CHAPTER 15.40
MINIMUM STANDARDS FOR
FIRE FLOWS, WATER MAINS AND FIRE HYDRANTS

Sections:
15.40.010

15.40.020
15.40.030
15.40.040
15.40.050
15.40.060
15.40.070
15.40.080
15.40.090
15.40.100
15.40.110
15.40.120
15.40.130

Purpose
Definitions
General Requirements
Fire Flow Requirements
Fire Hydrant Spacing
Fire Flow Requirements in Rural Areas
Water System Requirements
Purveyor Requirements
Minimum Flow Variance for Water Purveyors
Procedures for Compliance
Waivers
Enforcement, Violations, Appeals and Penalty
Severability

15.40.010 PURPOSE. The purpose of this ordinance is to facilitate fire fighting by providing minimum standards relating to fire protection, including standards for installation and improvement of water mains and fire hydrants. Provisions of this ordinance shall be enforced by the Office of Fire Prevention & Arson Control.

15.40.020 DEFINITIONS. Words or phrases used herein shall have the following meanings, unless otherwise provided for in the Uniform Fire Code, as adopted by the Pierce County Council:

(A) AGRICULTURAL BUILDINGS - shall mean a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. This structure shall not be a place of human habitation or a place of employment for five (5) or more employees, where agricultural products are processed, treated or packaged; nor shall it be a place used by the public.

(B) A.W.W.A. - shall mean the American Water Works Association.
(C) **Building Valuation Data** - shall mean the Building Standards monthly publication issue by the International Conference of Building Officials.

(D) **Commercial Projects** - shall mean any use of a building as defined in Chapter 4, CLASSIFICATION OF OCCUPANCY, NFPA LSC Standard #101, current edition, as follows:

- Assembly, Educational, Health Care, Detention & Correctional,
- Mercantile, Business, Storage and Special Structures.

Questions arising in the administration of this ordinance concerning whether a project is commercial shall be resolved by reference to the Classification of Occupancy tables contained in the Uniform Fire Code.

(E) **C.W.S.P.** - shall mean Coordinated Water System Plan.

(F) **Deadend Water Main** - shall mean a water main over fifty (50') feet long and not being fed from both ends at the time of installation.

(G) **Draft Hydrant** - shall mean a self-draining mechanical device designed for the removal of water by a fire pumper by applying a negative pressure without going through the normal domestic water system.

(H) **Dwelling** - is any building or portion thereof, which contains not more than two dwelling units.

(I) **Dwelling Unit** - is any building or portion thereof which contains living facilities including provisions for sleeping, eating, cooking and sanitation as required by the Uniform Building Code, for not more than one family.

(J) **Expanding Water System** - shall mean an approved, expanding water system which is undertaking new construction [See J (1)] to provide water service to additional service connections. Any expanding water system shall install facilities sized to meet the necessary minimum design criteria for area being served. The expanding system shall show by plans submitted by a registered professional engineer how fire flow is to be provided, and said plan shall be approved by the State Department of Health and the Pierce County Office of Fire Prevention & Arson Control.

(1) **New Water Facility Construction** - any addition of supply, transmission, distribution or storage facilities, either in a new water system or an expanding water system which provides the capability to serve additional dwelling units or other buildings.

***NOTE*** - a utility whose existing water system plan is approved by the State Department of Health, the Pierce County Health Department, and the Pierce County Office of Fire Prevention and Arson Control, may install up to its
approved number of service connections without being considered an expanding system. If existing mains were installed and approved after December 19, 1978, the mains must also meet requirements of the Pierce County Office of Fire Prevention and Arson Control.

(K) Fire Area - is the total floor area in square feet for all floor levels within the exterior walls, or under the horizontal projection of the roof of a building. Each portion of a building separated by one or more four-hour area separation walls with no openings and provided with a 30-inch parapet constructed in accordance with the Building code may be considered as separate fire areas for the purposes of determining the required fire flow.

(L) Fire Department - shall mean a public fire protection district that provides fire extinguishment, fire prevention, emergency rescue and medical aid services to a given jurisdiction.

(M) Fire Flow - shall mean the minimum flow of water at 20 P.S.I required for extinguishing a fire. This amount is in addition to peak domestic flow requirements.

(N) Fire Hydrant - shall mean a self-draining mechanical device and is constructed to provide the required fire flow.

(O) Fire Marshal - shall mean the director of the Pierce County Office of Fire Prevention & Arson Control.

