VILLAGE OF BANNOCKBURN

ORDINANCE NO. 95-01

AN ORDINANCE AMENDING ORDINANCE NO. 77-8.22.1
RELATING TO CROSS-CONNECTION CONTROL

Adopted by the
President and Board of Trustees
of
the Village of Bannockburn
this 27th day of February, 1995

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and authority of the Village of Bannockburn
Lake County, Illinois
this ____ day of __________, 1995
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__ RELATING TO CROSS-CONNECTION CONTROL__

BE IT ORDAINED BY THE PRESIDENT AND BOARD OF TRUSTEES OF THE
VILLAGE OF BANNOCKBURN, COUNTY OF LAKE, STATE OF ILLINOIS, AS
FOLLOWS:

SECTION ONE: That Ordinance No. 77-8.22.1 of the Village of
Bannockburn, known as the Water Ordinance, as amended, be and the
same is hereby amended by adding a new Article VII thereto, so that
said new article shall hereinafter be and read as follows:

ARTICLE VII--CROSS-CONNECTIONS

Sec. 7-701. Definitions.

Unless otherwise expressly stated or the context clearly
indicates a different intention, the following terms shall,
for the purpose of this article, have the meanings indicated
in this section:

Agency. The term "Agency" shall mean the Illinois
Environmental Protection Agency.

Agency’s regulations. The term "Agency’s regulations"

Approved. The term "approved" shall mean those backflow
prevention devices or methods approved by the Research
Foundation for Cross-Connection Control of the University of
Southern California, the American Water Works Association, the
American Society of Sanitary Engineering, the American
National Standards Institute, or certified by the National
Sanitation Foundation.

Auxiliary water supply. The term "auxiliary water
supply" shall mean any water source or system on or available
to any premises, other than the waterworks system, and
includes the water so supplied. These auxiliary waters may
include water from a public water supply system; or water from
a private or emergency water supply system; or water from a
source such as wells, lakes, or streams; or process fluids; or
used water. Auxiliary waters may be polluted or contaminated
or objectionable or constitute a water supply system over
which the Village does not have control.

Backflow. The term "backflow" shall mean the flow of
water or other liquids, mixtures, or substances into the
distribution pipes of a potable water supply system from any
source other than the intended source of the potable water supply system.

Back siphonage. The term "back siphonage" shall mean a type of backflow in a pipe or plumbing device in which used, contaminated, or polluted water flows back from a receptacle or other source into a negative pressure in such pipe or plumbing device.

Contamination. The term "contamination" shall mean an impairment of the quality of the waterworks system or other potable water supply system by entrance of any substance to a degree that could create a health hazard.

Cross-connection. The term "cross-connection" shall mean any physical connection or arrangement between two otherwise separate piping systems, one of which contains potable water and the other a substance of unknown or questionable safety or quality, whereby there may be a flow from one system into the other. A direct cross-connection is a cross-connection formed when the waterworks system or other potable water supply system is physically joined to a source of unknown or unsafe substance. An indirect cross-connection is a cross-connection through which an unknown substance can be forced, drawn by a vacuum or otherwise introduced into the waterworks system or other water supply system.

Cross-connection control device. The term "cross-connection control device" shall mean any approved device, method, or type of construction intended to prevent backflow into the waterworks system or other potable water supply system. The term "backflow prevention device" shall be included in the definition of cross-connection control device. All devices used for backflow prevention in Illinois must meet the standards of the Illinois Plumbing Code and the Agency.

Cross-connection control device inspector. The term "cross-connection control device inspector" shall mean any person approved by the Agency who is responsible for inspecting cross-connection control devices.

Customer. The term "customer" shall mean the owner, occupant, and/or person in possession, charge, or control of any premises.

Customer’s water system. The term "customer’s water system" shall include all parts of the water facilities beginning at the service connection used to convey water from the waterworks system to the premises, which facilities are deemed to be operated, controlled, or owned by the customer.
Double check valve assembly. The term "double check valve assembly" shall mean an assembly composed of single, independently acting check valves approved under ASSE Standard 1015. A double check valve assembly must include tight shutoff valves located at each end of the assembly and suitable connections for testing the water-tightness of each check valve.

