

City of Dayton

416 Ferry Street, Dayton Oregon (503) 864-2221 www. daytonoregon.gov

### **Backflow Prevention Permit** – *Submittal Information*

### **General Information**

The City of Dayton requires residents to obtain Plumbing Permits for backflow devices when installing sprinkler systems and any other possible cross connection hazard that may cause contamination to enter the City's drinking water supply. Backflow prevention permits can be issued over the counter and digital permits can be submitted to permits@daytonoregon.gov.

### **Permit Submittal Requirements**

- Backflow Prevention Permit Application. *Original signatures for all property owners must be provided*. This information may be reproduced so please print clearly using black or blue ink. Do not use pencil.
- Permit fee, made payable to the City of Dayton.

### **Process** (After your permit has been issued)

- Backflow Device Installation
  - ✓ Backflow devices can only be installed by the Owner of the Property or a State Licensed Plumber or Contractor.
  - ✓ Contractor License information will be verified through the State of Oregon's Contractors Board.
  - ✓ Contractors are required to register their business with the City of Dayton. If your contractor is not registered they will be asked to fill out the proper forms and submit a registration fee before work can be started.

### Backflow Device Testing

- ✓ After your backflow device has been installed you will need to have it tested by a Backflow Device Tester.
- ✓ Backflow Device Testers are required to be licensed by the State of Oregon and Registered with the City of Dayton. A list of City of Dayton's certified Backflow Testers is provided for you. You are welcome to use a tester that is not listed with the City, however they will need to register their business with the City and provide all the necessary paper work, before they can test backflow devices within the City of Dayton.
- ✓ The City of Dayton contracts Backflow Testing with A1 Backflow Services. If you are interested in signing up for our Automatic Backflow Testing Program, we would be happy to set up your initial backflow test for you.
- ✓ Once your backflow device has passed its test, the Tester will give you a Test Report and a copy of your test report will be sent to the City of Dayton. You will need to show the test report to the Building Inspector in order for your device to be approved.

Required Backflow Inspection

- ✓ After your backflow device has been tested, you will need to contact the City of Dayton's Building Inspector and request an inspection.
- $\checkmark$  To request an inspection call (503) 554-7714 and leave a message.
- ✓ You will need to show the Building Inspector your copy of the Backflow Test Report.
- ✓ Once your Backflow Device has been inspected and approved, your permit is complete.

### **Annual Backflow Testing**

In compliance with Oregon State Law and City of Dayton policy, all utility customers who have backflow assembly devices installed are required to have certified inspections and operation tests made at least once annually per each device.

To help offset the cost of backflow testing the City of Dayton offers utility customers a reduced price testing alternative. Participants will have their backflow device tested annually, at a reduced price, with the charges for testing billed on their water/sewer statement one time per year. A copy of the consent to test backflow devices is included with your packet.

If you are not interested in the Automatic Backflow Testing Program it will be the responsibility of the Water Customer to arrange for annual testing of any backflow devices that are attached to the City's water system.

### Plumbing Permit Fee Table Attachment B - *Resolution 2009/10-04* - Adopted August 3, 2009

ONE/TWO FAMILY DWELLINGS	FEE
For One Bath	\$168.94
For Two Baths	\$223.44
For Three Baths	\$277.94
For Four Baths	332.44
For Five Baths	\$392.39
For each additional bath beyond 5	\$44.00
For an additional kitchen beyond the first kitchen	\$44.00
Additions and Repairs	\$16.35 per Fixture
Water Service	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Back Flow Device	\$44.00
Sanitary Sewer	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Storm Sewer	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Alternate Water Heating	\$49.05
COMMERCIAL/INDUSTRIAL	FEE
2 – 10 Fixtures	\$240.00
More than 10 Fixtures	\$20.00 per fixture
Additions and Repairs	\$54.50 per fixture up to 3; \$16.35 per fixture over 3
Water Service	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Sanitary Sewer	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Storm Sewer	\$44.00 for first 100 feet; \$27.25 for each additional 100 feet or fraction thereof
Alternate Water Heating	\$49.05
Plan Review Fees (residential & commercial)	Shall be equal to 30 percent of the permit fees

The following additional plumbing related fees shall apply:

• The fees associated with prefab structures shall be 50 percent of the plumbing permit fee.

