



AMERICAN WATER COLLEGE

# Job Specific Training Plan

A STEP-BY-STEP GUIDE

*You can do it!*

## ABOUT THE AUTHOR

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Joe Kerschner has a diverse professional background including management of departments and programs in both public and private sectors. His background includes six years of military service during which he served as an instructor at the Idaho National Engineering Laboratory, where he taught reactor plant operations, radiological control procedures and radiochemistry to U.S. Navy personnel. Following military service, he has worn many hats within the water and wastewater field, including the position of Laboratory/Safety/Training Director for CH2MHill's contract operations department. In addition, he has held other supervisory positions—Senior Chemist for the Central Coast Water Authority and Water Quality Supervisor at the Palmdale Water District in Southern California. Since 2006, Joe has served as President of the American Water College, where he has directed the creation of training programs designed to help professionals in the water/wastewater field achieve their career goals. Under his leadership, American Water College has grown into the leading online training provider to the water and wastewater industry, with student enrollment spanning all 50 states.

*Joe Kerschner*



## JOB SPECIFIC TRAINING PLAN

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**TrainingHub**  
AMERICAN WATER COLLEGE



## JOB SPECIFIC TRAINING PLAN

# Prologue

### Day One at Midtown Water Treatment Plant

*It was Jim's first day at the Midtown Water Treatment Plant. After successfully passing a pre-employment written exam, two rounds of interviews and a host of other pre-employment physical and medical tests and examinations, he spent two days with HR and safety managers getting "oriented." He then reported to the operations supervisor for his first real day on the job.*

*Jim was excited to get going and to begin learning. He was hired into an entry-level position. The job posting read: "No experience necessary. Will train successful candidate in the operation and maintenance of our water treatment plant." Since there was a shortage of licensed and qualified operators, competition for experienced operators was intense. The Midtown Water Treatment Plant decided to hire entry-level operators and train them to operate the plant. This is Jim's story.*

*Jim reported for duty to the treatment plant supervisor's office at 8 o'clock sharp. Curtis, (the supervisor) told Jim to have a seat and he would be with him in a few minutes, once he finished going through his email Inbox. After what seemed like an eternity, Curtis directed his attention back to Jim, telling him that he would be working with Bob for the first three months, and that his main job would be to shadow Bob to learn as much as he could. After working with Bob for three months, Jim would then work with Kelly for three months, then with Cody for three months. To complete his training, Jim would be paired with Rick (senior operator at the plant) for three months to fill in any knowledge or skill gaps left by on-the-job trainers Bob, Kelly or Cody.*

*At 8:30 a.m., Curtis introduced Jim to Bob—telling Bob that Jim would be shadowing him for the next few months and asking Bob if he wouldn't mind showing Jim the ropes. Bob replied with a stern glare and muttered, "Sure, but why are you putting him with me and not Rick?" Curtis replied, "He'll be shadowing Rick also, but I wanted him to start by shadowing you." Bob responded, "Okay, but I have a lot to get done, so I don't know how much training or talking I can do, but sure, I'll let the new guy tag along and pick up what he can."*

*Jim knew his first day at the plant would be rough, but this was worse than he'd feared.*

## JOB SPECIFIC TRAINING PLAN

# Introduction

This book is written for the team leader who understands that putting forth concentrated effort and resources at the outset of a project will set the stage for continual future success.

“*Mile by mile, it’s a trial; yard by yard, it’s hard; but inch by inch, it’s a cinch.*

UNKNOWN

I have one objective—and one objective only—for this book. I want to make your life easier by giving you a simple to follow, no nonsense, step-by-step process for quickly training your team (new team members and experienced team members alike) to a high level of competence in the shortest time possible. Once this program is in place, it should require minimal effort on your part.

This is not an academic or theoretical exercise. This is a how-to guide for the people in the trenches day in and day out. If you will apply the information presented in this book, I can assure you that your team will function better, and your role as a team leader will be immensely easier!

If you enjoy learning about the next new management or leadership theory, but aren’t willing to put forth the effort or resources required to make a positive change, then this book is not for you. This is written for the team leader who understands that by putting forth concentrated effort and resources at the outset of a project, that will set the stage for continual future success. Yes, it’ll take some work to get things going, but the long-term benefits are *huge*.

I want only the best for you and your department. After all, the work you do directly impacts public health and the quality of life of the people in your town—improving the overall quality of life and public health in this great country of ours. By following the process laid out in this book in developing a comprehensive training program for your staff, we are creating a win-win situation. Your life as the boss gets easier, while at the same time, you improve and sustain the overall public health and quality of life for the public you serve.

Recent and very public failures in water and wastewater systems highlight the fact that the level of knowledge and job specific competence possessed by operators and staff must be raised. For too long, the bar has been set too low. This book is intended to help change that by outlining a process that can be used by water and wastewater utilities—large and small—to transform the level of performance of water and wastewater utility team members. It’s my sincere hope that you will take the information presented in this book to heart and apply it to your team. Together, we can make a series of changes that will have an enormous impact in our teams, our plants, our communities, our country and our world.





*“It is literally true that you can succeed best  
and quickest by helping others succeed.”*

NAPOLEON HILL

CHAPTER 1

# Who will benefit?

## JOB SPECIFIC TRAINING PLAN

# 1: Who will benefit?

### Day One at Midtown Water Treatment Plant, continued

*Jim watched the exchange between Curtis and Bob, feeling disheartened. Never had he felt like more of an inconvenience than he did right then. The job posting sounded like if he showed up and put forth effort, he'd be trained to do the job. Right now, it felt like he was being paid to be babysat, and if he learned anything while following grumpy Bob around, that was a bonus. Should it really take a whole year of shadowing four different operators to learn the basics?*

*Jim knew he probably shouldn't ask Bob. Maybe the first three months would go better if he kept his head down, and then he could just ask Kelly later.*

Who can benefit from a Job Specific Training Plan? At first glance, it may seem like there are two correct answers to this question—the new employee and the person responsible for training the new employee (Jim and Bob). Although both answers are correct, and these are probably the most immediate and direct beneficiaries of a properly developed Job Specific Training Plan, the benefits of implementing a program such as this extends far beyond the direct users of the program. Let me explain.

When a department has a group of highly-trained, highly-skilled team members all pulling in the same direction and working toward a common goal, the results are astounding. If you make it a priority to have a uniform program for training in place, your team will be transformed. A team that has been trained to a high degree of competence will work more efficiently and cohesively than a team made up of individuals doing their own thing in their own way. I'm sure you have seen (and can relate) to what I'm talking about.

A team made up of members who have all been trained to the same high level of competence is like a finely tuned, well-oiled machine that operates without trouble. This benefits the department itself, the overall organization and ultimately, the customer.

One of the oft overlooked benefits of a training program is morale. Having a training program in place will greatly improve your team morale. How can I say that? Let me ask you this: if you have a group of individuals, some of whom are very competent and some of whom are not as competent, all getting paid the same because they are expected to do the same job, how is morale in that department?