Fire Department. The term "fire department" shall mean the Deerfield-Bannockburn Fire and Police Department.

Fixed air gap. The term "fixed air gap" shall mean the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water and the flood level rim of the receptacle.

Health hazard. The term "health hazard" shall mean any condition, device, or practice in a water system or its operation resulting in a real or potential danger to a person's health and well-being. The term "severe" as used to qualify "health hazard" means a hazard to the health of the user that could be expected to result in death or a significant reduction in the quality of life.


Inspection. The term "inspection" shall mean a plumbing inspection to examine carefully and critically all materials, fixtures, piping and appurtenances, appliances, and installations of a plumbing system for compliance with the requirements of the Illinois Plumbing Code and this article.

Non-potable. The term "non-potable" shall mean the quality of water that does not meet public health standards for drinking water and is not suitable for human consumption.

Pollution. The term "pollution" shall mean the presence of any foreign substance (organic, inorganic, radiological, or biological) in water that tends to degrade its quality so as to constitute a hazard or impair the usefulness of the water.

Potable. The term "potable" shall mean the quality of water that meets public health standards for drinking water and is suitable for human consumption.

Premises. The term "premises" shall include any lot or part of a lot, any building or part of a building, or any parcel or tract of land whatsoever.
Process fluids. The term "process fluids" shall mean any fluid or solution that may be chemically, biologically, or otherwise contaminated or polluted in a form or concentration such as would constitute a health, pollutional, or system hazard if introduced into the waterworks system, a customer’s water system, or any other potable water supply system. This includes, but is not limited to:

a. polluted or contaminated water;
b. used water originating from the waterworks system which may have deteriorated in sanitary quality;
c. contaminated natural water taken from wells, lakes, streams, or irrigation systems;
d. chemicals in solution or suspension;
e. oils, gases, acids, alkalis and other liquid and gaseous fluids used in industrial or other processes, or for firefighting purposes.

Reduced pressure principle backflow prevention device. The term "reduced pressure principle backflow prevention device" shall mean a device containing a minimum of two independently acting check valves together with an automatically operated pressure differential relief valve located between the two check valves and approved under ASSE Standard 1013. During normal flow and at the cessation of normal flow, the pressure between these two checks shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve, by discharging to the atmosphere, shall operate to maintain the pressure between the check valves at less than the supply pressure. The unit must include tightly closing shutoff valves located at each end of the device, and each device shall be fitted with properly located test cocks.

Service connection. The term "service connection" shall mean the opening, including all fittings and appurtenances, at a water main of the waterworks system through which water is supplied to the customer.

Survey. The term "survey" shall mean the collection of information regarding the location of all connections between a customer’s water system and the waterworks system and must include the location, type, and most recent inspection and testing date of all cross-connection control devices and methods located within that customer’s premises. The survey must be in written form, and should not be an actual plumbing inspection.
Used Water. The term "used water" shall mean any water supplied by the waterworks system after it has passed through the service connection and is no longer under the control of the Village.

Village. The term "Village" shall mean the Village of Bannockburn.

Water fund. The term "water fund" shall mean the monies or revenues of every kind arising by the operation of this ordinance or any other ordinance relating to the waterworks system.

Water supply system. The term "water supply system" shall mean any water source, supply, or system, including all pipes, fittings, and control valves, as well as the water so supplied. The term "water supply system" shall not include the waterworks system, however.

Waterworks system. The term "waterworks system" shall include the entire system of pipes, hydrants, boxes, cocks, taps, meters, connections, reservoirs, tanks, engines, property, and all appurtenances thereto, whereby water is or may be supplied to the public or to private parties within the Village, which system is operated, controlled, or owned by the Village. The term "water service system" shall be included in the definition of waterworks system.

Sec. 7-702. Persons Authorized to Perform Work.

No private supply pipe shall be laid or connection made thereto by any person other than a duly licensed and bonded plumber acting under authority of a permit issued for the laying of such private supply pipe or connection therewith or thereto as provided for in this article.

Sec. 7-703. Illinois Plumbing Code.