(P) Fire Sprinkler System - shall mean an integrated system of piping connected to a water supply, with sprinklers, which shall automatically initiate water discharge over a fire, conforming to the current requirements of the National Fire Protection Association Standards and/or the Pierce County Office of Fire Prevention & Arson Control.

(Q) G.P.M. - shall mean gallons per minute.

(R) Industrial Projects - shall mean any buildings used for industrial operations as defined in Chapter 4, CLASSIFICATION OF OCCUPANCY, NFPA LSC Standard #101, Current Edition.

(S) Looped Water Main - shall mean a water main laid out in a manner so that water will be supplied to any point from two directions, thus reducing friction loss in the main.

(T) Modifications - shall mean that fire flow requirements may be modified downward for isolated buildings or group of buildings in rural areas or small communities where the development of full fire flow requirements is impractical; or
fire flow may be modified upward where conditions indicate an unusual susceptibility to group fires or conflagrations. An upward modification shall not be more than twice that required for the building under consideration.

(U) Multiple Dwelling - shall mean any building or portion thereof which contains three (3) or more dwelling units. This shall include condominiums.

(V) N.F.P.A. - shall mean National Fire Protection Association.


(X) N.H. - shall mean American National Fire Hose Connection Screw Thread.

(Y) Pierce County Fire Marshal - shall mean the director of the Pierce County Office of Fire Prevention and Arson Control.

(Z) Private Fire Protection System - shall mean a system which shall be installed in accordance with the Uniform Fire Code and N.F.P.A. Standards.

(AA) Private Hydrant - shall mean a fire hydrant situated and maintained to provide water for fire fighting purposes with restrictions as to use. The location may be such that it is not readily accessible for immediate use by the fire department for other than certain private property.

(BB) P.S.I. - shall mean pounds per square inch.

(CC) Public Hydrant - shall mean a fire hydrant so situated and maintained as to provide water for fire fighting purposes without restrictions as to use for the purpose. The location is such that it is accessible for immediate use of the fire department at all times.

(DD) Public Water - shall mean public water as defined by the State Department of Health or shall mean any system or water supply intended or used for human consumption or other domestic uses, including sources, treatment, storage, transmission and distribution facilities where water is furnished to any community, collection or number of individuals, or is made available to the public for human consumption or domestic use, excluding water systems serving a dwelling.

(EE) Surveyor - shall mean the federal agency, state agency, county agency, city, town, municipal corporation, firm, company, mutual, cooperative, association, corporation, partnership, district, institution, person or persons owning or operating a public water system or his/her authorized agent.

(FF) Rural Area - shall mean the area outside of the Urban Growth Area as denoted on the Pierce County Interim Generalized Urban Growth Area Map as
adopted by Pierce County. (NOTE: Subject to change when the Pierce County
Comprehensive Use Plan is adopted).

(GG) **Substantial Alteration** - shall mean any alteration, remodeling or
structural change to a structure, which change shall cost 40% or more of the
building valuation within a twelve (12) month period; provided that if the cost
of said change is less than $50,000.00, said alteration shall not be considered
a substantial alteration. Building valuation shall be determined by the
"Building Valuation Data".

(HH) **Transmission Main** - shall mean a main used to transport water from
a source to storage, storage to storage, source or storage to distribution main.
No transmission main less that eight (8") inches in diameter will be used to
provide fire flow.

(II) **U.B.C.** - shall mean the current edition of the Uniform Building Code
as adopted by Pierce County.

(JJ) **U.F.C.** - shall mean the current edition of the Uniform Fire Code
as adopted by Pierce County.

(KK) **Urban Area** - shall mean the area inside the Urban Growth Area as
denoted on the Pierce County Interim Generalized Urban Growth Area Map as adopted
by Pierce County. (Note: Subject to change when the Pierce County Comprehensive
Use Plan is adopted.)

(LL) **Water Main** - shall mean the piping used to deliver domestic water
and water intended for fire protection.

(MM) **Yard System** - shall mean any extension from a transmission main
and/or water main onto a development site. Such system is defined in NFPA
Standard #24, Private Fire Service Main.

**15.40.030 GENERAL REQUIREMENTS.**

(T) **Fire flow is required for the following:** new construction, new
subdivisions of land, mobile home parks and R.V. parks; and substantial
alterations to EXISTING commercial or industrial projects, multiple dwellings,
mobile homes parks, and RV parks, in accordance with Appendix III-A of the U.F.C.
as herein modified, in all urban areas; and N.F.P.A. Standard #1231 in rural
areas as modified in Section 15.40.060.