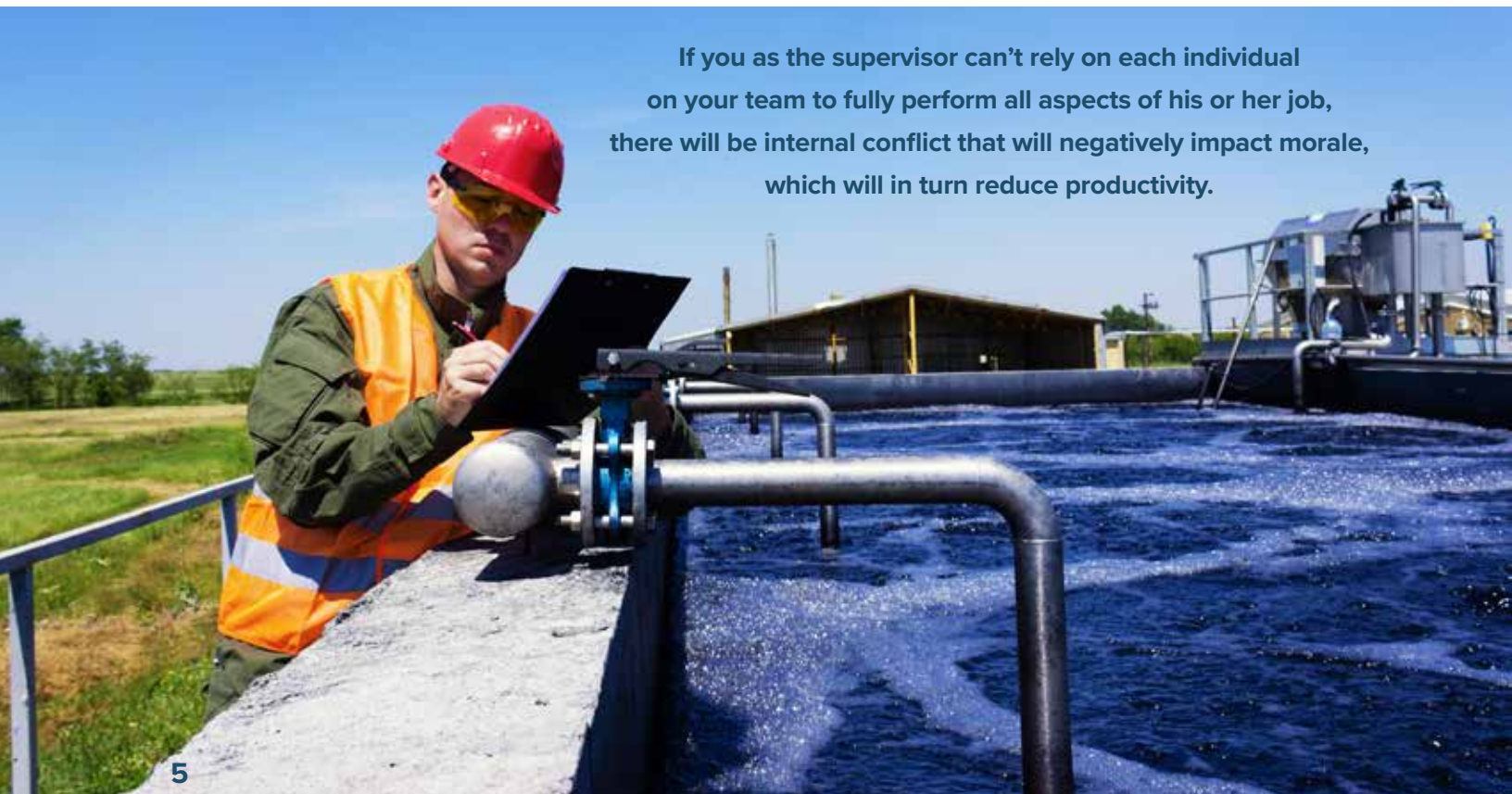
If you as the supervisor can't rely on each individual on your team to fully perform all aspects of his or her job, there will be internal conflict that will negatively impact morale, which will in turn reduce productivity. It is important to hold each team member accountable to the same expectations, but this assumes that you have communicated the expectations you will hold them to. In developing a Job Specific Training Plan, you are creating goals for your employees to work toward, while clearly and effectively communicating your expectations to your department.

A water or wastewater utility is made up of multiple departments. If your department is functioning properly like that finely-tuned and well-oiled machine I just referred to, it will serve as a model or an example for other departments to follow. Your department will in effect be raising the performance bar within your organization. When every department within the water and wastewater utility are functioning at a high level, overall organizational efficiency will improve.

This in turn benefits the customer through improved customer service. It also benefits the customer through the efficient operation and maintenance of the utility, which translates into stable utility rates. As a steward of public facilities, it is the water and wastewater utility's responsibility to operate and maintain these facilities in the most competent and efficient manner. This is what the rate-paying public expects.

As a result, not only will you benefit directly from using a Job Specific Training Plan to train your team, but your new team members will benefit, your existing team members will benefit, your organization will benefit, and your customers will benefit. It's a win all the way around!

**If you as the supervisor can't rely on each individual on your team to fully perform all aspects of his or her job, there will be internal conflict that will negatively impact morale, which will in turn reduce productivity.**







## CHAPTER 2

# What is a Job Specific Training Plan?

“By failing to prepare, you are preparing to fail.”

BENJAMIN FRANKLIN

## JOB SPECIFIC TRAINING PLAN

# 2: What is a Job Specific Training Plan?

### Day One at Midtown Water Treatment Plant, continued

*“So, what do you want to know?”, Bob asked. Jim looked around and tried to think of a good question to ask. He’d aced his exams, but the material he studied was all generic. “Show me how your day typically goes at this plant. What’s the first thing you do in the morning?”*

*Bob replied, “I make the coffee. No one else here makes it strong enough. Nothing worse than fixing the night shift’s mistakes on weak coffee.”*

A Job Specific Training Plan is a written document that contains all the knowledge and skills an individual must possess to competently perform all aspects of a given job or position. It acts as a training guide that directs team members in the training process, ensuring that all aspects of the job are covered, while documenting the progress and completion of the training. It is an objective goal that ensures all team members are trained in the same manner, with the same information, to the same level of competence.

Over the years in my water and wastewater career, I had the opportunity to work for three different utilities. I discovered that every supervisor I talked to did not enjoy losing a qualified team member because of the time and work involved with hiring and training a new staff member. This was not only true with supervisors, but team members themselves did not like dealing with a new team member who was not up to speed on the specifics of how things were done within the department—an attitude consistent across all departments. Operations, maintenance, customer service, accounting and billing, engineering...no one was excited to train a new team member.

Another thing I discovered was that the timeframe estimated for getting that new team member to the point where they could be full contributors to the team ranged from one to three years, depending upon the department and specific job function.

When I suggested that a new team member should be contributing to the bottom-line work of the department (on their own, with minimal direct supervision) within the first two weeks of employment, most of my peers thought I was crazy. They thought I was even more delusional when I suggested that by having a Job Specific Training Plan to guide the training process, the overall training timeframe could be cut by as much as 70%. What used to take three years could be accomplished in one.

In addition to greatly reducing the time required to get a new team member up to speed, the level of knowledge and skill would be higher than by following the traditional training methods used by most water and wastewater utilities. Remember Jim, our entry-level operator “No experience required” trainee? His first interaction with the supervisor was to wait until the supervisor was finished clearing out junk mail in his Inbox. Then the supervisor gave him broad, general instructions, a framework of what to expect for the next year, and introduces Jim to Bob. Bob grumps about his assignment, grumps to Jim about the coffee, and expects Jim to know what he needs to know.