Subpart J of the Illinois Plumbing Code is hereby adopted hereto and by this reference incorporated herein and made a part hereof.

Sec. 7-704. Cross-Connection Prohibited.

A. No-Cross-Connection. Connections between the waterworks system or other potable water supply systems and other systems or equipment containing non-potable water or other substances of unknown or questionable quality are prohibited except when and where approved cross-connection control devices or methods are installed, tested, and maintained to insure proper operation on a continuing basis. No physical connection shall be permitted between the
waterworks system or any potable water supply system and any auxiliary water supply not of equal or better bacteriological and chemical quality as determined by inspection and analysis by the Agency. There shall be no arrangement or connection by which an unsafe substance may enter the waterworks system or other potable water supply system or an auxiliary water supply approved by the Water Commissioner and the Agency.

B. No Auxiliary Cross-Connection. No person, firm, or corporation shall establish or maintain, or permit to be established or maintained, any connection whereby an auxiliary water supply may enter the waterworks system or the customer’s water system, unless such auxiliary water supply and the method of connection and use of such supply shall have been approved by the Water Commissioner and the Agency.

Sec. 7-705. Cross-Connection Control Devices.

A. Approved Devices Only. Only approved cross-connection control devices or methods can be used to satisfy the requirements of this article.

B. Type of Protection. The type of protection required shall depend on the degree of hazard which exists as follows:

1. An approved fixed air gap separation shall be installed where the waterworks system may be contaminated with substances that could cause a severe health hazard.

2. An approved fixed air gap separation or an approved reduced pressure principle backflow prevention device shall be installed where the waterworks system may be contaminated with a substance that could cause a system or health hazard.

3. An approved fixed air gap separation or an approved reduced pressure principle backflow prevention device or a double check value assembly shall be installed where the waterworks system may be polluted with substances that could cause a pollution hazard not dangerous to health.

4. An approved fixed air gap separation or an approved reduced pressure principle backflow prevention device shall be installed on premises where it is impractical to determine whether cross-connections exist or is impossible to make a complete cross-connection survey or on premises having a repeated
history of cross-connections being established or re-established.

C. Fire Safety Systems. Reduced pressure principle backflow prevention devices shall be installed on fire safety systems connected to the waterworks system when:

1. The fire safety system contains anti-freeze, fire retardant, or other chemicals;

2. Water is pumped into the fire safety system from a source other than the waterworks system;

3. Water flows by gravity from a non-potable source or water can be pumped into the fire safety system from any source other than the waterworks system; or

4. There is a connection whereby a source other than the waterworks system can be introduced into the fire safety system.

D. All Other Systems. All other fire safety systems connected to the waterworks system shall be protected by a double check valve assembly on metered service lines and a double detector check valve assembly on unmetered service lines.

E. Other Devices. The type of cross-connection control devices required for any other potable water supply system shall be equivalent to the devices used to protect the waterworks system from similar hazards, unless the Water Commissioner permits otherwise.

F. Accessibility. All cross-connection control devices shall be accessibly located for observation, maintenance, testing, and replacement services.

Sec. 7-706. Installation, Inspection, Maintenance, and Repair of Cross-Connection Control Devices.

A. Prevention; Removal of Cross-Connection. The customer shall prevent backflow and back siphonage into the waterworks system by ensuring that either all cross-connections are removed or cross-connection control devices are installed, inspected, maintained, and repaired.

B. General Installation Requirements. The customer shall ensure that a cross-connection control device be installed wherever necessary to prevent cross-connections to the waterworks system or any other potable water supply
Cross-connection control devices shall be installed and maintained as provided for in the Illinois Plumbing Code and the Agency's regulations and in accordance with the manufacturer's instructions. The manufacturer's maintenance manual shall be available on the premises.

C. Specific Conditions Requiring Installation. In addition to the foregoing, the customer shall ensure that a cross-connection control device be installed on each service line to a customer's water system serving premises having any of the following conditions:

1. Premises for which the Water Commissioner makes an independent determination that actual or potential hazards to the waterworks system exist.

2. Premises having an auxiliary water supply, unless such auxiliary supply is accepted as an additional source by the Water Commissioner and the source is approved by the Agency.

