

# Irvine Ranch Water District's Recycled Water Site Supervisor Training Program

AN ON-LINE TRAINING PROGRAM TO EDUCATE SITE SUPERVISORS  
ABOUT THEIR ROLES AND RESPONSIBILITIES



# Basis for Training

The basis for the material presented in this training program are the applicable laws, codes and regulations pertaining to recycled water in California.

IRWD provides this training as a resource for Site Supervisors so they can be reminded of their responsibilities when it comes to recycled water. Please refer back to this program as often as helpful.

If there are any questions regarding the use of recycled water, please contact IRWD.



# Presentation Format

Each recycled water use site is required to have a Site Supervisor. This is a training presentation designed to educate Site Supervisors and other interested parties about the roles and responsibilities of a Site Supervisor.

There are about 20 slides which provide useful information followed by a quiz to help reinforce the important aspects of this training. No data is being gathered about the quiz or the answers provided. It is intended to provide a way for you, the Site Supervisor, to make sure you understand more about recycled water and your role as a Site Supervisor.

# Purpose of site Supervisor Training

There are two primary purposes for Site Supervisor Training:

- Educate Site Supervisors about what recycled water is and what it can be used for; and
- Educate Site Supervisors about their roles and responsibilities as a Site Supervisor.

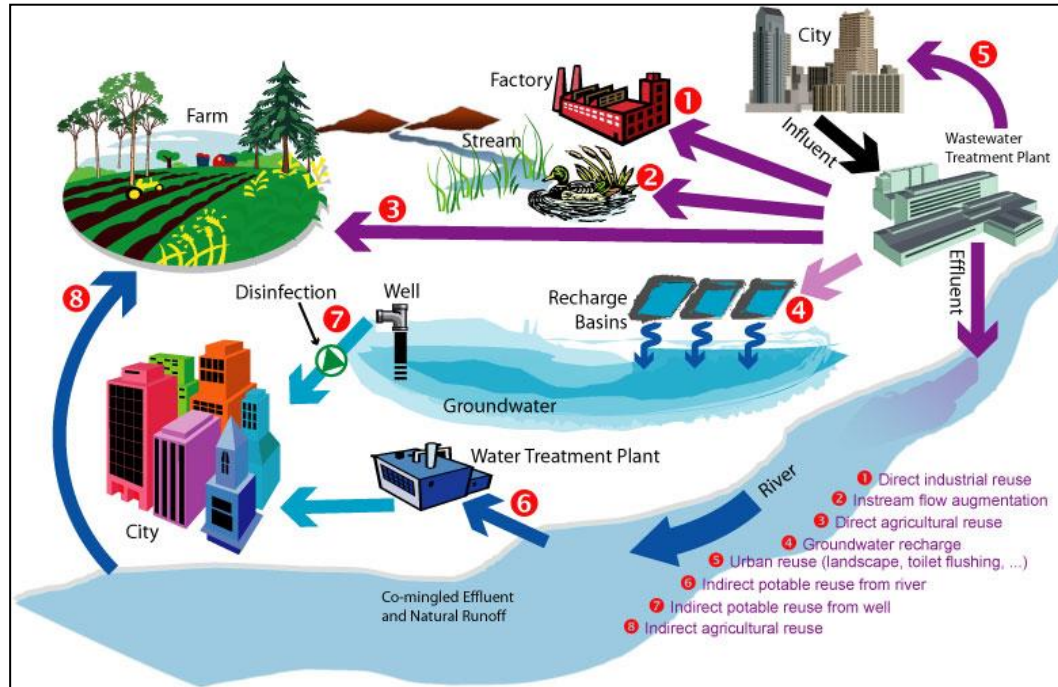


# What is Recycled Water?

Recycled water is sewage that has been treated to water quality levels defined by the State of California and used for a variety of purposes approved by the State of California.



# Natural Recycled Water Process



*Exhibit courtesy of the California Department of Water Resources*

Water is recycled by nature when it rains, soaks into the ground, and is returned into the atmosphere. Recycled water that is produced is simply an advanced way of doing what nature already does. Recycled water systems are found in many regions throughout the State. This exhibit schematically shows how water is collected, sent to a treatment plant, treated and then distributed for many uses which will be described later in this presentation.

# Not All Recycled Water is the Same

It's important to know the type of recycled water served by IRWD and used at your use site.

IRWD serves *disinfected tertiary* recycled water, described on the next slide.