And so it goes, the stage has been set and the message has been communicated to Jim. There is no real training program in place for the new employee, and he is a nuisance to his trainer, Bob.

I don’t think I need to go further in this scenario, since I am guessing you’re familiar with it and how it goes, but let me take a little time to discuss problems that I see with this form of on-the-job training, and how it can be fixed by the use of a Job Specific Training Plan.

**The fact is, most people go to work to perform a job, not to train other people how to do their job. This comes through loud and clear when a busy employee is asked to take time out of his or her workday to handhold and teach an inexperienced employee.**

## Problems with the OJT Shadowing Approach

There are many problems with this approach to training new team members, but perhaps the biggest problem in the short term is the potential to negatively shape a new team member’s attitude toward the work group and the organization. The fact is, most people go to work to perform a job, not to train other people how to do their job. This comes through loud and clear when a busy employee is asked to take time out of his or her workday to handhold and teach an inexperienced employee. The message this sends to the new employee is, “We are not an organization that invests in the development of our staff.” What else is the new employee to conclude when the water or wastewater utility does not have a formal onboarding and training program that will help that new employee get acclimated and up to speed on the way things are done at your organization?

Now, beyond missing the opportunity to make a great first impression on a new team member and begin building loyalty by investing in the new team member’s professional development, there are several other problems with this approach. I will simply list them and not take the time to expand upon them. I will leave that to you.

1. Bad habits passed on to new team member
2. Incorrect information passed on to new team member
3. Confusion is created since there is no clearly defined goal (each team member has their own way of doing things and therefore teaches new team member their way of doing it)
4. Incomplete knowledge passed along
5. Incomplete skill-set developed
6. Time to fully train new team member to a level of fully competent autonomous worker is years rather than months

There are more problems and limitations with this approach, but I think you get the idea.



Now let's compare Jim's experience at the Midtown Water Treatment Plant to John's first day at the Edge-of-Town Wastewater Treatment Plant.

## Day One at the Edge-of-Town Wastewater Treatment Plant

*At 8:00 a.m., John reported to the treatment plant supervisor's office where he was enthusiastically greeted by Chris, the treatment plant supervisor. Chris spent 15 minutes talking with John about the great team that works at the Edge-of-Town Wastewater Treatment Plant. He painted a picture of a well-functioning organization that takes pride in its work, and that has fun in the process. After taking the time to build up the team that John was about to become part of, the conversation shifted to John's responsibilities, and what Chris expected from him in order to become an integral part of the team. Chris explained that although he and the other team members would do everything they could to help him succeed in his new job, it was John's responsibility to learn all of the information and skills required to do the job competently.*

*Chris then handed John his Wastewater Operator 1 Training Plan and began to explain how the training process worked. He emphasized to John that all the resources necessary to learn how to be a successful wastewater treatment plant operator were available to him, but it was his responsibility to take advantage of those resources and the plan laid out for him to develop into a highly-skilled wastewater treatment plant operator.*

*At 8:30, Chris made a phone call to David and asked him to come meet their newest team member. David was a qualified operator and was authorized by Chris to perform knowledge check discussions and to sign the Training Plan once new employees had demonstrated an acceptable level of knowledge and competence for a particular section. David would act as John's guide as he worked through the operator qualification process.*

*When David arrived, he enthusiastically introduced himself to John and told him how happy he was to have him join the team. He then told John that he would be available to answer any questions he had regarding the Training Plan and the various aspects of the wastewater operator job position. He gave him his cell number and said, "You can call or text me anytime, I am here to help. If I can't help you, I will put you in touch with somebody who can. Welcome to the team."*

Now let me ask you a question. If you know nothing else about either organization, which one would you prefer to work for? At the risk of sounding cliché, you never have a second opportunity to make a first impression. You might as well start off on the right foot, put your best foot forward...and all those other common sayings that emphasize the importance of getting off to a good start. However, this is only the beginning. After making a good first impression, there needs to be a solid training plan in place that will guide your new team member from a position of inexperience to a place where he or she is a highly-skilled contributor to the overall operation of the team. This does not happen by accident, this only happens through the development and delivery of a solid training plan.

In chapter 6, I will give you a step-by-step process you can use to create your own Job Specific Training Plan, but before we get to that, I feel the need to address one of the biggest roadblocks that prevents water and wastewater utility managers and supervisors from creating a comprehensive job specific training program. What is that roadblock? *Lack of time.*







*“There’s never enough time to do it right,  
but there’s always enough time to do it over.”*

JACK BERGMAN

## CHAPTER 3

# When will I have time to create one?



## Meanwhile, back at Midtown Water Treatment Plant:

*Click. Click. Click. Scroll...click...delete. Curtis sighed as he dealt with the never-ending barrage of time-sucking emails. His Inbox was filled with everything from equipment advertisements, to requests for information from his boss, to safety alerts. And it looked like he'd accidentally subscribed to the Forestry Department's tourist email list. How did that happen?*

*In just a few minutes, Curtis had a conference call followed immediately by another meeting. 'In the afternoon is a tour for school kids...never enough time in my day. I guess I can read most of the email while I'm on the call...that one from the city administrator looked important...'*

*Curtis was caught in the trap of dealing with the urgent demands for his time, while not prioritizing what should be the important use of his time. He was always playing catch-up, never taking control and properly managing his time.*

I've included this chapter, because in my travels around the country to many water and wastewater utilities, I have discovered that the number one reason they don't have Job Specific Training Plans in place is the time requirement involved to develop a program. I have not met a single person who has argued that their organization would not benefit from a formalized training process, and therefore consider a Job Specific Training Plan an unnecessary waste of time. They have all acknowledged that they and their organization would greatly benefit from such a plan. However, they immediately start to explain how they don't have the time, nor do their team members to stop fighting fires they face on a daily basis to produce such a document.

From where I sit, I can see three options to solve this problem. **Option 1** involves carving out time each day from your schedule (and from the schedules of your team members) to collaborate on the creation of a Job Specific Training Plan. It has been my experience that this approach gets off to an enthusiastic start, but rarely is seen through to completion. This is due to the unfortunate circumstance that many utilities face, which requires them to accomplish more work with fewer human resources than in the past.

**Option 2** is to use some of your department's financial resources to pay an outside organization to assist in the creation of a Job Specific Training Plan. This option solves the lack of time problem, however the result is a generic, one-size-fits-all document. Although this is better than no program at all, it pales in comparison to the results that can be obtained by employing the third option.

**Option 3** is a combination of options 1 and 2, where you and your team collaborate with an outside organization to develop a comprehensive training program. This option capitalizes on the benefits of options 1 and 2—you get the best of both options. The time it takes to develop the program is reduced due to the experience and guidance of the third party, while the site-specific aspects of the training program are inserted by your staff to complement the industry standard training points provided in the third party's document.

Allow me to introduce you to American Water College and the training platform it provides to water and wastewater utilities around the country.