Plumbing Fees Associated with Med-Gas		
\$1.00 - \$25,000	\$219.00 + \$1.00 per outlet	
\$25,000 - \$50,000	\$221.90 for the first \$25,000 plus \$5.85 for each additional \$1,000 or fraction thereof, to and including \$100,000	
\$50,001 - \$100,000	\$368.15 for the first \$50,000 plus \$3.90 for each additional \$1,000 or fraction thereof	
\$100,000 and above	\$563.15 for the first \$100,000 plus \$3.15 for each additional \$1,000 or fraction thereof	

• One and Two Family Rain Drains

	Commerc	ial/Industrial – Rain Drains	
1 – 3 Down Spouts	\$44.00	4 or more Down Spouts	\$60.00

### **Building Permit Application**



City of Dayton PO Box 339 - 416 Ferry Street Dayton OR 97114 503 864-2221 - permits@daytonoregon.gov

NEWBERG PERMIT #	
Dayton Permit #	
Date Submitted:	
Date Issued:	Issued By:

This permit is issued under OAR 918-460-0030 and Chapter 7 of the Dayton Land Use and Planning Code. Permits expire if w started within 180 days of issuance or if work is supended for 180 days. Credit card payments are not accepted for Building Pe

□    Structural    □    Residential    □    Commercial    □    Plan Review      □    Multi-Family    □    Industrial    □    Backflow Dev.      □    Plumbing    Multi-Family    □    Government    Addition      □    Demolition    Other    □    Addition    Mechanical Fees      Special Zones:    □    Flood Plain    Stope    Other    System Development Charge's      Site Address:    JOB SITE INFORMATION    I)    Dobescription (be specific):    2)      Ib Description (be specific):    2)    TOTAL AMOUNT DUE      Construction Excise Tax/School District    PAYMENT RECORD      House Sq Feet:    Garage Sq Feet:    DATE    AMOUNT RECEIPT #      □    Applicant    PROPERTY OWNER INFORMATION    Name:    Parter Construction Excise Tax/School District      □    Applicant    State:    Zip:    DATE    AMOUNT RECEIPT #      □    Applicant STRUCTURAL CONTRACTOR INFORMATION    Parter MECHANICAL PERMIT F      Business Name:    CCB #:    Zip:    Plan Review Fees 65%    S      Gity:    State:    Z		TYPE OF WORK	- Check all that app	bly	-	FOR CITY OF	DAYTON U
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Email:    Total Permit Fees    \$      Applicant    PLUMBING CONTRACTOR INFORMATION    PLUMBING PERMIT FE      Business Name:    Permit Fee    \$      Mailing Address:    State Surcharge    \$	Phone:		CCB #:		Other:		\$
Applicant    PLUMBING CONTRACTOR INFORMATION    PLUMBING PERMIT FE      Business Name:    Permit Fee    \$      Mailing Address:    State Surcharge    \$	Email:				Tot	al Permit Fees	\$
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City:State:Zip:Plan Review Fees 30%\$	City:		State:	Zip:	Plan Review	Fees 30%	\$
Phone: CCB #: Other: \$	Phone:		CCB #:		Other:		\$
Email: Total Permit Fees \$	Email:				Tot	al Permit Fees	\$

Applicant Signature

Print Name

Date

I hereby state that I have read and understand both sides of this application and the information provided on both sides is correc

Page 2					
Applicant	ARCHITECT INFO	RMATION	SYSTEM	A DEVELO	PMENT CH
Business Name:			Water	4,242	\$
Mailing Address:			Sewer	7,564	\$
City:	State:	Zip:	Streets/Storm	1,125	\$
Phone:	CCB #:		Parks	100	\$
Email:			Total Ar	nount Due:	\$
OTH	<b>ER/ADDITIONAL INFORM</b>	IATION	CON	STRUCTIO	ON EXCISE [
Business Name:			House Square Fe	et	x \$1.20 =
Mailing Address:			Garage Square F	eet	x \$ .60 =
City:	State:	Zip:	Accessory Struct	ure Square F	<sup>7</sup> eet y
Phone:	CCB #:		- Make ckeck	payable to I	Dayton School
Email:			TOTAL AMO	UNT DUE:	
Detailed Description of	Work to be done:		Building Pe	rmit & Plan	Check Fees
			Structural Va	iluation:	
			For th	e First \$	
			Plus \$ f	or each addi	tional \$1,000
					Total
			(Preliminary Plan	Check Fees)	Total x .65