3. Premises on which any substance is handled which can create an actual or potential hazard to the waterworks system. This shall include premises having sources or systems containing process fluids or waters originating from the waterworks system which are no longer under the sanitary control of the Water Commissioner.

4. Premises having internal cross-connections that, in the judgment of the Water Commissioner and/or the cross-connection control device inspector, are not correctable.

5. Premises having intricate plumbing arrangements which make it impractical to determine whether or not cross-connections exist.

6. Premises where, because of security requirements or other prohibitions or restrictions, it is impossible or impractical to make a complete cross-connection survey.

7. Premises having a repeated history of cross-connections being established or re-established.

D. Specific Service Lines Requiring Installation. An approved cross-connection control device shall be installed on
each service line to a customer’s water system serving, but not necessarily limited to, the following types of facilities, unless the Water Commissioner determines that no actual or potential hazard to the waterworks system exists:

1. Hospitals, mortuaries, clinics, nursing homes;
2. Laboratories;
3. Piers, docks, waterfront facilities;
4. Sewage treatment plants, sewage pumping stations, or storm water pumping stations;
5. Food or beverage processing plants;
6. Chemical plants;
7. Metal plating industries;
8. Petroleum processing or storage plants;
9. Radioactive material processing plants or nuclear reactors;
10. Car washes;
11. Pesticide, herbicide, or extermination plants and trucks;
12. Farm service and fertilizer plants and trucks;
13. All underground sprinkler systems.

Nothing in this section shall be construed to authorize a use of any premises not otherwise permitted by the zoning regulations of the Village.

E. **Inspections; Maintenance.** Cross-connection control devices shall be inspected at the time of installation and at least annually, or more frequently if recommended by the manufacturer, by a cross-connection control device inspector. The inspection of mechanical devices shall include physical testing in accordance with the manufacturer’s instructions.

F. **Tagging.** Each cross-connection control device shall have a tag attached listing the date of the most recent test or visual inspection, the name of the cross-connection control device inspector, and the type and date of repairs.
G. Maintenance Log. A maintenance log shall be maintained and include:

1. Date of each test or visual inspection;
2. Name and approval number of the person performing the test or visual inspection;
3. Test results;
4. Repairs or servicing required;
5. Repairs and date completed; and
6. Servicing performed and date completed.

The customer shall forward a copy of this maintenance log to the Water Commissioner within 14 days after its completion.

H. Costs. The installation, inspection and maintenance of all cross-connection control devices shall be at the sole cost and expense of the customer. Whenever cross-connection control devices required by these regulations are defective, they shall be repaired or replaced at the sole cost and expense of the customer without delay.

I. No By-pass or Removal. Cross-connection control devices shall not be bypassed, made inoperative, removed, or otherwise made ineffective without specific authorization by the Water Commissioner.

Sec. 7-707. Surveys and Investigations.

A. Surveys; Investigations. Water Commissioner shall cause surveys and investigations to be made of all premises served by the waterworks systems to determine whether actual or potential hazards to the waterworks system may exist. A reasonable fee covering the cost of the survey or investigation may be levied against each customer whose premises are surveyed and investigated. Such surveys and investigations shall be made a matter of public record and shall be repeated at least once every two years, or more often as the Water Commissioner shall deem necessary. Such surveys may be conducted by telephone, mail, or personal visit to the premises and are not intended to include an actual visual inspection of piping or plumbing systems. Records of such surveys shall be maintained and available for review for a period of at least five years.

B. Information. On request by the Water Commissioner, the customer shall furnish information regarding the piping
system or systems or water use within the customer's premises. The refusal of such information, when requested, shall, within the discretion of the Water Commissioner, be deemed evidence of the presence of improper connections as provided in this article.

C. Customer Surveys and Inspection. The customer shall arrange periodic surveys of water use practices on his or her premises to determine whether there are actual or potential cross-connections to the customer's water system through which contaminants or pollutants could backflow into the customer's water system or the waterworks system. Such surveys shall be conducted by a duly licensed and bonded plumber and shall be at the sole cost and expense of the customer, and a copy of the results shall be forwarded to the Water Commissioner.