## TrainingHub


**TrainingHub** is a training creation, delivery, and management system that enables water and wastewater utilities to create and automatically deliver and track job specific training. Utilities using this platform have unlimited access to 10 separate libraries containing hundreds of hours of professional development, water and wastewater training that is accessible to staff 24/7. In addition to preloaded training, utilities can add their own training into the system for automatic delivery.

You can see that by building upon a platform that is preloaded with the common body of knowledge for the industry—and is designed specifically for the water and wastewater industry—you can quickly and easily be up and running with your Job Specific Training Plan in a matter of weeks, not months or even years (as is the case with some organizations). In fact, some organizations have been talking about it for years and are no closer to having a working program then they were when the discussions began. Isn't it time that you simplified your job and created your own utility specific training program?

Go to [www.traininghub.org](http://www.traininghub.org) to check out this amazing resource that can put you on the fast track to creating, delivering and managing your department's training program.







*“You have all the tools and resources you need.  
What you do with them is up to you.”*

CHERIE CARTER-SCOTT

## CHAPTER 4

# Where will I find the information required?



## Day 21 at Midtown Water Treatment Plant:

*“Hey, Jim?” Curtis said as he called the new guy over, “You’re probably getting familiar with a lot of this, but here.” He handed two thick, floppy manuals to Jim. “These will help you figure out how things run around here,” he added.*

*“Thanks,” Jim said, as he took the manuals. Where were these three weeks ago?*

There are many resources available to you that can serve as a knowledge base for the development of your Job Specific Training Plan. Some of these resources are available through:

- Water and wastewater training providers
- Computer application training providers
- Software documentation and tutorials
- Plant or system operation and maintenance manuals
- Industry Standards

I want to spend a little time to explore each of these to help you discover resources available to you when putting together a Job Specific Training Plan. Don’t assume that you have to be the expert on all aspects of the training plan. Use resources that are available to expedite the creation of the training plan, as well as to improve the overall quality of the training plan.

## Water and Wastewater Training Providers

As mentioned at the conclusion of the last chapter, one possible resource is the training produced by American Water College. This program is great for initial training and orientation to give your team members a solid knowledge base on which to build their specific job knowledge at your specific utility. You don’t have to produce and deliver all of the training alone. There is a lot of good training already produced you can use as part of your Job Specific Training Plan.

## Computer Application Training Providers

It is important for everyone working at a water or wastewater utility to have basic computer skills. Microsoft Office is the standard software used at most utilities, and team members should have the ability to use basic Microsoft Office applications. It’s a good idea to make some basic application training part of any Job Specific Training Plan. This training is available online from various organizations.

American Water College offers Microsoft Office training as part of its [TrainingHub](#) library of course offerings.

## Software Documentation and Tutorials

If the job requires the use of specialized software (for example: SCADA, GIS or CityWorks), utilize the software documentation or the tutorials offered by the software company as part of the training plan.

**Tip:** Use a training delivery platform that allows the integration of third party videos and documentation, such as the [TrainingHub](#) platform. This will allow you to house, deliver and monitor the training program within the same system.

## Plant or System Operation and Maintenance Manuals

Water and wastewater treatment plants, wastewater collection systems, and water distribution systems have operation and maintenance manuals as well as as-built drawings that should be referenced in the Job Specific Training Plan. These documents will likely serve as the main information source for the system specific training for water and wastewater system operators.


**Don't assume that you have to be the expert on all aspects of the training plan. Use resources that are available to expedite the creation of the training plan, as well as to improve the overall quality of the training plan.**

## Industry Standards

Another obvious resource includes industry standards. This includes standards produced by the American Water Works Association, as well as other professional associations and organizations dealing with the water and wastewater industry.

These are just a few of the resources that are available to you, and there are many others that I'm sure you are aware of. It is well worth your time to make a list of all the written documentation—whether in hard copy or digital format—that your team members can go to for information relating to their job. This list of reference material will serve as the knowledge base for you to direct your team members to in the Job Specific Training Plan.





*“Is there anyone so wise as to learn  
by the experience of others?”*

VOLTAIRE

CHAPTER 5

# Why should I listen to you?

That's a legitimate question. Why *should* you listen to me? My simple answer is that I have seen firsthand the transformational power of using a Job Specific Training Plan to train team members in the departments I've managed at both water and wastewater utilities. I have also taught this process to my peers who have used it with great success as well. So in short, you should listen to me because I know it works!

However, for the skeptics, or the people who require additional reasons beyond "Because I said so," here are a few more.

## **We are an Industry Governed by Standards**

Water and wastewater utilities are governed by regulation and standards in virtually every aspect of the business. To make my point, here's a list a various standards and standard creation organizations that govern the activities of a typical water or wastewater utility:

### **American Water Works Standards**

There are more than 180 AWWA standards outlining minimum requirements for the design, manufacture, installation, and performance of equipment and products used by drinking water systems. Many state water codes require that system design operation and maintenance is conducted in accordance with the established AWWA Standards. Recently-created standards even include best management practices within a water and wastewater utility (AWWA G410-09 Business Practices for Operation and Management)

### **NSF 60 Standards**

Developed by a team of scientists, industry experts and key industry stakeholders, NSF/ANSI/CAN 60 sets health effects criteria for many water treatment chemicals including:

- Corrosion and scale inhibitors
- Coagulants and flocculants
- Disinfection and oxidation chemicals
- pH adjustment, softening, precipitation and sequestering chemicals
- Well drilling aids
- All other specialty chemicals used in drinking water treatment

### **NSF 61 Standards**

Developed by a team of scientists, industry experts and key industry stakeholders, NSF/ANSI/CAN 61 sets health effects criteria for many water system components including:

- Protective barrier materials (cements, paints, coatings)
- Joining and sealing materials (gaskets, adhesives, lubricants)
- Mechanical devices (water meters, valves, filters)
- Pipes and related products (pipe, hose, fittings)
- Plumbing devices (faucets, drinking fountains)
- Process media (filter media, ion exchange resins)
- Non-metallic potable water materials



## **ASCE Standards**

ASCE Standards provide technical guidelines for promoting safety, reliability, productivity, and efficiency in civil engineering. Many of our standards are referenced by model building codes and adopted by state and local jurisdiction. They also provide guidance for design projects around the world.

## **ASME Standards**

ASME is one of the oldest standards-developing organizations in America. It has produced approximately 600 codes and standards covering many technical areas such as fasteners, plumbing fixtures, elevators, pipelines, and power plant systems and components.

## **ASSE Standards**

Founded in 1911, the American Society of Safety Engineers (ASSE) is the world's oldest professional safety society. ASSE promotes the expertise, leadership and commitment of its members, while providing them with professional development, advocacy and standards development. It also sets the occupational safety, health and environmental community's standards for excellence and ethics.

## **NELAC Standards**

NELAC standards are developed and used for the National Environmental Laboratory Accreditation Program (NELAP) for laboratory accreditation. NELAP relies on consensus standards representing the best professional practices in the industry to establish the requirements for this program, which is then implemented by state agencies recognized by The NELAC Institute as Accreditation Bodies.

## **GAAP**

Generally Accepted Accounting Principles (GAAP) refer to a common set of accepted accounting principles, standards, and procedures that water and wastewater utilities must follow when they compile their financial statements.