#### ADDITIONAL IMPORTANT INFORMATION

#### TO CALL FOR AN INSPECTION: 503 554-7714

- 1) Applicant must provide all required contractor informatin.
- 2) Once an application has been submitted for review, the applicant is responsible for any and all fees, including but not limited plan review, state surcharge and permit fees, regardless if the permit is issued or not.
- 3) Permit Applications will not be accepted without the accompaning payment
- 4) Emailed and faxed permit applications will not be accepted
- 5) Plans will not be accepted digitally
- 6) The City of Dayton does not print or duplicate plans or permit documents
- 7) Permits expire when work is not started within 180 days of issuance or if work is suspended for 180 days
- 8) Property Owner information and signature is required regardless of who will be doing the work
- 9) Property owner installations by siging this permit the property owner agrees that this installation is being made on farm property owned by the property owner or a member of their immediate family, and is exempt from licensing r under ORS 701.010
- 10) Credit Card payments are not accepted for building permits
- 11) It is the responsibility of the property owner or contractor to call for inspections
- 12) Plumbing Permits Property Owner/Contractor certifys that all plumbing work will be done in accordance with applicable 1 the City of Dayton Municipal Code and Oregon Revised Statutes Chapters 447 & 693, and applicable codes, and that no h€ employed unless under ORS 693
- 13) Occupancy is not permited until all required work is finished and approved by the City

FOR CITY OF DAYTON USE - PAYMENT REIMBURSEMENT			
Final Date	75% Amount Paid Month/Year Paid		Month/Year Paid
Scanned & Efiled	Plan Review Paid		Month/Year Paid
Completed By:	25% Amount Paid		Month/Year Paid
Business Registration #		Emailed Permit to Newberg Build	ling Department:

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Revised 01/07/23



# What test is required & how is it conducted?

A performance test is done to check if the assembly continues to operate as designed and continues to protect against backflow. A specialized test instrument equipped with a large pressure gauge is connected to the backflow prevention assembly with three separate high-pressure hoses that are attached in various techniques to measure the differences

in pressure under certain conditions.



## Who performs the test?

The test must be performed by someone who holds a current certification as a "backflow assembly tester" as required by the State of Oregon.

### What is the Cost?

Certified testers and businesses set their own prices. The City of Dayton can provide a list of registered certified testers.

## **Backflow Contract Testing:**

City of Dayton water customers may choose to participate in our automatic backflow testing Program. If you register to participate, the City will send a registered licenced certified tester to your residence to test your backflow device when it is time to test and bill you for the cost of the test on your next utility billing statement. The cost of this service is \$20 per device per year. To be eligible for this program you will need to submit your request in writing.

Where can I find more information about cross-connection control and backflow prevention?

- Oregon Health Division;
  www.oregon.gov/DHS/ph/dwp/
- State of Oregon Human Services
  Drinking Water Program Administrative Rules:

www.healthoregon.org/crossconnection The Safe Drinking Water Act (SDWA):

 The Safe Drinking Water Act (SDWA): www.epa.gov/safewater/sdwa/index.html

### MISSION STATEMENT

The City of Dayton will provide inclusive, responsive, efficient, and ethical municipal government services to facilitate the health, safety, and livability of our community.

### VISION STATEMENT

Dayton is an authentic, family-friendly small town with deep historic roots and cultural diversity surrounded by rich agriculture. Our City is a vibrant place to live, work, and play. There is a strong sense of community in Dayton where people value creativity, health, and learning.

Contact Information:

Citty of Dayton Department of Public Works PO Box 339 - 416 Ferry Street Dayton OR 97114-0339 Ph # (503) 864-2221 Fax # (503) 864-2956 Email: cityofdayton@ci.dayton.or.us Website: www.ci.dayton.or.us

**INFORMATION GUIDE** 



Cross Connection Control and Backflow Prevention Pro§ram

Backflow Contract Testing Program



Have you ever connected a garden sprayer to the end of a hose in order to fertilize your vegetables or lawn? Many of us do. Have you ever stuck the end of a garden hose

into your car's radiator or connected it to the heater hoses in order to flush the radiator? Or... have you ever placed the hose under the water's surface in a swimming pool and left it on?

Doing any of the above poses a risk of contaminating your hom<del>e's</del> drinking-water with chemicals that can cause serious health concerns if



swallowed.