# Disinfected Tertiary Recycled Water

- Tertiary treated recycled water is high-quality recycled water that is not approved for drinking or other potable purposes; and
- Tertiary treated recycled water is approved for non-potable purposes, such as landscape irrigation, agricultural crop irrigation, commercial laundry, car washes, toilet flushing, fire protection, other non-drinking purposes.



# What is a Site Supervisor Responsible for?

The Site Supervisor is responsible for the operation and maintenance of the on-site systems, and to ensure the safe and proper use of recycled water, and to keep up-to-date as-built plans available.

The permit issued to IRWD which allows us to produce and serve recycled water requires that each recycled water use site have an identified Site Supervisor.



# Overview of Regulatory Agencies

There are several regulatory agencies that play a role in recycled water. They are:

**State Water Resources Control Board**—Administers and enforces regulations with regard to the protection of public health

**Regional Water Quality Control Boards**—Implements State regulations; issues permits

**State Building Standards Commission**—Determines Building Code

**Regional or Local Health Agencies**—Enforces regulation

**Water Recycling Permittee (IRWD)**--Authorizes site uses; has additional requirements

# Overview of Regulatory Agencies

Of the several regulatory agencies that play an important role in water recycling, it is normally the permitted agency (IRWD) that establishes rules and regulations for recycled water use.



# Approved Uses for Recycled Water

There are several categories of use for recycled water. Types of use include:

- Irrigation
- Impoundments (for example, decorative lakes, public use open reservoirs, golf course ponds, etc.)
- Cooling Towers
- Other Purposes

Check with IRWD to ensure the proposed use is approved.

# Approved Uses for Recycled Water

Irrigation – Including Medians, Parkways, Schools, Residential Landscaping, Parks, Golf Courses, Agriculture, Orchards, Vineyards, Cemeteries and Freeway Landscaping



# Approved Uses for Recycled Water

Impoundments – Including ponds, lakes, golf course water features.



# Approved Uses for Recycled Water

## Cooling Towers



# Approved Uses for Recycled Water

## Other Purposes – Including Grading, Dust Control, and Compaction





# Typical Use Site Features

There are many facilities that are typically found at a recycled water use site. The Site Supervisor should be familiar with the following facilities:

- Meters
- Backflow Prevention Assemblies
- Piping
- Master Valves
- Automatic Sprinkler Control Valves
- Controllers
- Quick Couplers
- Hose Bibs
- Signage
- Tags
- Sprinklers

# System Identification is Critical

It is important that the various system facilities be identified as carrying recycled water or potable water. Following are some examples of system identification:



Recycled water use sites should have at least one sign located in a high visibility place to notify visitors that recycled water is being used at that site.

# System Identification is Critical

Purple pipe should be used where ever new piping is installed.



# System Identification is Critical

Identification tags should be affixed to meters, automatic sprinkler control valves, and any other recycled water facilities.



# System Identification is Critical

Quick couplers should have purple covers.



# Irrigation System Performance

Understanding your irrigation system is critically important to applying water efficiently and preventing overwatering and runoff. In order to create an efficient watering schedule, you should know the following for your irrigation system:

Distribution uniformity - How evenly water is applied

Precipitation rates - How fast water is applied



# Impoundment Management

Some sites contain recycled water landscape irrigation impoundments or storage ponds. On-site recycled water storage ponds need to be managed appropriately to prevent unauthorized discharge of recycled water.

On-site recycled water storage ponds should also be managed to prevent weed and algae growth and to prevent mosquitos and other insects.