**EXCEPTIONS:** The following exceptions are allowed provided the
setback requirements in Section 15.40.060 are met.

1. No fire flow is required for R.V. parks in rural areas,
   except for the permanent structures found within them.
2. No fire flow is required for accessory buildings to dwellings or dwelling units that are defined as M-1 or M-2 by the Uniform Fire Code.

3. No fire flow is required for dwellings in a rural area with a gross floor area of 2,500 square feet or less, including attached garages.

4. No fire flow is required for agricultural buildings with a gross floor area of 5,000 square feet or less.

(II) Sprinkler System Requirements:

a) In a dwelling with a gross floor area of 3,600 square feet or more, including attached garage, a fire sprinkler system shall be installed in accordance with N.F.P.A. Standard 13-D.

b) All multiple dwellings having three or more floors or containing five or more dwelling units shall have a fire sprinkler system installed in accordance with N.F.P.A. Standard 13-R or N.F.P.A. Standard 13, based on the size and type of construction of the building that is to be protected.

c) In an occupancy that requires more than 2,000 GPM of fire flow, or where the total gross floor area exceeds 10,000 square feet, a fire sprinkler system shall be installed in accordance with N.F.P.A. Standard 13.

**NOTE:** One-hour and two-hour area separation walls as defined in Section 505(e) of the Uniform Building Code shall not be considered to separate a building into sections that would allow the deletion of the required fire sprinkler systems.
### TABLE I

**BASIC FIRE FLOW GUIDE FOR BUILDINGS (1, 2)**

<table>
<thead>
<tr>
<th>Duration (hours)</th>
<th>Flow (gpm)</th>
<th>I and II F.R. (area in sq ft)</th>
<th>II (area in sq ft)</th>
<th>III &amp; IV (area in sq ft)</th>
<th>V (area in sq ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1,000</td>
<td>up to 10,900</td>
<td>up to 6,100</td>
<td>up to 3,900</td>
<td>up to 1,700</td>
</tr>
<tr>
<td>11</td>
<td>1,250</td>
<td>16,200</td>
<td>9,100</td>
<td>5,800</td>
<td>2,600</td>
</tr>
<tr>
<td>12</td>
<td>1,500</td>
<td>22,700</td>
<td>12,700</td>
<td>8,200</td>
<td>3,600</td>
</tr>
<tr>
<td>13 1/2</td>
<td>1,750</td>
<td>30,200</td>
<td>17,000</td>
<td>10,900</td>
<td>4,800</td>
</tr>
<tr>
<td>14</td>
<td>2,000</td>
<td>38,700</td>
<td>21,800</td>
<td>13,900</td>
<td>6,200</td>
</tr>
<tr>
<td>15</td>
<td>2,250</td>
<td>48,300</td>
<td>27,200</td>
<td>17,400</td>
<td>7,700</td>
</tr>
<tr>
<td>16</td>
<td>2,500</td>
<td>59,000</td>
<td>33,200</td>
<td>21,300</td>
<td>9,400</td>
</tr>
<tr>
<td>17</td>
<td>2,750</td>
<td>70,900</td>
<td>39,700</td>
<td>25,500</td>
<td>11,300</td>
</tr>
<tr>
<td>18</td>
<td>3,000</td>
<td>83,700</td>
<td>47,100</td>
<td>30,100</td>
<td>13,400</td>
</tr>
<tr>
<td>19</td>
<td>3,200</td>
<td>97,700</td>
<td>54,900</td>
<td>35,200</td>
<td>15,600</td>
</tr>
<tr>
<td>20 3</td>
<td>3,500</td>
<td>112,700</td>
<td>63,400</td>
<td>40,600</td>
<td>18,000</td>
</tr>
<tr>
<td>21</td>
<td>3,750</td>
<td>128,700</td>
<td>72,400</td>
<td>46,400</td>
<td>20,600</td>
</tr>
<tr>
<td>22</td>
<td>4,000</td>
<td>145,900</td>
<td>82,100</td>
<td>52,500</td>
<td>23,300</td>
</tr>
<tr>
<td>23</td>
<td>4,250</td>
<td>164,200</td>
<td>92,400</td>
<td>59,100</td>
<td>26,300</td>
</tr>
<tr>
<td>24</td>
<td>4,500</td>
<td>183,400</td>
<td>103,100</td>
<td>66,000</td>
<td>29,300</td>
</tr>
<tr>
<td>25</td>
<td>4,750</td>
<td>203,700</td>
<td>114,600</td>
<td>73,300</td>
<td>32,600</td>
</tr>
<tr>
<td>26</td>
<td>5,000</td>
<td>225,200</td>
<td>126,700</td>
<td>81,100</td>
<td>36,000</td>
</tr>
<tr>
<td>27</td>
<td>5,250</td>
<td>247,700</td>
<td>139,400</td>
<td>89,200</td>
<td>39,600</td>
</tr>
<tr>
<td>28</td>
<td>5,500</td>
<td>271,200</td>
<td>152,600</td>
<td>97,700</td>
<td>43,400</td>
</tr>
<tr>
<td>29</td>
<td>5,750</td>
<td>295,900</td>
<td>166,500</td>
<td>106,500</td>
<td>47,400</td>
</tr>
<tr>
<td>30 4</td>
<td>6,000</td>
<td>greater</td>
<td>greater</td>
<td>115,800</td>
<td>51,500</td>
</tr>
<tr>
<td>31</td>
<td>6,250</td>
<td>greater</td>
<td>greater</td>
<td>55,700</td>
<td>51,500</td>
</tr>
<tr>
<td>32</td>
<td>6,500</td>
<td>greater</td>
<td>greater</td>
<td>60,200</td>
<td>51,500</td>
</tr>
<tr>
<td>33</td>
<td>6,750</td>
<td>greater</td>
<td>greater</td>
<td>64,800</td>
<td>51,500</td>
</tr>
<tr>
<td>34</td>
<td>7,000</td>
<td>greater</td>
<td>greater</td>
<td>69,600</td>
<td>51,500</td>
</tr>
<tr>
<td>35</td>
<td>7,250</td>
<td>greater</td>
<td>greater</td>
<td>74,600</td>
<td>51,500</td>
</tr>
<tr>
<td>36</td>
<td>7,500</td>
<td>greater</td>
<td>greater</td>
<td>79,800</td>
<td>51,500</td>
</tr>
<tr>
<td>37</td>
<td>7,750</td>
<td>greater</td>
<td>greater</td>
<td>85,100</td>
<td>51,500</td>
</tr>
<tr>
<td>38</td>
<td>8,000</td>
<td>greater</td>
<td>greater</td>
<td>greater</td>
<td>greater</td>
</tr>
</tbody>
</table>