### What is Backflow?

Water systems depend on water pressure to keep water flowing in the proper direction through the pipes. However, anything that causes a drop in water pressure can create a reverse flow from a homeowner's plumbing system back into the public water system. *This is called backflow*.

For example, if you have a garden hose submerged to fill a bucket, jacuzzi, fish tank, etc., and the water system



can

system.

# How is Backflow prevented?

Preventing backflow is a matter of avoiding the reverse flow of an unwanted substance into the drinking water by using special

plumbing methods, devices and practices. Preventing backflow is accomplished through a physical means or mechanical device designed and built specifically to prevent backflow.



### What is Cross

Connection?

inter-connection between a drinking water system and any other system that contains a substance of unknown or uncertain quality is a cross connection. A cross connection also is described as a link that can bring two systems together.

Does my Underground Lawn Sprinkler System Require a Backflow Device?



YES! All underground lawn and garden

irrigation systems are required to have backflow prevention devices installed and routinely maintained. State law requires such assemblies to be tested at the time they are installed and yearly thereafter, as well as any time they are repaired or replaced.

### What are some Examples of Cross-Connections?

### Soapy water or other cleaning compounds backsiphoned into your water supply plumbing through a faucet or hose submerged in a bucket or laundry basin.

- A hose submerged in a swimming pool creates a pathway for pool water to enter your water supply plumbing.
- Fertilizers/pesticides backsiphoned into your water supply plumbing

water supply plumbing

Chemicals/pesticides and animal or bird

droppings drawn into o your water supply plumbing from a lawn irrigation system with submerged

- Mith submerge
  A connection made between a
  Drivate well supply and the water
  - private well supply and the water being supplied by a public water system through the water supply plumbing.



Water customers have the ultimate responsibility for properly maintaining their plumbing systems. It is the Home Owner's or Water Customer's responsibility to ensure that cross-connections are not created and that any required backflow preventers are tested yearly. If a homeowner or water customer is found to have a potential or actual cross-connection contamination hazard, the customer will be required to eliminate the hazard and/or install an appropriate backflow preventer per Dayton Municipal Code Section 8.3.



### City of Dayton

Post Office Box 339 416 Ferry Street Dayton, Oregon 97114-0339 Phone: (503) 864-2221 Fax: (503) 864-2956 cityofdayton@ci.dayton.or.us www.ci.dayton.or.us

### CITY OF DAYTON BACKFLOW TESTING POLICY

In compliance with Oregon State Law and City of Dayton Policy, all water customers who have backflow assembly devices installed are required to have certified inspections and operation tests made at least once annually per each device.

Dayton Municipal Code Section 3.3 requires that all businesses operating within the City of Dayton to register with the City. In addition, Backflow Testers are required to provide current CCB or LCB license information, State tester certification, gauge accuracy verification and proof of liability insurance.

In order to protect our residents and our drinking water supply, the City of Dayton requires all backflow testers to register their businesses with the City and to provide all the necessary documentation before they are allowed to test backflow assembly devices within the City. A list of registered certified backflow testers is provided at City Hall and can be found on our website at <u>www.ci.dayton.or.us</u>.

To help offset the cost of annual backflow testing, the City of Dayton has entered into a contract with A1 Backflow Services LLP. If you would like to become a part of our Automatic Backflow Testing Program, we will have your backflow device tested annually (around March) and will bill you the cost of the test (\$20.00 per/each device) on your next water/sewer utility billing statement.

If you are interested in worry free money saving backflow testing, just check the yes box, sign your name below and return this notice to the City of Dayton. In order to be eligible for our automatic backflow testing program you will need to give us your consent in writing.

• Yes, I am interested in participating in the Automatic Backflow Testing Program, please sign me up to have my backflow device tested annually and have the cost of the test billed to me on my water/sewer utility billing statement. I further understand that I can cancel my participation in this program at any time by giving written notice to the City of Dayton that I no longer wish to participate in the Automatic Backflow Testing Program.

Property Owner Signature:	Date:
Service Address:	Device #:
Account Name:	Account #:

If you are not interested in participating in the Automatic Backflow Testing Program, it will be the responsibility of the utility customer to arrange for the annual testing of any backflow devices that are attached to the City's water system.

If you should have any questions, please do not hesitate to contact us at (503) 864-2221 or stop by Dayton City Hall at 416 Ferry Street, Dayton Oregon, Monday through Friday from 9:00 am to 5:00 pm.