# Protecting Public Water System is Crucial

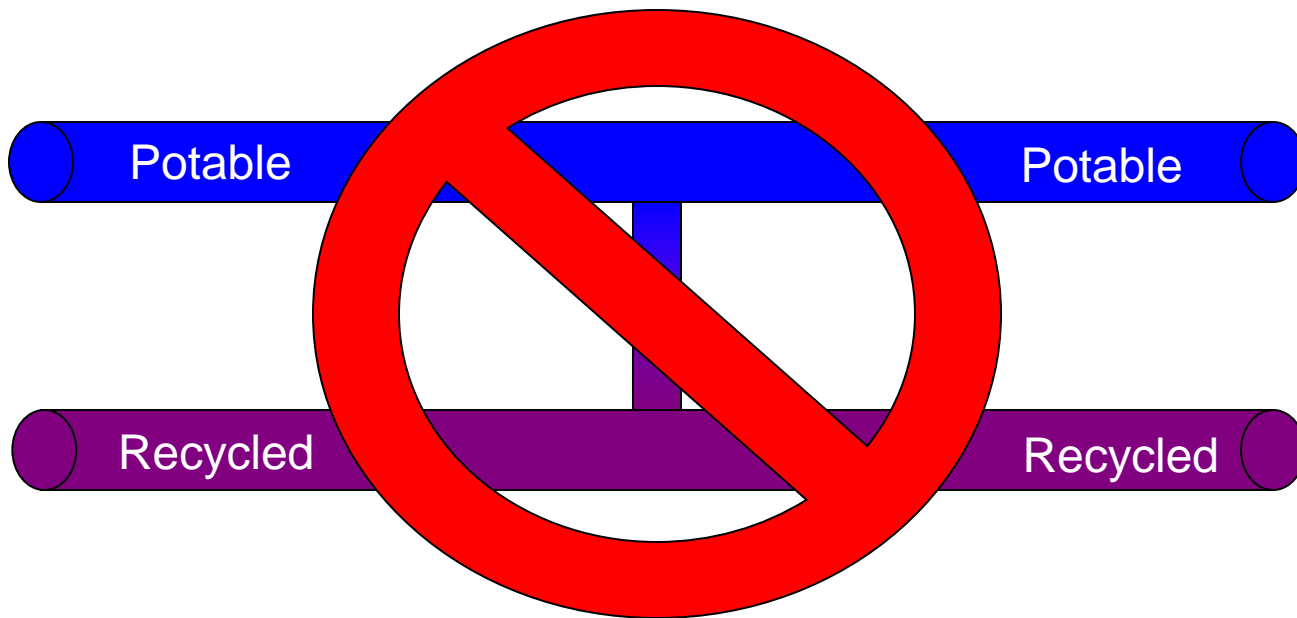
Typically a recycled water use site has both drinking water and recycled water on site. The Site Supervisor must be familiar with both systems to ensure that:

- The two systems remain separate – preventing cross connections.
- The public drinking water system is protected – ensuring backflow protection.



# What is Cross Connection?

Any physical connection between a water system supplying drinking water and any source or system containing water that is not or cannot be approved for human consumption.



# Cross-Connection Prevention

- Cross-Connection between a recycled water system and any other water system is not allowed;
- Direct piping between potable and recycled systems, regardless of the presence of valves, backflow prevention devices, or other appurtenances is not allowed; and
- Using the same equipment on recycled and potable water systems (i.e. – hoses, hose nozzles, etc.) is not allowed.

# Backflow Prevention

- Provides a safeguard to protect the potable water distribution system from an accidental cross-connection
- Backflow prevention devices are typically required on potable system for sites with recycled water service
- Devices must be tested annually
- Check with IRWD for specific requirements



# The Site Supervisor is responsible for:

## *Ensuring Cross Connections do not occur and...*

- Systems Identification
- Proper Operation
- Periodic Inspection
- Proper Modification
- Notification of IRWD
- Keeping Current Plans On-Site
- Communication with IRWD
- Education of Other Employees

The following slides (“Do’s and Don’ts”) illustrates these principles

# The Do's

## Do's:

- Install and maintain signage at points of entry (pedestrian and vehicular);
- Install and maintain labels and tags on recycled and potable water systems;
- Operate irrigation system between 9pm – 6am if automatically controlled or at other times if manually controlled and supervised (someone present);
- Modify irrigation frequency and duration to avoid runoff;
- Use quick couplers instead of hose bibs on the recycled water system;
- Contact IRWD if system modifications are anticipated;
- Immediately contact IRWD if any of the following has happened:
  - A recycled water line break, spill or off-site discharge of recycled water
  - A violation of water recycling requirements
  - A cross-connection between the recycled and potable water systems
- Educate site workers on safe use and restrictions of recycled water;
- Keep records and as-built drawings up-to-date and accessible;
- Assist during Periodic Visual Inspections; and
- Assist during Periodic Cross-Connection Testing.

# The Don'ts

## **Don'ts:**

- Don't drink recycled water;
- Don't use recycled water to wash hands or any other part of body;
- Don't remove recycled water identification signs, tags or labels;
- Don't cross-connect different water systems (recycled and potable);
- Don't allow recycled water to contact drinking fountains or eating areas;
- Don't allow recycled water to pond or puddle;
- Don't allow recycled water to runoff the use site property by either overspray or overwatering;
- Don't install hose bibs on recycled water systems (unless public access is prohibited);
- Don't use the same equipment on both recycled water and potable water systems (for example, quick couplers, tools, etc.); or
- Don't perform system modifications without prior approval of IRWD.

