**WHAT IS BACKFLOW?**

When water (and anything in it) travels in the “wrong” direction or a direction other than the intended one.

**RISKS FROM BACKFLOW**

- Microbial contamination of a water system from pathogenic viruses (norovirus), bacteria (toxin-producing *E. coli*, *Listeria monocytogenes*, *Salmonella*, and *Shigella*) and protozoans (*Cryptosporidium*, *Cyclospora*, and *Giardia*).
- Chemical contamination from pesticides (insecticides, herbicides, fungicides), metals (copper), nitrates, and nitrites.
- These risks can be life-threatening to consumers, causing acute and/or chronic health effects such as vomiting, diarrhea, skin burns and rashes, and damage to the kidneys and liver.

**HOW DOES BACKFLOW OCCUR?**

- Water backflow usually results from either *backpressure* or *backsiphonage*.
- **Backpressure** is water backflow resulting from imbalance in water pressures. The downstream pressure is greater than the supply pressure, reversing the flow of water in your plumbing system, and pushing water from your plumbing system back into the clean water supply.
- **Backsiphonage** happens when the supply pressure is reduced, such as when another hydrant in the system is turned on, and the newly opened hydrant draws water away from the first hydrant. As a result, flow is reversed and a siphoning effect occurs.
WHAT IS A BACKFLOW PREVENTER?

- A check valve, or a system of valves, installed into the feed line of a water system that allows water to go through in one direction, but prevents it from going backwards in the opposite direction.
  - Install preventers on the line that leads to the cross-connection or potential cross-connection.
  - Types of backflow preventers include control valves, atmospheric vacuum breaker (AVB) valves, pressure vacuum breakers, anti-siphon valves, and double check valve assemblies.

DO YOU NEED A BACKFLOW PREVENTER?

If you are covered by the Food Safety Modernization Act Produce Safety Rule:

- §112.41 states that "All agricultural water must be safe and of adequate sanitary quality for its intended use."
- §112.133(d) states your plumbing must "Not allow backflow from, or cross connection between, piping systems that discharge waste water or sewage and piping systems that carry water used for a covered activity, for sanitary operations, or for use in hand-washing facilities."
- In addition, under §112.42(c) you are required to "Adequately maintain all agricultural water sources to the extent they are under your control (such as wells). Such maintenance includes:
  - Regularly inspecting each source to identify any conditions that are reasonably likely to introduce known or reasonably foreseeable hazards into or onto covered produce or food contact surfaces;
  - Correcting any significant deficiencies (e.g. repairs to well cap, well casing, sanitary seals, piping tanks and treatment equipment, and control of cross-connections); and
  - Keeping the source free of debris, trash, domesticated animals, and other possible sources of contamination of covered produce to the extent practicable and appropriate under the circumstances."

REFERENCES