### Municipal Code of Dayton, Oregon CHAPTER 8 - UTILITIES

#### 8.0 GENERAL

#### 8.0.1 Definitions:

- (1) "Backflow" means the undesirable reversal of water or mixtures of water and other liquids, gases or other substances into the distribution pipes of the potable supply of water from any source or sources.
- (2) "Backflow Prevention Device (Approved)" means a device that has been investigated and approved by the regulatory agency having jurisdiction. The approval of backflow prevention devices by the regulatory agency should be made on the basis of a favorable laboratory and field evaluation report by an "approved testing laboratory," recommending such approval.
- (3) "Backflow Prevention Devices (Type)" means any approved device used to prevent backflow into a potable water system. The type of device used should be based on the degree of hazard either existing or potential.
- (10) "Contamination" means the entry into or presence in a public water supply system of any substance which may be deleterious to health and/or quality of the water.
- (11) "Cross Connection" means any unprotected actual or potential connection or structural arrangement between a public or a consumer's potable water system and any other source or system through which it is possible to introduce into any part of the potable system any used water, industrial fluid, gas, or substance other than the intended potable water with which the system is supplied.
- (15) "Hazard, Degree of" is derived from the evaluation of a health, system, plumbing or pollutional hazard.
- (16) "Hazard, Health" means an actual or potential threat of contamination of a physical or toxic nature to the public potable water system or the consumer's potable water system that would be a danger to health.
- (17) "Hazard, Plumbing" means an internal or plumbing type cross connection in a consumer's potable water system that may be either a pollutional or a contamination type hazard. This includes, but is not limited to, cross connections to toilets, sinks, lavatories, wash tray, domestic washing machines and lawn sprinkling systems. Plumbing type cross connections can be located in many types of structures including homes, apartment houses, hotels and commercial or industrial establishments.
- (18) "Hazard, Pollutional" means an actual or potential threat to the physical properties of the water system or the potability of the public or the consumer's potable water system, but which would not constitute a health or system hazard, as defined. The maximum degree of intensify of pollution to which the potable water system could be degraded under this definition would cause a nuisance or be aesthetically objectionable or could cause minor damage to the system or its appurtenances.
- (19) "Hazard, System" means an actual or potential threat of severe danger to the physical properties of the public or consumer's potable water system or a pollution or contamination which would have a protected effect on the quality of the potable water in the system.

### 8.3 WATER SUPPLY CROSS CONNECTION

**8.3.1 Cross Connections.** The installation or maintenance of a cross connection which will endanger the water quality of the potable water supply system of the city shall be unlawful and is prohibited. Any such cross connection now existing or hereafter installed is declared to be a public hazard and the same shall be abated. The control or elimination of cross connections shall be in accordance with this section of the Code and with the Oregon Administrative Rules Chapter 333 Public Water Systems Section 61-070. The City Manager shall have the authority to establish requirements more stringent than state regulations if it is deemed that conditions so dictate. The city shall adopt rules and regulations as necessary to carry out the provisions of this section of the Code in the inspection of existing, new and remodeled buildings.

#### 8.3.2 Use of Backflow Prevention Devices.

- (1) No water service connection to any premises shall be installed or maintained by the city unless the water supply is protected as required by state law and Section 8.3 of this Code. Service of water to any premises shall be discontinued by the city if a backflow prevention device required by this Code is not installed, tested and maintained, or if it is found that a backflow device has been removed, bypassed, or if an unprotected cross connection exists on the premises. Service will not be restored until such conditions or defects are corrected.
- (2) The customer's system should be open for inspection and tests at all reasonable times to authorized representatives of the city to determine whether cross connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known, the City Manager shall deny or immediately discontinue service to the premises by providing for a physical break in the service line until the customer has corrected the condition(s) in conformance with the state and city statutes relating to plumbing and water supplies and the regulations adopted pursuant thereto.
- (3) An approved backflow prevention device shall also be installed on each service line to a customer's water system at or near the property line or immediately inside the building being served; but, in all cases, before the first branch line leading off the service line.
- (4) Backflow prevention devices shall be installed under circumstances including but not limited to the following:
  - (a) Premises having an auxiliary water supply;
  - (b) Premises having cross connections that are not correctable, or intricate planning arrangements which make it impractical to ascertain whether or not cross connections exist;
  - (c) Premises where entry is restricted so that inspections for cross connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross connections do not exist;
  - (d) Premises having a history of cross connections being established or reestablished;
  - (e) Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters;
  - (f) Premises where materials of a toxic or hazardous nature are handled in such a way that if back siphonage should occur, a serious health hazard might result;