I think you get the picture. Most everything we do in the water or wastewater industry is governed by a standard. Did you know that there's even a training standard? It's true, there is. The International Association of continuing education trainers (IACET) collaborated with the American National Standards Institute (ANSI) and developed a training standard intended to ensure the development and delivery of high-quality training.

American Water College is an IACET/ANSI training provider, which means that all the training we produce is developed by using best practices established by this standard.

So it just makes sense for water and wastewater utilities to develop a customized, but uniform training program to meet those standards to train their staff.

If by now, I haven't convinced you that a consistent approach to training your staff is the best way to ensure that your entire team is competent in their job, let me offer you a personal testimonial of how this form of training works.

## My Personal Testimony

I was blessed early on in my career to be part of what I consider one of the world's best training programs. After graduating from high school, I enlisted in the U.S. Navy and was trained in the Naval Nuclear Power Program. This program was basically divided into two parts. The first part was a period of classroom instruction dealing with the general theory of nuclear power and how it is used to provide all the power needs for certain ships within the Navy's fleet. Classroom instruction covered a wide range of topics that gave me as a student a good theoretical background of the design, construction, and operation of a nuclear power plant. I studied mathematics, physics, chemistry, radiological controls, reactor core design, hydraulics, thermodynamics, metallurgy and other topics relating to the design and operation of a nuclear power plant. We were required to have a solid understanding of the theory behind an operational nuclear power plant before we were allowed to begin the second phase, on-the-job training.

**This is huge, since it doesn't overburden your existing staff with the responsibility of training a new team member. The new team member is responsible for learning the job—you and the team are responsible for making the resources available so that the new team member can be successful in learning the job.**

The second phase of training was accomplished at the prototype of the first nuclear submarine in the Navy's fleet, the *USS Nautilus*. This was an operational nuclear power plant that was initially used to prove the concept that such a reactor could work to power a submarine. By the time I arrived to receive my training at this prototype, it had been in operation for more than 30 years, and was used as a "hands-on" trainer for operators in training.

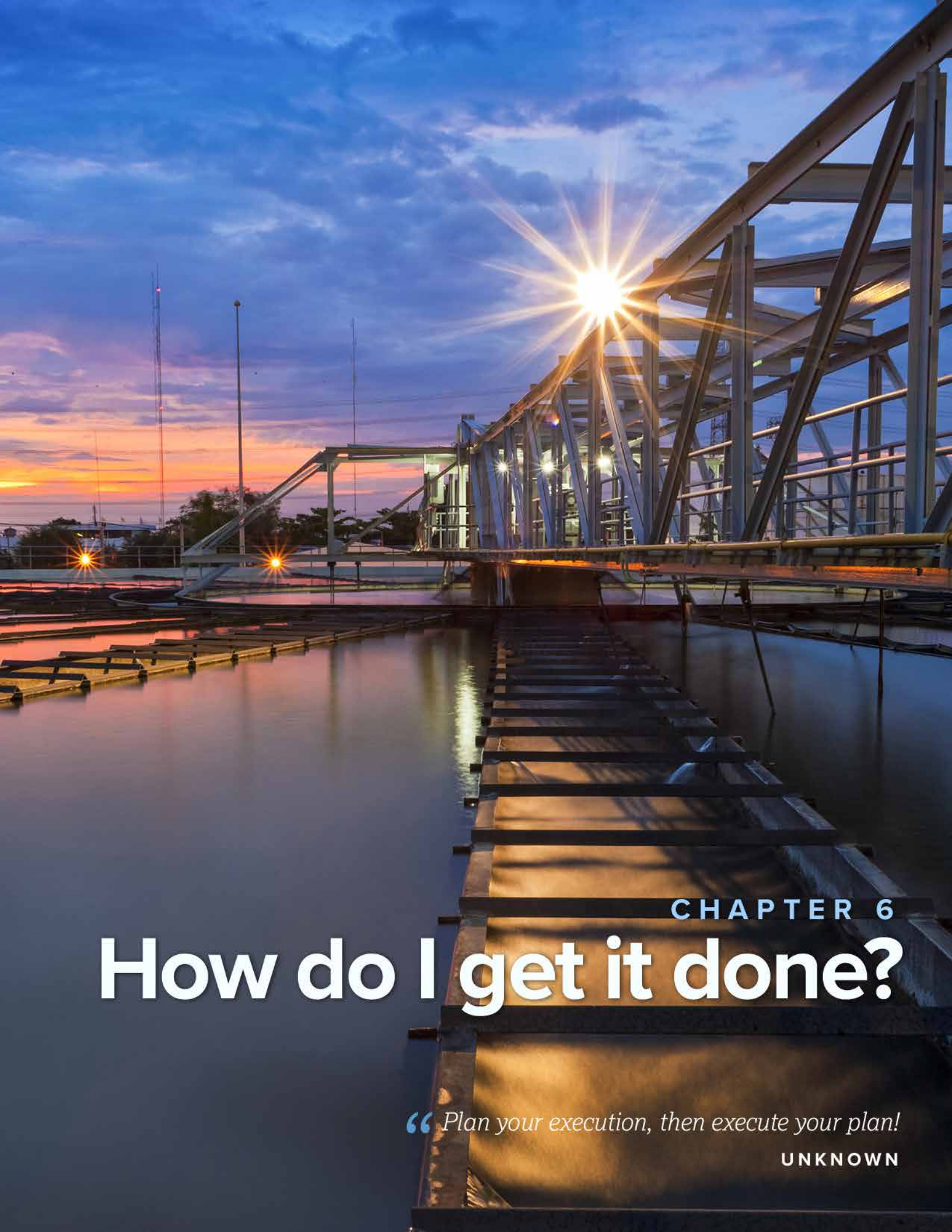
The most amazing thing to me is that this reactor plant was safely operated and maintained by individuals in their early 20s. These same 20-year-olds were responsible for overseeing the safe on-the-job training of the prospective power plant operators, while safely operating the nuclear power plant.

Having successfully completed the rigorous program, and then being selected to be a staff instructor at the S1W Naval Reactors Facility, I saw firsthand how individuals of average intelligence could be quickly trained to a high level of competence in a relatively short period of time.

This doesn't happen by accident...it happens by design, and by applying that design to a water and wastewater utility, it is possible to train our staff to a high level of competence in a relatively short period of time. Not only did it work for me while I was an instructor in the Navy, the system worked during my time managing departments in the water and wastewater industry, so I know it works.

The design is simple. It's not rocket science, it's not even nuclear science. It is simply a system that makes the informational resources available to the individual, and then holds them accountable for learning the information and skills required to competently perform the job function. It shifts the burden from the trainer to the trainee. This is huge, since it doesn't overburden your existing staff with the responsibility of training a new team member. The new team member is responsible for learning the job—you and the team are responsible for making the resources available so that the new team member can be successful in learning the job. By having an organized plan, this process will be more thorough and be completed in a much shorter time frame than you ever thought possible.





## CHAPTER 6

# How do I get it done?

“Plan your execution, then execute your plan!”

