Commercial Driver's License course with Tanker Endorsement; Microsoft Office Suite; Cityworks Training; Project Management Course; Introduction to GIS; Wastewater Collection A License courses; Intermediate MOT course
Foreman (Wastewater) - Preparing to become Utility Systems Maintenance Supervisor	AA or AS degree in Engineering, Management or Public Administration; Water Distribution Operator 2 or Water Treatment Plant Operator C. Class B Commercial Driver's License. Within 18 months: Level 2 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Records Management	IS-200 ICS for Single Resources and Initial Action Incidents; IS-800 National Response Framework, An Introduction	Utility Management; Collection Systems: Methods for Evaluating and Improving Performance				Water Distribution Systems Level 2 & 3; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Managing Multiple Priorities Projects and Deadlines \$39; Leadership, Team-Building and Coaching Skills for Managers and Supervisors \$249; Budget Management (Note: a webinar CD-ROM) \$199	Water Distribution B correspondence \$225	Class B Commercial Driver's License course with Tanker Endorsement
Utility Systems Maintenance Supervisor (from wastewater side) - Preparing to become Utility Operations Manager	Associate's Degree. 8 - 10 years responsible experience with utility operations management/supervisory positions. Within 18 months: Possess Level 2 Water Distribution Operator or higher License or Water Treatment Plant Operator Class C or higher License.		IS-300 Intermediate ICS for Expanding Incidents and IS-400 Advanced ICS	Manage for Success; Operation and Maintenance of Wastewater Collection Systems, Vol. 1 and II; Collection Systems: Methods for Evaluating and Improving Performance; Water Distribution System Operation and Maintenance; Water Treatment Plant Operations, Vol. 1 & 2			Effective Utility Leadership Practices \$549	Emergency Preparedness Planning \$50; How to Use FlaWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50		Team Building classroom \$?	

VERTICAL TRAINING PLAN
CAREER LADDER TRAINING COURSES: EQUIPMENT OPERATOR

Position	Position Requirements Summary (see official Job Descriptions for all Requirements)	Sanford Classes	FEMA Courses	California State University Manual	FWPCOA Online	TREEO Classroom	TREEO Online	Fred Pryor Classroom	Mitchell Classroom	Additional Courses
From outside this work area - Preparing to become Utility Service Technician I	High School diploma or GED. 1 year experience preferably in utilities or related. Level 3 or higher Water Distribution System Operator License or Class C or higher Water Treatment Plant Operator License within 1.5 years of employment. Class B Commercial Driver's License within 120 days of employment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System				Water Distribution Systems Operator Level 2 & 3 Training \$325; Water Treatment Plant Operations C-Online \$7			Florida Class B Commercial Driver License course.
From outside this work area - Preparing to become Equipment Operator I	High School diploma or GED supplemented by 6 - 11 months related work experience and ability to perform labor intensive work. Possess Class B Commercial Driver's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System							
Utility Service Technician I - Preparing to become Equipment Operator I	High School diploma or GED supplemented by 6 - 11 months related work experience and ability to perform labor intensive work. Possess Class B Commercial Driver's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System		Chlorine Safety - Awareness (on-line) \$15; Trench and Excavation Safety - Awareness (on-line) \$15					Florida Class B Commercial Driver License course with Tanker Endorsement; Manuals applicable to the type of equipment to be operated; Defensive Driving; Maintenance of Traffic (MOT); Water Distribution Operator 3 recommended
Equipment Operator I - Preparing to become Equipment Operator II	High School diploma or GED. 2 years experience in equipment operation and ability to perform labor intensive work. Must possess Class B Commercial Driver's License.									Florida Class B Commercial Driver License course with Tanker Endorsement; Manuals applicable to the type of equipment operated; Defensive Driving; Maintenance of Traffic (MOT)
Equipment Operator II - Preparing to become Equipment Operator III	High School diploma or GED. 3 - 4 years experience in equipment operation and ability to perform labor intensive work. Must possess Class B Commercial Driver's License.									Florida Class B Commercial Driver License course with Tanker Endorsement; Manuals applicable to the type of equipment operated; Defensive Driving; Maintenance of Traffic (MOT)
Equipment Operator III - Preparing to become Equipment Operator IV	High School diploma or GED. 5 - 7 years experience in equipment operation and ability to perform labor intensive work. Must possess Class B Commercial Driver's License. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.		ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System							Florida Class B Commercial Driver License course with Tanker Endorsement; Manuals applicable to the type of equipment operated; Defensive Driving; Maintenance of Traffic (MOT)
Equipment Operator IV - Preparing to become Foreman	High school diploma or GED. 3 - 4 year experience in area of assignment. 1 year experience in lead capacity in Public Works, Parks and Grounds Maintenance, Leisure Services, Utilities. Licensing and certifications determined by area of assignment. ICS-100 Introduction to Incident Command System within 6 months; IS-700 National Incident Management System.	Supervisory Training	ICS-100 Introduction to Incident Command System within 6 months of employment; IS-700 National Incident Management System	Water Distribution System Operation and Maintenance; Collection Systems; Methods for Evaluating and Improving Performance		Unidirectional Flushing Workshop \$7; Water Distribution Systems Operator Level 1 \$549; Asbestos; Cement Piping (Class II) \$7; Water Distribution System Pipes and Valves \$169; Wastewater Collection Systems \$325;	Emergency Preparedness Planning \$50; How to use FlatWARN \$50; Conducting Post Hurricane and Tornado Assessments \$50	Dealing With Difficult People \$149; How to Deliver Exceptional Customer Service \$179; Basic Supervision \$149; Managing the Transition from Staff to Supervisor \$99; A Crash Course for the First-time Manager or Supervisor \$149;	OSHA Excavation Safety classroom \$150; OSHA Permit Required Confined Space Entry classroom \$150; OSHA Permit Required Confined Space Entry Rescue classroom \$445;	Florida Class B Commercial Driver License course with Tanker Endorsement; Microsoft Office Suite; Introduction to GIS; Florida Statute Chapter 62-550 (Drinking Water Standards and MCLs); EPA 141-80 (Lead and Copper Rule)