- (g) The following types of facilities will fall into one of the above categories where a backflow prevention device is required to protect the public water supply. A backflow prevention device shall be installed at these facilities unless the city determines that no hazard exists:
  - 1) Hospitals, mortuaries, clinics,
  - 2) Laboratories,
  - 3) Metal plating industries,
  - 4) Piers and docks,
  - 5) Sewage treatment plants,
  - 6) Food or beverage processing plants,
  - 7) Chemical plants using a water process,
  - 8) Petroleum processing or storage plants,
  - 9) Radioactive material processing plants or nuclear reactors,
  - 10) Facilities with fire service lines as specified by Oregon State Health Division,
  - 11) Others specified by the purveyor.
- (5) The type of protective device required shall depend upon the degree of hazard which exists:
  - (a) An air-gap separation or a reduced-pressure principle backflow prevention device shall be installed where the public water supply may be contaminated with sewage, industrial waste of a toxic nature, or other contaminant which could cause a health or system hazard;
  - (b) In the case of a substance which may be objectionable, but not hazardous to health, a double check valve assembly, air-gap separation, or a reduced-pressure-principal backflow prevention device shall be installed.
- (6) Backflow prevention devices required by this section shall be installed under the supervision, and with the approval of, the city or its building inspector.
- (7) Any protective device required by this section of the Code shall be approved by the superintendent of public works or the building inspector.
- (8) These devices shall be furnished and installed by, and at the expense of, the customer.
- It shall be the duty of the customer-user at any premises where backflow prevention devices are (9) installed to have certified inspections and operational tests made at least once each year. In those instances where the superintendent of public works deems the hazard to be great enough, he may require certified inspections at more frequent intervals. These inspections and tests shall be at the expense of the water user and shall be performed by a certified tester approved by the city. The city may choose to enter into a contract with a licensed tester who will provide multiple backflow tests. The customer must give advanced written consent to have the device tested by the city's contracted tester and the fee will be added to the customer's utility bill. It shall be the responsibility of the Cross Connection Specialist to ensure that the devices to be tested by the city's licensed tester are tested in a timely manner. It shall be the duty of the superintendent of public works to assure that these timely tests are made. The customer-user shall notify the superintendent of public works in advance when the tests are to be undertaken so that the superintendent of public works or a representative may witness the tests if so desired. These devices shall be repaired, overhauled or replaced at the expense of the customer-user whenever said devices are found to be defective. Records of such tests, repairs and overhaul shall be kept and copies sent to the superintendent of public works. (Revised ORD 611; effective 10/1/12)

- (10) No underground sprinkling device will be installed without adequate backflow prevention devices.
- (11) Failure of the customer to cooperate in the installation, maintenance, testing or inspection of backflow prevention devices required by Section 8.3 of this Code or by state law shall be grounds for the termination of water service to the premises.

### 8.3.3 Cross Connection Inspection.

- (1) No water shall be delivered to any structure hereafter built within the city of Dayton or within areas served by city water until the same shall have been inspected by the city for possible cross connections and been approved as being free of same.
- (2) Any construction for industrial or other purposes which is classified as hazardous facilities where it is reasonable to anticipate intermittent cross connections, or as determined by the City Manager or his/her designated representative, shall be protected by the installation of one or more backflow prevention devices at the point of service from the public water supply or any other location designated by the city.
- (3) Inspections shall be made at the discretion of the City Manager or his/her designated representative of all buildings, structures, or improvements for the purpose of ascertaining whether cross connections exist. Such inspections shall be made by the city.
- **8.3.4** Liability. Section 8.3 through 8.3.3 shall not be construed to hold the city responsible for any damage to persons or property by reason of the inspection or testing herein, or the failure to inspect or test or by reason of approval of any cross connections.
- **8.3.5 Penalties.** Violation of any rule or regulation contained herein shall constitute a Class A violation.