# Site Supervisor Self-Test

The following slides provide questions and answers regarding information provided during this training. In some cases, additional information is provided on the answer slide which explains the correct answer. It is meant as a way for you to self-test your knowledge.



# Question #1

Recycled water is:

- (a) Regulated by the State of California
- (b) Never to be used as drinking water
- (c) Sewage that is treated to a high level and then reused for non-potable purposes
- (d) All of the above



# Answer

Recycled water is:

- (a) Regulated by the State of California
- (b) Never to be used as drinking water
- (c) Sewage that is treated to a high level and then reused for non-potable purposes
- (d) All of the above

## Question #2

For water reuse applications, all recycled water is the same and may be used for any non-drinking purpose.

- (a) True
- (b) False

# Answer

For water reuse applications, all recycled water is the same and may be used for any non-drinking purpose.

- (a) True
- (b) False

Recycled water is defined by the level of treatment and its corresponding uses. IRWD serves disinfected tertiary recycled water.

## Question #3

In accordance with requirements issued to IRWD for recycled water use, a \_\_\_\_\_ is required for each site.

- (a) Property Manager
- (b) Landscaper
- (c) Recycled Water Site Supervisor
- (d) AWWA Certified Cross Connection Control Specialist

# Answer

In accordance with requirements issued to IRWD for recycled water use, a \_\_\_\_\_ is required for each site.

- (a) Property Manager
- (b) Landscaper
- (c) Recycled Water Site Supervisor
- (d) AWWA Certified Cross Connection Control Specialist

## Question #4

Sites using recycled water can make changes and additions to the irrigation system without getting prior approval from their permitted recycled water provider.

- (a) True
- (b) False

# Answer

Sites using recycled water can make changes and additions to the irrigation system without getting prior approval from their permitted recycled water provider.

- (a) True
- (b) False

A Site Supervisor must notify IRWD before changes to the on-site systems (potable and recycled water) are made. Plans may be required if the changes are substantive.

## Question #5

If recycled water looks clean, the Site Supervisor may allow workers to drink it.

- (a) True
- (b) False



# Answer

If recycled water looks clean, the Site Supervisor may allow workers to drink it.

- (a) True
- (b) False

Recycled water is not allowed for any potable purposes including drinking or cooking. It is a good practice to wash your hands after working with recycled water.

## Question #6

Recycled water and potable water systems may be distributed through one shared piping system.

- (a) True
- (b) False

# Answer

Recycled water and potable water systems may be distributed through one shared piping system.

- (a) True
- (b) False

Recycled water can never be cross-connected with a potable water system, even if there is a closed valve.

## Question #7

If IRWD authorizes the use, recycled water may be used for impoundments and cooling towers.

- (a) True
- (b) False

# Answer

If IRWD authorizes the use, recycled water may be used for impoundments and cooling towers.

- (a) True
- (b) False

These are State approved uses.

## Question #8

Which of the following is an approved use for recycled water?

- (a) Drinking
- (b) Washing your hands and face
- (c) Cooking food
- (d) Irrigating landscapes
- (e) None of the above

# Answer

Which of the following is an approved use for recycled water?

- (a) Drinking
- (b) Washing your hands and face
- (c) Cooking food
- (d) Irrigating landscapes**
- (e) None of the above

## Question #9

Which color is typically used to designate recycled water pipes, equipment and appurtenances?

- (a) Red
- (b) Blue
- (c) Yellow
- (d) Purple



# Answer

Which color is typically used to designate recycled water pipes, equipment and appurtenances?

- (a) Red
- (b) Blue
- (c) Yellow
- (d) Purple

## Question #10

Recycled water identification signs need to be installed at the use site and must be maintained to ensure public notification of recycled water use.

- (a) True
- (b) False

# Answer

Recycled water identification signs need to be installed at the use site and must be maintained to ensure public notification of recycled water use.

- (a) True
- (b) False

Signage is required by the State of California and IRWD.

## Question #11

Hose bibs are allowed on any recycled water system.

- (a) True
- (b) False

# Answer

Hose bibs are allowed on any recycled water system.

(a) True

(b) False

Hose bibs are not allowed on recycled water systems based on the concern that someone can easily attach a hose to it and possibly drink from the hose.

## Question #12

The same garden hose can be used on both the potable and recycled water systems.

- (a) True
- (b) False

# Answer

The same garden hose can be used on both the potable and recycled water systems.

