

**IFSS Framework – Basic Level Gen Eds
B20 Plumbing**

Definition: Knowledge, skills, and abilities related to the delivery, distribution or storage of potable and non-potable water in a manufacturing food facility and retail food establishment.

Topic Area TLO (Terminal Learning Objective): Discuss how plumbing affects public health.

Topic Area ELOs (Enabling Learning Objective):

- Explain the significance of plumbing.
- Explain the regulatory significance of water systems.
- Consider water source
- Discuss agency authority related to plumbing.
- Identify plumbing issues.

Unit 1: Foundations	TLO Behavioral Anchors - not all-inclusive
<p>Definition: An introduction to plumbing systems to keep water and food safe.</p> <p>TLO: Discuss key concepts in plumbing.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Explain the public health significance of plumbing design. • Identify water source. • Describe the water system. • Describe the concept of backflow. • Differentiate between an indirect and direct connection. 	<ul style="list-style-type: none"> • The regulator can give examples of public health concerns related to poor or improper plumbing designs: <ul style="list-style-type: none"> a. Hazard b. Connection between safe and unsafe supplies c. Contaminating water source d. Contaminating food • The regulator can distinguish between a public and a private water supply. • The regulator can distinguish between potable and non-potable water. • The regulator can list some components of a water system: <ul style="list-style-type: none"> a. Pipes b. Pumps c. Tanks d. Fixtures e. Source • The regulator can describe the concept of backflow: <ul style="list-style-type: none"> a. Back siphonage b. Back pressure c. Prevention • The regulator can recognize examples of public health concerns related to poor or improper plumbing design. • The regulator can discuss the significance of a public and private water supply. • The regulator can discuss the significance of potable and non-potable water. • The regulator can elaborate on the concerns of individual water system components. • The regulator can give an example of indirect and direct connections: <ul style="list-style-type: none"> a. Air gap

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	<ul style="list-style-type: none"> b. Air break c. Tight connections/Fixed connection
<p>Unit 2: Water Source</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Knowledge related to water sources.</p> <p>TLO: Recognize the public health significance of protecting a water source.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Differentiate between public and private water supply systems. • List well construction considerations. • Identify types of treatment systems. 	<ul style="list-style-type: none"> • The regulator can give examples of the public health significance of unprotected water sources: <ul style="list-style-type: none"> a. Hazard b. Connection between safe and unsafe supplies c. Contaminating water source d. Contaminating food • The regulator can differentiate between public and private water supply systems: <ul style="list-style-type: none"> a. Municipal or Public b. Well or Private c. Other – Spring • The regulator can list well construction considerations: <ul style="list-style-type: none"> a. Pitless adapter b. Diversion ditches c. Fencing d. Drainage e. Covers or housing f. Vent screen g. Dug h. Drilled • The regulator can list different types of water treatment systems: <ul style="list-style-type: none"> a. UV systems b. Chlorinator c. Reverse Osmosis • The regulator can recognize examples of public health concerns related to unprotected water sources. • The regulator can match terms with images of water supply systems. • The regulator can match terms with images of well construction considerations.
<p>Unit 3: Wastewater System</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Knowledge related to wastewater systems.</p> <p>TLO: Discuss wastewater systems.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Identify wastewater systems. • Differentiate between public and private wastewater systems. 	<ul style="list-style-type: none"> • The regulator can identify wastewater systems: <ul style="list-style-type: none"> a. Public/municipal b. Private (septic) • The regulator can give examples of private wastewater systems: <ul style="list-style-type: none"> a. Septic b. Private wastewater treatment plants c. Holding tanks

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<p>Unit 4: Backflow Prevention</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Knowledge of backflow prevention methods.</p> <p>TLO: Discuss methods for preventing contamination.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Define cross connection. • Discuss methods for preventing cross connections. • Identify types of backflow prevention devices. • Discuss considerations for selecting a backflow prevention device. 	<ul style="list-style-type: none"> • The regulator can define cross connection: <ol style="list-style-type: none"> a. Water b. Waste • The regulator can list methods for preventing cross connections: <ol style="list-style-type: none"> a. Air gap b. Air break c. Backflow prevention devices • The regulator can give examples of backflow prevention devices: <ol style="list-style-type: none"> a. Hose bib vacuum break b. Dual check valve with an atmospheric vent c. Reduced pressure zone backflow preventer (RPZ) d. Check valves e. Pressure vacuum breakers • The regulator can list considerations for selecting backflow prevention devices: <ol style="list-style-type: none"> a. Backflow <ul style="list-style-type: none"> ▪ Back pressure ▪ Back siphonage b. Continuous or non-continuous pressure c. Low or high hazard • The regulator can recognize methods for preventing cross connections. • The regulator can differentiate between an air gap and an air break. • The regulator can recognize types of backflow prevention devices.
<p>Unit 5: Jurisdictional Authority</p>	<p>TLO Behavioral Anchors - not all-inclusive</p>
<p>Definition: Knowledge related to agency authority over water, waste water, and plumbing systems.</p> <p>TLO: Describe agency authority.</p> <p>ELOs:</p> <ul style="list-style-type: none"> • Identify agency’s authority pertaining to water systems. • Identify agency’s authority pertaining to wastewater systems. 	<ul style="list-style-type: none"> • The regulator can identify which agencies may have authority pertaining to water systems: <ol style="list-style-type: none"> a. Local b. State c. Federal • The regulator can identify which agencies may have authority pertaining to wastewater systems: <ol style="list-style-type: none"> a. Local b. State c. Federal • The regulator can identify which agencies may have authority pertaining to plumbing systems: <ol style="list-style-type: none"> a. Local b. State c. Federal • The regulator can list which regulations are used by the

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<ul style="list-style-type: none">• Identify agency's authority pertaining to plumbing systems.	<p>regulator's jurisdiction.</p> <ul style="list-style-type: none">• The regulator can list which regulations are used by the regulator's jurisdiction.
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