1. In Types I and II F.R. construction, only the three largest successive floor areas shall be used.

2. Each portion of a building separated by one or more four-hour area separation walls with no openings and provided with a 30-inch parapet constructed in accordance with the Building Code is considered as a separate fire area.
MODIFICATIONS: This section provides modifications to the basic fire flow required by this Ordinance.

REDUCTIONS:

A. GENERAL. Reductions are allowed as set forth in this subsection, except that the required fire flow shall not be reduced to less than 750 GPM.

B. DWELLINGS. Fire flow requirements for dwellings with a gross floor area of less than 3600 square feet (including attached garages) shall be 750 GPM for a period of 45 minutes.

C. FIRE EXTINGUISHING SYSTEMS. The following reductions are allowed based on the installation of fire extinguishing systems:

   a) Reduced by 75 percent when an approved commercial-type automatic fire extinguishing system meeting the requirements of the Uniform Fire Code is installed throughout the building and the system is electrically supervised in accordance with U.F.C. Standard No. 14-1 and is monitored by an approved central station.

   b) Reduced by 50 percent when an approved commercial-type automatic fire extinguishing system meeting the requirements of the Uniform Fire Code is installed throughout the building without supervision and monitoring.

   c) Reduced by 50 percent when an approved multifamily residential-type automatic fire extinguishing system meeting the requirement of the Uniform Fire Code is installed in a Group R, Division 1 Occupancy and the system is electrically supervised in accordance with U.F.C. Standard No. 14-1 and is monitored by an approved central station.

   d) Reduced by 35 percent when an approved multifamily residential-type automatic fire extinguishing system meeting the requirements of the Uniform Fire Code is installed in a Group R, Division 1 Occupancy without supervision and monitoring.

D. FIRE DETECTION SYSTEMS. A reduction of 25 percent is allowed when an approved smoke-sensing fire detection system and an electrically interconnected manual fire alarm system meeting the
requirements of U.F.C. Standard No. 14-1 is installed throughout the building and is monitored by an approved central station.