- (a) True
- (b) False

Any equipment used on a recycled water system, including hoses, should be dedicated to that system so as to avoid any concerns about cross-contamination.

## Question #13

The Site Supervisor is responsible for the operation and maintenance of the recycled water system in compliance with the Guidelines set forth and ultimately the safe use of recycled water at the site.

- (a) True
- (b) False



# Answer

The Site Supervisor is responsible for the operation and maintenance of the recycled water system in compliance with the Guidelines set forth and ultimately the safe use of recycled water at the site.

- (a) True
- (b) False

# Question #14

Site Supervisor responsibilities include:

- (a) Being the contact person for the recycled water use site
- (b) Assisting with periodic visual inspections, and informing of possible site modifications
- (c) Contacting IRWD with any Site Supervisor personnel changes or contact information changes
- (d) Avoiding and preventing cross-connections
- (e) Minimizing ponding, overspray and runoff of recycled water
- (f) Educating all personnel involved with the recycled water system, including third party contractors
- (g) Be knowledgeable of practices, equipment and principles relating to the intended use of recycled water
- (h) Maintaining identification signs, tags and labels on the recycled water site
- (i) Knowing who to contact in case of emergencies, failures or violations related to the water system
- (j) All of the above

# Answer

Site Supervisor responsibilities include:

- (a) Being the contact person for the recycled water use site
- (b) Assisting with periodic visual inspections, and informing of possible site modifications
- (c) Contacting IRWD with any Site Supervisor personnel changes or contact information changes
- (d) Avoiding and preventing cross-connections
- (e) Minimizing ponding, overspray and runoff of recycled water
- (f) Educating all personnel involved with the recycled water system, including third party contractors
- (g) Be knowledgeable of practices, equipment and principles relating to the intended use of recycled water
- (h) Maintaining identification signs, tags and labels on the recycled water site
- (i) Knowing who to contact in case of emergencies, failures or violations related to the water system
- (j) All of the above

## Question #15

You should do the following when you notice a broken recycled water irrigation pipe at the site you supervise:

- (a) Ignore it if it's just a small break
- (b) Wait until the next day to have it repaired
- (c) Turn off the recycled water supply, notify IRWD and have it repaired immediately
- (d) Call all your friends back home and tell them about it

# Answer

You should do the following when you notice a broken recycled water irrigation pipe at the site you supervise:

- (a) Ignore it if it's just a small break
- (b) Wait until the next day to have it repaired
- (c) Turn off the recycled water supply, notify IRWD and have it repaired immediately
- (d) Call all your friends back home and tell them about it

## Question #16

If a site is using recycled water, the best way to prevent a cross connection from happening is to:

- (a) Maintain appropriate signs, tags and labels
- (b) Perform regular inspections
- (c) Inform all personnel working on the system about ways to prevent cross connections
- (d) Keep accurate records and as-built drawings
- (e) All of the above

# Answer

If a site is using recycled water, the best way to prevent a cross connection from happening is to:

- (a) Maintain appropriate signs, tags and labels
- (b) Perform regular inspections
- (c) Inform all personnel working on the system about ways to prevent cross connections
- (d) Keep accurate records and as-built drawings
- (e) All of the above

## Question #17

There shall be no physical connection (for example, piping, hoses, etc.) between the potable water supply and a recycled water distribution system.

- (a) True
- (b) False



# Answer

There shall be no physical connection (for example, piping, hoses, etc.) between the potable water supply and a recycled water distribution system.

- (a) True
- (b) False

## Question #18

Recycled water quick couplers must have purple covers.

- (a) True
- (b) False



# Answer

Recycled water quick couplers must have purple covers.

- (a) True
- (b) False



## Question #19

Irrigation systems can cause overspray and runoff so minimizing it is impossible and is unimportant.

- (a) True
- (b) False

# Answer

Irrigation systems can cause overspray and runoff so minimizing it is impossible and is unimportant.

- (a) True
- (b) False

The Site Supervisor should periodically inspect the irrigation system to avoid overspray or runoff.

## Question #20

The Site Supervisor is responsible for keeping an accurate set of recycled water plans for their site.

- (a) True
- (b) False

# Answer

The Site Supervisor is responsible for keeping an accurate set of recycled water plans for their site.

- (a) True
- (b) False

Thank You!

You have completed IRWD's Recycled Site Supervisor Training program.

If you have any questions about the use of recycled water, please contact IRWD.





# How to Stay in Touch



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**Twitter:** @IRWDnews



IrvineRanchWD

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