

# WATER PROFESSIONALS PRESENTATION

Target Audience is 9-12 grade students

# TODAY'S LEARNING OBJECTIVES

- Understand
  - The water cycle
  - Drinking Water
  - Wastewater
  - Stormwater
  - Water Conservation

# DRINKING WATER

# WHERE DOES THE WATER FROM MY TAP COME FROM?

- In order for you to have that clean tap water, water utility workers have 3 main jobs:
  - Protect and replenish water found in lakes, rivers, wetlands, and underground – often called "source water"
  - "Clean" the water so it is safe to drink and use
  - Send that clean water to the public through pipes

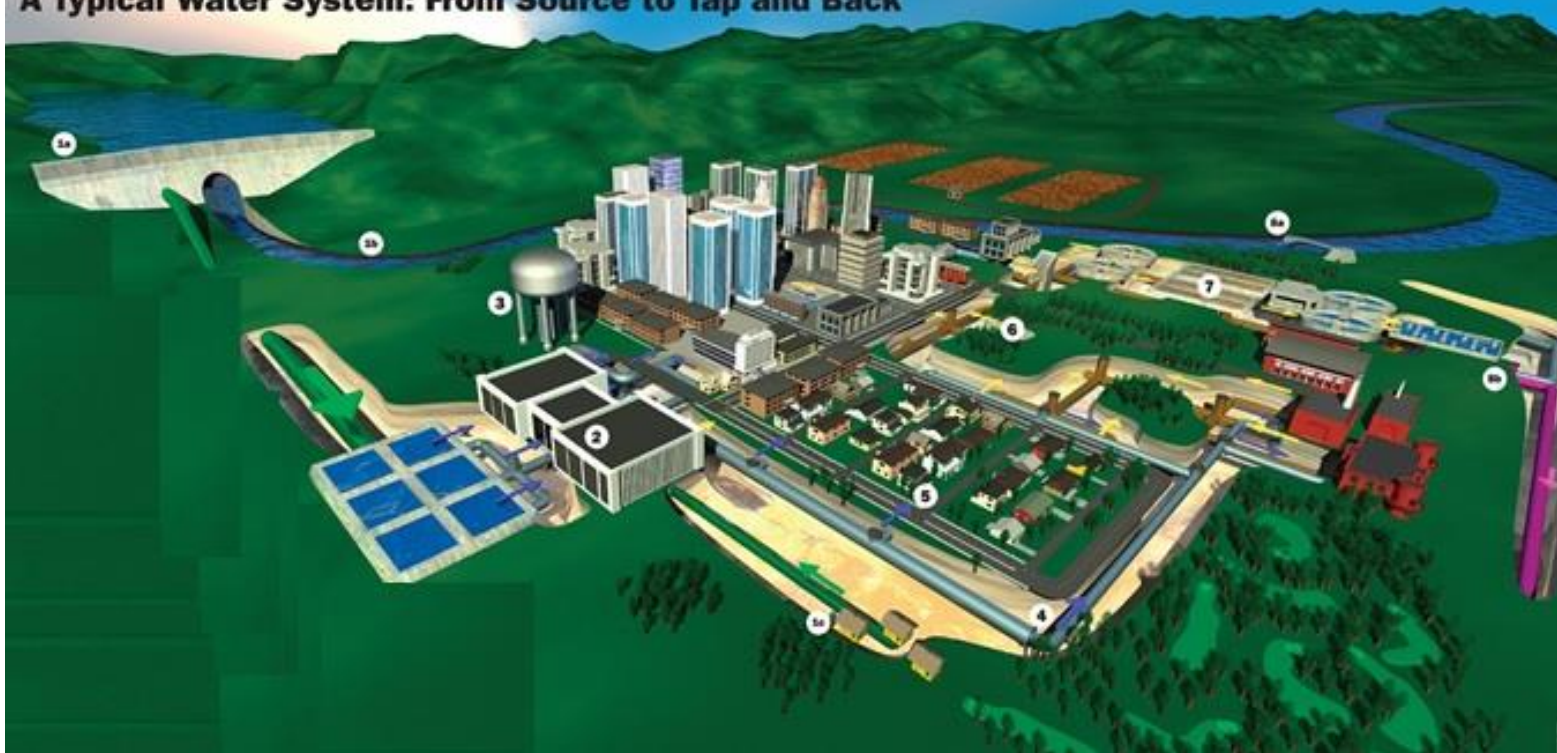


# PROTECTING SOURCE WATER

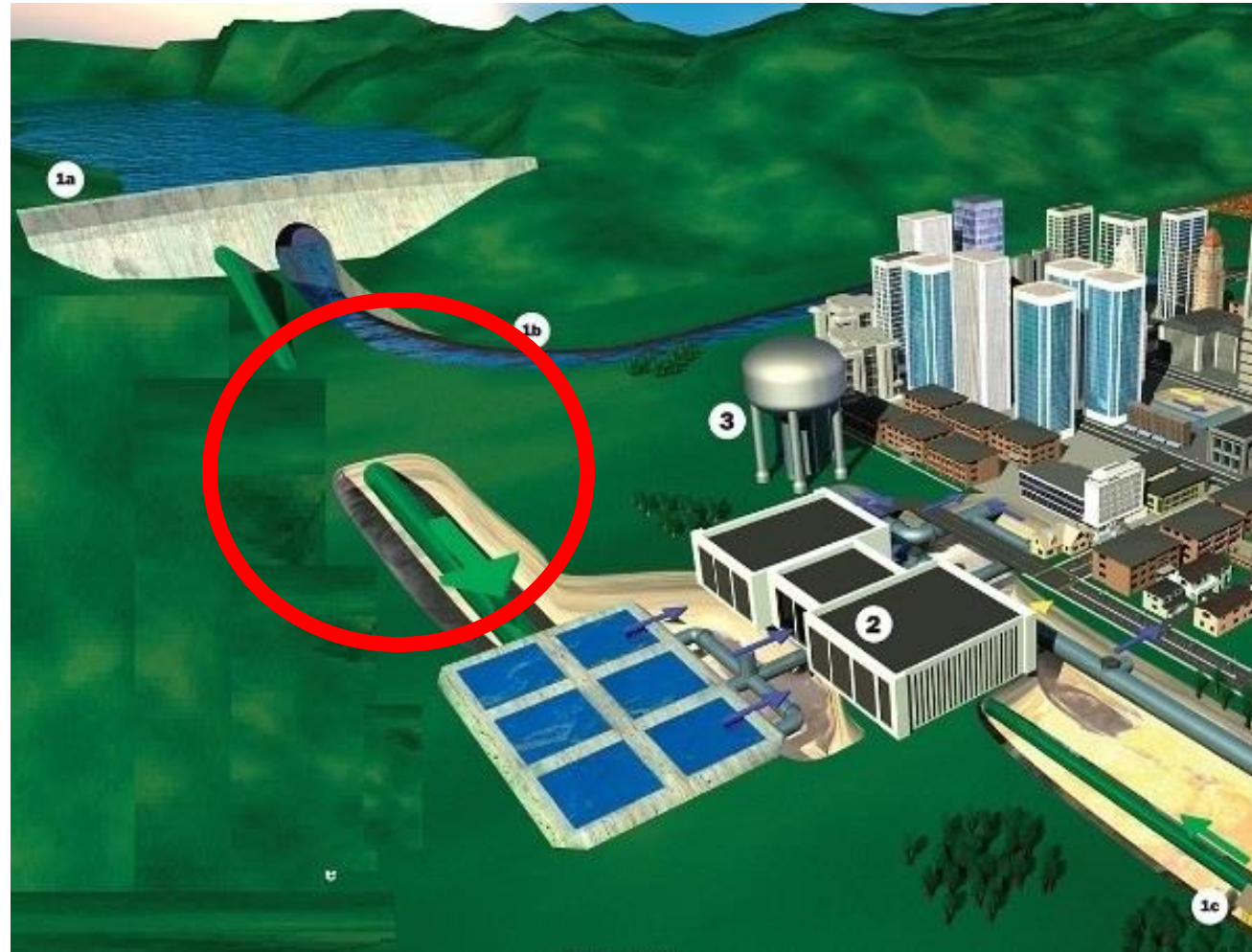
- There are 2 primary sources of water:
  - Surface water - water found above the Earth's surface such as in a lake, river, wetland, etc.
  - Groundwater - water found below the Earth's surface. Most water used for drinking water is found in an aquifer.
- **Source water is usually unsafe to drink. Do you know why?**

# How Water Works

**A Typical Water System: From Source to Tap and Back**



WHERE DOES THE WATER FROM MY TAP COME FROM?