UNKNOWN

## Day 90 at Midtown Water Treatment Plant:

*After shadowing Bob for three months, it was time for Jim to pair up with Kelly to see how she did things. Jim cleared his throat and approached Kelly, who was performing the morning water quality tests in the treatment plant laboratory. “Morning, Kelly,” Jim muttered. “Hey, Jim! Three months in, let’s see what you know. Why don’t you do the calcium hardness test for me?”, Kelly replied. She watched, unimpressed, as Jim seemingly had no control over the titration drip rate. He blew right past the endpoint, invalidating the test. “Didn’t you learn anything from Bob?”, she asked as Jim shrugged. “He’s not much of a talker,” Jim replied, “And he did show me how he makes coffee in the morning.” Kelly laughed and said, “Well, yeah, that’s about the only thing Bob does right around here. Okay, so here, let’s start over. Watch how I do this test.” Jim watched as Kelly performed the test a little differently than Bob did. ‘Well at least she’s not as grumpy as Bob,’ Jim thought to himself.*

Before we get to the details of putting a plan together, I want to emphasize something. Planning is a very important part of the success of any new program; however, it is the implementation and execution of the program that will ultimately determine whether it is successful or not. Once you have your plan in place or the program developed, it is up to you to lead your staff through the implementation and execution of the training plan for it to be successful. With that said, let’s move on to the nuts and bolts of how to develop a Job Specific Training Plan.

The best way for me to teach you how to create a Job Specific Training Plan is for me to demonstrate it. I am going to use the job position of an entry-level Wastewater Treatment Plant Operator for our example. I recognize this might not be the position you supervise, but I have full confidence that you will be able to apply the principles used to develop this Job Specific Training Plan to your specific job title.

### Job Specific Training Plan – Step by Step

Creating a Job Specific Training Plan can be broken down into 5 basic steps. In Step 1, we will create a skeleton outline that will provide us a framework to work within and guide us during the creation of our Job Specific Training Plan. With each successive step, we will be adding more and more detail, until we have fully fleshed out a comprehensive plan. Let’s work through an example, step by step.

#### Step 1 – Outline the General Categories of Knowledge and Skills Required by the Position

For an operator position, these categories can be broken down by treatment processes and major job functions. Using the treatment plant operation and maintenance manual, and the operator’s job description, make a list of all the major categories of required knowledge and skills for this position. I like to start with writing information on paper and then transferring it to a Microsoft Word document table so I can rearrange the major topics into a logical flow for the training plan. After using my note pad and my Word document to record the major training categories, my final ordered list of major training topics is shown below.



General Training Category	Notes
Preliminary Treatment	
Primary Treatment	
Secondary Treatment	<i>This column is used to make notes to yourself about any special situations regarding a category that you want to make sure is incorporated into your finished plan.</i>
Secondary Clarification	
Disinfection	
Solids Handling	
Wastewater Math	

A Treatment Plant Operator position can be broken down by the treatment plant processes. A Laboratory Analyst position can be broken down by specific analyses. A Maintenance Mechanic position may be broken down by equipment, treatment process, or preventive versus corrective maintenance.

A Customer Service Representative position may be broken down by the various office equipment, systems or computer programs required to be mastered for the job. Referring to the position's job description is a good place to start as you develop major categories to be covered in your plan.

Record whatever will enable you to organize your training in such a way as to ensure you cover all aspects of the job. You will want to start with broad categories during Step 1.

The whole point of this step is to come up with an outline of major training categories that will act as the framework for your training plan. This creates a logical structure which will be helpful as we work through the process.

Let's get back to our Wastewater Treatment Plant Operator position example. Now that we have a list of general training categories, let's move on to the second step in the process.

## Step 2 – Identify Specific Training Topics Within Each Category

In Step 1, we created a basic outline. In Step 2, we will fill in the details. This step requires a lot of thought and discussion with your team members. This is the stage where you identify all those things that a person needs to know in order to be successful in this job position. Take each category one at a time and brainstorm with your team for all the key training points within that category.

Just like you did in Step 1, use a notepad or white board to generate your list of training topics and then transfer that list to a Word document for editing.

For illustration purposes, I have shown what this would look like on the next page for the topic of Preliminary Treatment.

Preliminary Treatment Training Topics	Notes
Key Words and Concepts	
Purpose and Function of Preliminary Treatment	
Bar Screen Operation and Maintenance	<i>This column is used to make notes regarding any special situations about a topic that you want to make sure is incorporated into your finished plan.</i>
Comminutor Operation and Maintenance	
Grit Chamber Operation and Maintenance	
Cyclone Separator Operation and Maintenance	
Odor Control	
Preliminary Treatment Safety	
Grit Removal Calculations and Records	

Once we've completed our list of training topics for the first major category, in this case, Preliminary Treatment, we'll move on to our next major category and continue this process until we have identified all of the major training topics for each major category identified in Step 1. When we are finished with this step, we will be well on our way to having an organized training plan.

In Step 2, we've taken each of the categories and have gotten a little more specific with the subject matter and topics that we wish to cover in our Job Specific Training Plan. As you can see, we started very broad, and step-by-step, we'll get more granular as we put the flesh on the skeleton created in Step 1.

### Step 3 – Identify Specific Knowledge and Job Skills for Each Topic

Now that we have listed major topics within each major category of training, it's time to get even more specific and identify all the information that will be covered in this Job Specific Training Plan. Expand each topic in the outline to include the specifics within that topic. Here we're talking about the *nitty gritty*. Most of this information will come from source documents (plant manuals, SOPs, vendor-provided manuals, training manuals). However, some of this information and knowledge may be what is considered "tribal knowledge"—gained through many years of experience operating the plant or doing this particular job function. This tribal knowledge is contained within the minds of your team, and must be drawn out and written down. Do not bypass this part of the process. Team members that have worked in this department for many years have a lot of stored-up knowledge that cannot be gleaned from a book, manual or a standard tutorial. These nuggets are golden, and must be passed on to all new team members, as well as existing team members.

This process will take a bit of time, as it will require meeting with your team for an initial brainstorm session—followed by as many follow-up sessions as the team feels is necessary—until all the institutional knowledge, both tribal and formally documented are out on the table and ready to be codified as part of a permanent, yet modifiable Job Specific Training Plan.



Although it may be possible to complete Steps 1 and 2 of this process in the privacy of your office by yourself, the third step should really involve every member of the team. This is the only way for you to have a truly comprehensive program.

To complete this step, simply expand upon the outline created in Step 2 regarding the specific knowledge and job skills required for the job. To do this, I would distribute blank templates (a completed one is shown on the next page) to my operations staff and ask them to complete the form as best they can. We would then all meet as a group (using their completed forms as a starting point) to brainstorm and discuss each topic to ensure we have covered all the required knowledge and job skills for that particular topic.

Following is an example from my hypothetical wastewater treatment operations team.