### Protection from Expansion Thermal

Protection from thermal expansion is provided in a pressure relief valve (T & P Valve) at the top of plumbing system by the installation of a *thermal* expansion tank and a temperature and the tank. The thermal expansion tank controls the increased temperature range of the water heater. The small provides a space to store and hold the additional pressure generated within the normal operating tank with a sealed compressible air cushion expanded water volume.

the water heater. The temperature portion of the The T & P Valve is the primary safety feature for mately 210° F (99° C). Venting allows cold water - & P Valve is designed to open and vent water temperature within the tank reaches approxito the atmosphere whenever the water to enter the tank. The pressure portion of a T & P Valve is designed pressure setting on the valve. The T & P Valve is to open and vent to the atmosphere whenever water pressure within the tank exceeds the normally pre-set at 125 psi or 150 psi.

current plumbing code will have the required T & P preventer downstream of the water meter. In these health protection, the water purveyor may require thermal expansion tank be properly installed and Water heaters installed in compliance with the situations, it is essential that a T & P Valve and Valve and thermal expansion tank. For public the installation of a check valve or backflow maintained in the plumbing system.

For further Information Contact:

Dayton OR 97114 **416 Ferry Street** City of Dayton PO Box 339

(503) 864-2221

City Building Department City of Newberg at

(503) 537-1240

Any Licensed Plumber,

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the PNWS/AWWA Committee

or on the Web at:

www.pnws-awwa.org

@ 2009 R 11/09 [Brochure #5]

**Cross Connection Control** through the PNWS office at (877) 767-2992

Water Heater from Expansion Thermal Protect Your

Without a functioning

Pressure Relief Valve Temperature &

your water heater can



# Thermal Expansion Danger

Most homes are supplied with hot water from an electric or gas heated tank. Until the heating element stops working, and one is faced with a cold shower, the water heater is usually taken for granted. However, if not properly maintained, a water heater may become a safety hazard.

Water expands in volume as its temperature rises. The extra volume caused by thermal expansion must go somewhere. If not, the heated water creates an increase in pressure. This is the principle of a steam engine. The temperature and pressure in the water heater is reduced when hot water is withdrawn from a faucet and cold water enters the tank. The increase in pressure from thermal expansion can also be reduced by water flowing back into the public water system. However, when a check valve, pressure-reducing valve or backflow preventer is installed in the service pipe a "closed system" is created. Provisions must be made for thermal expansion in these cases.

The thermostat of the water heater normally maintains the water temperature at about 130° F (54° C). However, if the thermostat fails to shut off the heater, the fails to shut off the water will continue to increase.

If the water temperature increases to more than 212° F (100°C), the water within the tank becomes "super heated". When this super heated water is suddenly exposed to the atmosphere when a faucet is opened, it instantly turns to steam. As the pressure within the tank continues to build up under super heated conditions, the tank may explode.



## Why the Installation of a Backflow Preventer is Required on a Water Service

Water normally flows in one direction, from the public water system through the customer's cold or hot water plumbing to a sink tap or other plumbing fixture. The plumbing fixture is the end of the potable water system and the start of the waste disposal system.

Under certain conditions water can flow in the reverse direction. This is known as **backflow**. Backflow occurs when a backsiphonage or backpressure condition is created in a water line.

**Backsiphonage** may occur due to a loss of pressure in the water distribution system during a high withdrawal of water for fire protection, a water main or plumbing system break, or a shutdown of a main or plumbing system for repair. A reduction of pressure below atmospheric pressure creates a vacuum in the piping. If a hose bib was open and a flowing hose was submerged in a wading pool during these conditions, the non-potable water in the pool would be siphoned into the house plumbing then back into the public water system.

**Backpressure** may be created when a source of pressure, such as a pump, creates a pressure greater than that supplied from the distribution system. If a pump supplied from a non-potable source, such as a landscape pond, were accidentally connected to the plumbing system, the non-potable water could be pumped into the potable water supply.



## What the Homeowner Should Do to Ensure Protection from Thermal Expansion

- The homeowner should check to see that an expansion tank and T & P Valve are in place.
- If there is any doubt, the homeowner should contact a licensed plumber.
- The T & P Valve should be periodically inspected to ensure that it is properly operating.
- Some T & P Valves are equipped with a test lever. Manually lifting the lever unseats the valve, allowing water to discharge. If water continues to leak from the T & P Valve after closing, the valve may need to be replaced. A drain line must be installed to avoid water damage and scalding injury when the valve operates.
- The T & P Valve should be periodically removed and visually inspected for corrosion deposits and to insure it has not been improperly altered or repaired.
- Installation specifications may vary; the above work can best be done by a licensed plumber. Installations should always be in accordance with Manufacturers Instructions.