Sec. 7-708. Booster Pumps.

When a booster pump has been installed on the service line to or within any premises, such pump shall be equipped with a low pressure cut-off device designed to shut off the booster pump when the pressure in the service line on the suction side of the pump drops to 20 psi or less. It shall be the duty of the customer to maintain the low pressure cut-off device in proper working order and to certify to the Water Commissioner, at least once a year, that the device is operable.

Sec. 7-709. Cross-Connection Violations.

A. Access to Premises. The customer's premises shall be open at all reasonable times to the cross-connection control device inspector and the Water Commissioner or his designees for the purposes of verifying the presence or absence of cross-connections; inspecting the installation, testing, maintenance, and repair of cross-connection control devices; verifying information submitted by the customer regarding the required cross-connection control device inspection; and ensuring that the requirements of this article have been properly executed.

B. Notice to Install; Compliance. If, in accordance with the Illinois Plumbing Code or in the judgment of the Water Commissioner, a cross-connection control device is necessary for the safety of the waterworks system, the Water Commissioner may, two weeks after serving a written notice on the customer to install a cross-connection control device, deny or discontinue water service to such customer's premises, and wherever water service is denied or discontinued it shall not be turned on again until the cross-connection control device shall be properly installed. The Water Commissioner may, after two weeks written notice to a customer, deny or
discontinue the water service to any customer's premises wherein any cross-connection control device required by this article is not installed, tested, maintained, or repaired in a manner acceptable to the Water Commissioner, or if it is found that the cross-connection control device has been removed or bypassed, or if an unprotected cross-connection exists on the premises, or if a low pressure cut-off or other device required by this article is not installed and maintained in working order, or if any person is found to be violating any provision of this article.

C. **Emergencies.** If, in the judgment of the Water Commissioner an emergency exists whereby the waterworks system is immediately threatened, the Water Commissioner shall have the right to enter the premises of a customer, providing oral notice only if such is possible, and may immediately without any notice deny or discontinue the water supply to a customer's premises. In the event of such denial or discontinuance, the Water Commissioner shall as soon as practical serve written notice as herein provided.

D. **Notices.** The written notice herein provided for shall state the nature of the request or violation and shall provide a reasonable time limit for the satisfactory correction thereof. This written notice may be served by personal service or by mailing such notice upon the customer.

E. **Restoration of Service.** Water service that has been denied or discontinued shall not be restored until the customer has corrected or eliminated any conditions or defects in conformance with this article and to the satisfaction of the Water Commissioner, and a reconnection fee in the amount of $100.00 shall have been paid.

F. **No Liability of Village.** Neither the Village, the Water Commissioner, nor their agents or assigns shall be liable to any customers of the waterworks system for any injury, damages, or lost revenue which may result from the termination of a customer's water supply, whether or not such termination was with or without notice.

G. **Liability of Customer or Others.** Any person violating any of the provisions of this article, in addition to the foregoing, shall become liable to the Village for any expense, loss, or damage occasioned by the Village by reason of such violation, whether the same was caused before or after notice. If contamination of the waterworks system occurs through an illegal cross-connection or an improperly installed, maintained, or repaired cross-connection control device, or a cross-connection control device which has been bypassed, the customer responsible for such contamination
shall bear the cost of clean-up of or repair to the waterworks system.

SECTION TWO: In the case of any inconsistency between any provision of this Article and any provision of any other ordinance or regulation, the provision imposing the greater requirements shall be controlling.

SECTION THREE: Article VII, entitled "Penalty, Repealer and Effective Date," of Ordinance No. 77-8.22.1, as amended, shall hereinafter be designated Article VIII, and Sections 7-701 through 7-703 thereof shall hereinafter be numbered Sections 8-801 through 8-803, respectively.

SECTION FOUR: This ordinance shall be in full force and effect from and after its passage, approval, and publication in the manner provided by law.

PASSED this _________ day of ______________, 1995.

AYES:

NAYS:

ABSENT:

APPROVED this _______ day of ______________, 1995.

__________________________
Village President

ATTEST:

__________________________
Village Clerk