<b>Preliminary Treatment Training Topics</b>	<b>Knowledge or Job Skill</b>
<b>Key Words and Concepts</b>	
References: Online Lesson – Preliminary Treatment MOP 11 – Glossary	Demonstrate an understanding of the following key words and concepts and how they impact plant operations:
	Comminution
	Detritus
	Grit
	Grit Classifier
	Hydrogen Sulfide
	Inorganic Waste
	Organic Waste
	Rack
	Screen
	Parshall Flume
<b>Purpose and Function of Preliminary Treatment</b>	
References: Online Lesson – Preliminary Treatment MOP 11 – Chapter 18	Demonstrate a thorough understanding of the function and purpose of the Preliminary Treatment Process. Include a brief overview of each component or sub-system that makes up our Preliminary Treatment Process.
<b>Bar Screen Operation and Maintenance</b>	
References: Online Lesson – Preliminary Treatment MOP 11 – Chapter 18 Plant Operation and Maintenance Manual	Demonstrate a thorough understanding of the Bar Screen Treatment Process by discussing the following with an Authorized Training Operator: What do screens remove from wastewater?
	How are screens cleaned?
	How often are screens cleaned?
	How are screenings disposed of?
	What problems are created when screens are not properly or regularly cleaned?
	Job Skill Demonstration:
	Demonstrate the proper procedures required for cleaning the plant bar screens.
	Demonstrate the proper disposal of screenings.



The expanded outline of specific knowledge and job skills required for the entry-level operator position on the previous page is for illustration purposes only. Your list will likely be much more complete than this, but I think you get the idea of how this process works. I hope you noticed that all of the knowledge and information listed has been written down in the form of a question. This is important because of how this training process works. By asking the new team member to explain the what, where, why and how of a process, it forces him or her to learn the information in such a manner so that they can explain it to you. This requires a deeper level of understanding than simply reading about a process. In essence, the new team member will be required to learn the information presented in the training plan well enough to be able to teach it to someone else. This will ingrain the knowledge deep within the individual, and will stay with them throughout their career.

Now that we have further expanded the outline of the position's knowledge base and job skill requirements, you're ready to create each individual section of the training plan. Let's move on to Step 4 and see what this looks like.

#### **Step 4 – Create the Job Specific Training Plan Document**

Since we have been using the major category of Preliminary Treatment in our example, we will continue with this category to illustrate the process for Step 4. The process is then repeated for each major category, until all have been completed.

On the next page is an example of how the Training Plan Document will look once all of the information gathered in previous steps is combined into a single table.

PRELIMINARY TREATMENT			
Training Category	Specific Training Topics	Specific Knowledge or Job Skill Demonstration	
	<b>Key Words and Concepts</b> References: Online Lesson – Preliminary Treatment MOP 11 – Glossary	Demonstrate an understanding of the following key words and concepts and how they impact plant operations: <ul style="list-style-type: none"><li>• Comminution</li><li>• Detritus</li><li>• Grit</li><li>• Grit Classifier</li><li>• Hydrogen Sulfide</li><li>• Inorganic Waste</li><li>• Organic Waste</li><li>• Rack</li><li>• Screen</li><li>• Parshall</li><li>• Flume</li></ul>	
	<b>Knowledge Demonstration</b>	<b>Target Completion Date</b>	<b>Actual Completion Date</b>
	<b>Purpose and Function of Preliminary Treatment</b> References: Online Lesson – Preliminary Treatment MOP 11 – Chapter 18	Demonstrate a thorough understanding of the function and purpose of the Preliminary Treatment Process. Include a brief overview of each component or sub-system that makes up our Preliminary Treatment Process in your discussion.	
	<b>Knowledge Demonstration</b>	<b>Target Completion Date</b>	<b>Actual Completion Date</b>
	<b>Bar Screen Operation and Maintenance</b> References: Online Lesson – Preliminary Treatment MOP 11 – Chapter 18 Plant Operation and Maintenance Manual	Demonstrate a thorough understanding of the Bar Screen Treatment Process by discussing the following with an Authorized Training Operator: <ul style="list-style-type: none"><li>• What do screens remove from wastewater?</li><li>• How are screens cleaned?</li><li>• How often are screens cleaned?</li><li>• How are screenings disposed of?</li><li>• What problems are created when screens are not properly or regularly cleaned?</li></ul>	
	<b>Knowledge Demonstration</b>	<b>Target Completion Date</b>	<b>Actual Completion Date</b>
	<b>Job Skill Demonstration:</b> <ul style="list-style-type: none"><li>• Demonstrate the proper procedures required for cleaning the plant bar screens.</li><li>• Demonstrate the proper disposal of screenings.</li></ul>		
	<b>Job Skill Demonstration</b>	<b>Target Completion Date</b>	<b>Actual Completion Date</b>



That is basically it! Continue this process for each topic within the Preliminary Treatment category that you and your team identified during Step 3 of this process. Lather, rinse and repeat until all the training topics and categories have been covered.

Not only are you creating a comprehensive guide for the new operator to follow when learning the material, you are creating a comprehensive guide for any of your qualified operators to use and follow during the training process. This takes the burden off of you and your experienced operators, and puts it squarely on the new operator. Your experienced operators will thank you for taking the time to put together this Job Specific Training Plan for their new team members, and new team members will thank you for having a plan in place to get them quickly trained and contributing to the team—a win all the way around!

## **Step 5 – Integrate the Job Specific Training Plan with LMS for Maximum Benefit**

Take a deep breath and exhale slowly. Now pat yourself on the back. The major work has been finished, and now it's time to put the finishing touches on your Job Specific Training Plan. This final step will turbocharge your training plan and help to automate the management and tracking of this training process. By leveraging technology, as well as “on-topic” training that has already been produced for you, your training nightmares will soon be over. By putting in the work up front, and coupling it with readily-available resources, your staff training woes will soon be a distant memory.

**...it is the only learning management system that comes preloaded with water and wastewater-specific training that is state-approved, and that has been tested by utility staff during the past 12 years.**

I will be using the [TrainingHub](#) online platform to demonstrate how this integration works. Although this platform is not the only available learning management system out there, it is the only learning management system that comes preloaded with water and wastewater-specific training that is state-approved, and that has been tested by utility staff during the past 12 years. When I talk about utilizing industry standard training that's already produced, there are no integration issues with the [TrainingHub](#) platform when utilizing **American Water College** training. This platform allows for the integration of training already owned by the water utility as well.

Using the Job Specific Training Plan that you just created, the first step of integrating (and therefore automating) your training program is to set up a course within the system. I will stick with the job position we have used so far for illustration purposes, so our course will be called “Wastewater Treatment Operator 1”. This is simply the job position title for which this training plan was created. As an administrator within the [TrainingHub](#) platform, you will simply go to your System Dashboard, click the Courses icon, then click the “Add Course” icon, enter the course name and click “Add” to save the course.

Now that you have a course to contain the individual sections (referred to as units within the [TrainingHub](#) platform) of the Job Specific Training Plan, you will simply click the “Add Content” button to add the first section (lesson) of the training plan. Since [TrainingHub](#) already has thousands of hours of professionally-produced water and wastewater training, the fastest way to get up and running is to import a lesson that already exists. You will select the “Import Lesson” option and then import the lesson titled “Preliminary Treatment.”

Now, simply repeat this process for each section of the training plan. Import the appropriate lessons from the [TrainingHub](#) library, and then add any lessons that are specific to your facility.

In general, that is the basic process you will need to follow in order to create a Job Specific Training Plan within an online training platform that will make it very easy for you to manage the training of the new team member.

You may have heard the saying that says, “You can’t manage what you can’t measure.” Well, by putting your Job Specific Training Plan into the [TrainingHub](#) training a platform, you will be able to measure every step of your new team member’s training. Through the advanced reporting of this system, you will be able to track your new team member’s progress to ensure that they are meeting critical deadlines and are on-track to complete the training within the required timeframe.