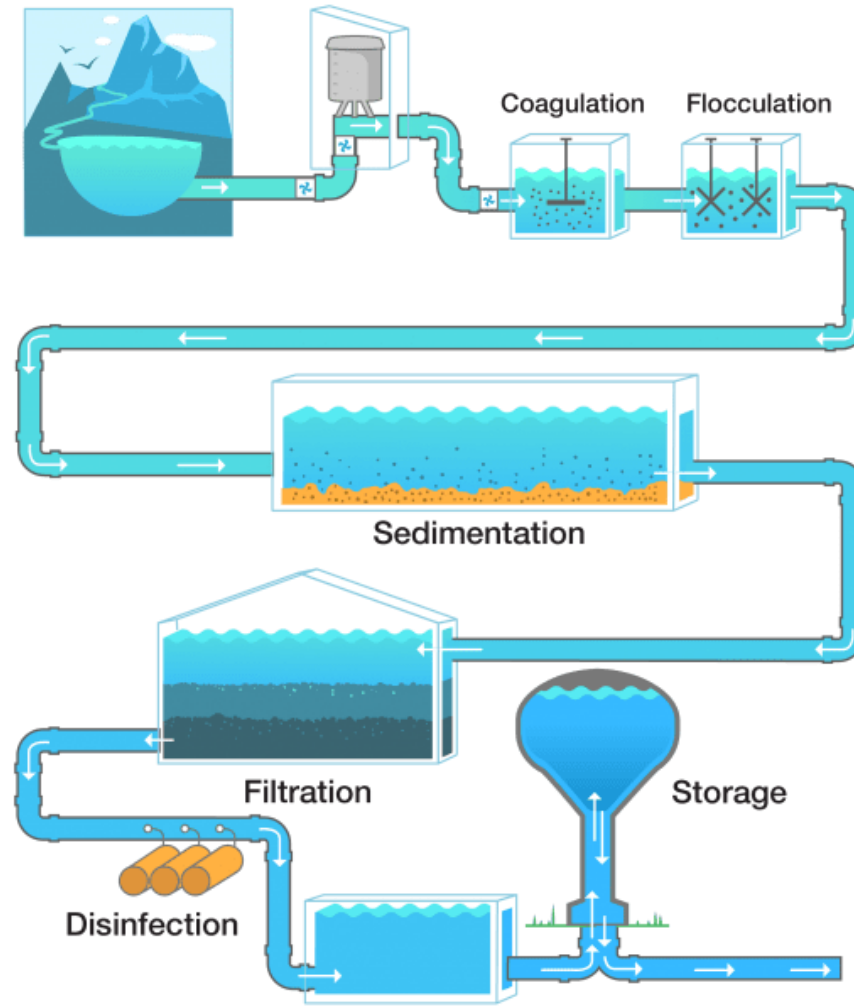
SOURCE WATER ENTERS A WATER TREATMENT PLANT



WATER IS TREATED IN A DRINKING WATER TREATMENT PLANT



# Water Treatment Steps





TREATED WATER IS STORED IN A WATER TOWER



TREATED WATER IS DISTRIBUTED TO HOMES

# WATER TREATMENT CAREERS AND MAJORS

- Plumbers – Trade school for plumbing
- Operators – 4 year degree or community college
- Water Utility Staff – 4 year degree
- Scientists – Environmental Science
- Engineers – Civil and Environmental Engineering
  
- [Day in the life of a Water Treatment Plant Operator - Bing video](#)

# WASTEWATER

# WHAT ARE THE SOURCES OF WASTEWATER?

- Homes – washing machine, toilet, sinks
- Industries – dairy, manufacturing
- Agricultural activities – runoff
- Contaminated stormwater

# HOW IS WASTEWATER TREATED?

- Wastewater is treated with similar processes to drinking water
- [How do wastewater treatment plants work? - Bing video](#)

# WATER TREATMENT CAREERS AND MAJORS

- Operators – 4 year degree or community college
- Scientists – Environmental Science
- Engineers – Civil and Environmental Engineering
- The primary job of wastewater utility staff is to safely convey and treat contaminated water so people don't get sick and fish and animals are not harmed.



# STORMWATER

Where does rainwater go?

# STORMWATER

- Stormwater management starts with managing what happens on the landscape.
- Because stormwater is generated from rainwater falling to the earth's surface, what that rainwater comes into contact with impacts what happens to the rainwater.
- Water resource professionals help determine what can be built, where it can be built, and how it is built. These same professionals also educate people on how their actions can affect the quality of the rainwater.
- Here is a video showing rainwater runoff and how human decisions can make rainwater cleaner or dirtier.
  - [Managing Stormwater Runoff - YouTube](#)

# WATER TREATMENT CAREERS AND MAJORS

- Operators – 4 year degree or community college
- Scientists – Environmental Science
- Engineers – Civil and Environmental Engineering
- Landscapers – 4 year degree
- City Planners – 4 year degree

# WATER CONSERVATION

# WHY SHOULD WE CONSERVE WATER?



# HOW CAN YOU CONSERVE WATER?

- Turn off the tap
- Water wisely
- Shorten showers
- Find the leaks
- Reuse



# WATER INDUSTRY CAREERS

Interested in working in the water/wastewater industry?

# WHY WORK IN THE WATER INDUSTRY?

- Water/Wastewater Utility Careers:
  - Stable jobs, can't outsource
  - Everyone needs clean, safe water
  - Great career growth
  - Excellent benefits, good pay
  - Current shortage of skilled workers





# GOOD PAY, GOOD BENEFITS, SECURE JOBS

- Most positions require a high school diploma or 2-year skilled technical degree.
- Most positions require licenses from the state. Able to obtain licensures while getting paid to work.
- 2022 National Average salary for water and wastewater treatment operators was \$55,690 per year.
- 2022 annual mean wage for operators in Minnesota was \$58,130-\$98,580.



# ADDITIONAL RESOURCES FOR TEACHERS AND STUDENTS

- DrinkTap.org: <http://www.drinktap.org>
- How Water Works: <http://www.awwa.org/resources-tools/water-knowledge/how-water-works.aspx>
- Only Tap Water Delivers: <http://www.awwa.org/resources-tools/public-affairs/communications-tools/only-tap-water-delivers/only-tap-water-delivers-materials.aspx>
- United States Environmental Protection Agency (EPA): <https://www.epa.gov/students>
- Work for Water: <http://www.awwa.org/resources-tools/water-knowledge/how-water-works.aspx>