The [TrainingHub](#) platform allows you to assign this training to your new team member, and it will automatically deliver and track the training for the new team member. Upon completion, it will generate a certificate signifying that the new team member has completed the program. Not only is this system great for managing progress, it is great for documenting that progress all the way through to completion.



CHAPTER 7

# Final thoughts

“Plans are only good intentions unless they immediately degenerate into hard work.

PETER DRUCKER



If I could wave a magic wand and instantly create Job Specific Training Plans for every position at your utility, I would, but the reality is that in order to reap the benefits of having Job Specific Training Plans in place for each position within your organization, it will require work. As they say, “If it was easy, everybody would do it.” Here is an opportunity for you to distinguish yourself, your department and your utility from the crowd by putting in the extra effort required to truly transform your organization.

Think about it. What we’re talking about here is not simply a plan to train new employees. What we have been talking about helps solve the issues involved with knowledge management and succession planning that every water and wastewater utility in the country is facing.

By creating these Job Specific Training Plans and hosting them within the [TrainingHub](#) online platform, you will essentially be creating a knowledge base for your organization. The process you will go through to create these plans helps to ensure that the institutional knowledge of your experienced staff stays within the organization, and does not leave with them when they retire or move on in their career. This process directly addresses the problems created by the silver tsunami.

As far as succession planning goes, having job specific training in place for each position allows you to develop your bench strength by crosstraining individuals, or by having a process by which inexperienced employees can take additional training to develop themselves professionally to learn all of the institutional knowledge, as well as general industry knowledge to be competent in higher level positions as they come open. This is a way for you to have a farm system of new talent, ready to step in and fill the shoes of those who move on. Not only is this a way for you to on-board new team members from outside your organization, it’s a way for you to develop the talent that already exists within your organization, and to provide promotional opportunities—which will lead to employee retention. This is a way for you to attract and retain top-performing team members.

Speaking of top performers, by having a Job Specific Training Plan in place, you will be able to hire for character and train for competence. No longer will you feel trapped into hiring someone for the credential or certification they hold, you will be able to hire someone who will fit within your team, and someone who has demonstrated the ethical fortitude and character of the type of team member that can truly be a high-performer. This may be someone within your organization currently working in another department, or it could be someone new to the organization.

Following are two case studies of utilities that have implemented Job Specific Training Plans. The second study chronicles how one top performer (who was seeking new professional challenges) was cross-trained and then transferred within the organization.

## Case Studies

### City of Stockton

Like many municipalities and utilities, Stockton’s Regional Wastewater Control Facility faced the challenges of high turnover and the need to train new staff. Their treatment plant operations varied greatly due to inconsistent training and a lack of standard operating procedures (SOPs).

## Challenges

As management looked forward, they faced several challenges.

- High turnover – The “Silver Tsunami” was impacting Stockton, as experienced operators retired or left for new employment opportunities.
- No formal training program – The challenge of high turnover was compounded, since their informal training left gaps in operator knowledge and skills.
- Inconsistent operations – Informal training resulted in inconsistent treatment plant operations, which reduced operational efficiency.

## Solutions

Stockton’s Regional Wastewater Control Facility partnered with American Water College to provide the [TrainingHub](#) LMS to document SOPs and to centralize their training program.

- Online training platform – A centralized learning platform was created that allowed them to leverage training developed by industry experts and to easily create site-specific training.
- American Water College training – The preloaded training in [TrainingHub](#) ensures that all operators have the required knowledge to get and maintain their certifications, and to competently manage the wastewater treatment process.
- Site-specific SOPs and training – They recorded their own site-specific operating procedures. Training was created and assigned to ensure consistent plant operations.

## Benefits

- After installation and configuration of the [TrainingHub](#) LMS, the benefits are clear.
- Consistent training program – The old method having a new operator “shadow” more experienced operators is enhanced, as on-the-job training is more focused with everyone receiving consistent training without the gaps that existed with their informal training model.
- Reduced training time – Having a well-defined and documented training program reduces the time it takes to get new operators trained, licensed, and productive by up to 50%.
- Well-documented SOPs and knowledge bank – The central repository of SOPs results in safe and efficient plant operations, and a uniform set of knowledge and skills for all staff.

## Palmdale Water District

The Palmdale Water District had an opening in their laboratory at the Leslie O. Carter Water Treatment Plant. The person responsible for making the final hiring decision believed that hiring a motivated individual with a strong work ethic was just as important, if not more important than hiring someone with an impressive resumé. He also felt that offering new opportunities within the organization for motivated employees was good for overall morale—even though this might mean hiring someone with little or no experience performing the job tasks of a laboratory analyst. Hiring an individual that fits the needs and culture of the existing team is perhaps more important than hiring an individual based on their resumé.

However, for this to work (hiring a person with no lab experience, but someone who would fit in well with existing staff and with a willingness to work hard to gain the job-specific skill required by the position), there needed to be a comprehensive Job Specific Training Plan in place before the new team member reported for duty. The laboratory supervisor put together such a plan using the method described in this book, and integrated it into **American Water College's** online platform.

After interviewing many individuals—some with water quality lab experience, some with water treatment plant experience, some with degrees in chemistry, and some with no job-related experience at all—the successful candidate was found within the Palmdale Water District, and was a member of the distribution system construction crew. He had no experience with water treatment or water quality analysis, but he had demonstrated a strong work ethic and a willingness to learn. The laboratory supervisor felt he would be the best fit within the laboratory out of all prospective candidates.

The training program was designed to be completed within six months, which coincided with their new employee probation period. The former distribution system construction crew member had six months to be fully trained as a Laboratory Analyst 1 or risk losing his job.

He was able to complete the training well within the probationary timeframe, and was in fact contributing to the team within the first week of starting—due to the training program. He went on to obtain his Water Quality Laboratory Analyst I certification issued by the American Water Works Association after working in the lab for one year. After a couple of additional years, he obtained his Laboratory Analyst II certification.



## A LETTER OF THANKS

*Dear Joe.*

*The reason for my letter is to say, thank you for having such an impact in my professional development as a Laboratory Analyst. The job specific training plan that you have is so easy to follow and I feel that it is the main reason as to my achievements in the lab. Coming from a family that has construction work as the primary choice, I felt that making the transition from field to lab work would be challenging. The laboratory analyst training that you have developed, stands out from any other type of on the job training that I have ever been a part of. Your training let me become a competent lab analyst in such a short period of time. I was able to pass my AWWA water quality lab analyst 1 test in less than a year of being in the lab. Some might say that this is achievable, but I had no advanced schooling and all the laboratory work was totally new to me. I have been a part of other trainings in my lifetime, but none was as impactful to me as yours. Other trainings have you shadowing someone for months at a time and you have to absorb the limited information and training that they provide. Your training is well organized and easy to follow. It covers all the required information needed to be a successful and competent lab analyst in a fraction of the time. I also know that you took the chance in hiring me without any laboratory experience and I am forever grateful for that opportunity.*

*I want to once again, thank you for the opportunity and mainly, thanks for the phenomenal training that you offer for lab analysts. I believe that the training and yourself as the instructor, are what have had the biggest impact in my professional career as a laboratory analyst.*

*Forever thankful,  
Audel Narez*