E. FIRE RESISTIVE CONSTRUCTION.

a) A reduction of 25 percent is allowed when a two-hour area separation wall is provided in accordance with the Building Code and which divides the building in nearly equal portions.

b) A reduction of 10 percent is allowed for one-hour construction throughout, in accordance with the Building Code.

c) A reduction of 10 percent is allowed for a building with a Class A rated roof.

15.40.050 FIRE HYDRANT SPACING. The table below specifies the maximum permissible spacing between hydrants:

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>Maximum Hydrant Spacing</th>
<th>Minimum Hydrant Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdivisions and Short Subdivisions -</td>
<td>700 Feet</td>
<td>350 Feet</td>
</tr>
<tr>
<td>Limited to Dwellings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple Dwelling - Low Density -</td>
<td>500 Feet</td>
<td>250 Feet</td>
</tr>
<tr>
<td>Twelve or Less Units Per Acre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commercial and Multiple Dwelling -</td>
<td>400 Feet</td>
<td>200 Feet</td>
</tr>
<tr>
<td>High Density - More Than Twelve</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Units Per Acre</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Industrial and areas of more than</td>
<td>300 Feet</td>
<td>150 Feet</td>
</tr>
<tr>
<td>20 Commercial Establishments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Spacing shall be measured by the pathway required for the fire department to lay the fire hose. This spacing shall be determined by the Pierce County Fire Marshal.

** Hydrants shall not be placed closer than 50' to any structure. This spacing may be modified by the Pierce County Fire Marshal.

Where possible hydrants shall be located at street intersections. The location of hydrants shall be determined by the Pierce County Fire Marshal. Subdivisions and short subdivisions - in no event shall any hydrant be more than three hundred fifty (350') feet from the center of the frontage of any lot except on deadend cul-de-sacs with dwellings only. When the deadend cul-de-sac exceeds six hundred (600') feet from the center of the intersection to the end of the cul-de-sac, a hydrant shall be located at the intersection and
additional hydrant(s) will be required. The hydrant(s) shall be located within three hundred fifty (350') feet from the center of the frontage of all lots on the cul-de-sac road, and shall comply with the maximum spacing requirements listed above.

Multiple dwellings, commercial & industrial – hydrants shall be within one half of the above spacing distance to the closest portion of the building(s) and no portion of the building shall be more than the total spacing distance from the hydrant. (i.e., 400' spacing = hydrant 200' to the closest portion of the building and no more than 400' to the furthest portion of the building).

15.40.060 FIRE FLOW REQUIREMENTS IN RURAL AREAS – shall be in accordance with the provisions of N.F.P.A. Standard #1231 as herein modified. On-site storage required for a project located less than two miles from a fire station may be reduced by the amount that the fire district can provide by mobile units. If that amount does not meet the requirement for the project, additional storage shall be provided on site to meet the required storage.

Exception: All buildings, except agricultural buildings, requiring in excess of 10,000 gallons of total storage for fire fighting purposes, as computed by N.F.P.A. Standard #1231, shall provide a fire flow system in accordance with Pierce County Code 15.40.070.

SETBACK REQUIREMENTS:

1. The minimum setback distance for all structures from all lot lines, shall be thirty (30') feet, unless otherwise approved by the Pierce County Fire Marshal.

Exception: This shall not apply if fire flow is provided in accordance with Section 15.40.070, or a sprinkler system is provided in accordance with N.F.P.A. Pamphlet 13-D, if not otherwise required.

SPRINKLER SYSTEM REQUIREMENTS:

1. Dwellings exceeding 2,500 square feet in area without fire flow shall install a sprinkler system in accordance with N.F.P.A. Standard 13-D.
NOTE: One-hour and two-hour area separation walls as defined in Section 505(e) of the Uniform Building Code shall not be considered to separate a building into sections that would allow the deletion of the required water storage capacity.

ON-SITE STORAGE:

1. Where water storage is required on-site, storage facilities shall comply with the following requirements:
   a) The minimum required storage shall be 2,000 gallons;
   b) Tanks or other approved water sources, (i.e., ponds, lakes, rivers, streams, swimming pools, etc.) equipped with approved fire department connections shall be engineered according to N.F.P.A. Standard #1231;
   c) Where drafting facilities are provided, plans for access as required by N.F.P.A. Standard #1231 shall be prepared and submitted by a professional engineer, and approved by the Pierce County Fire Marshal, with concurrence of the affected fire district.
   d) Plans for (b) and (c) above shall be submitted for approval to the Pierce County Fire Marshal prior to installation.
   e) After construction is complete, "As Built" plans shall be submitted for approval to the Pierce County Fire Marshal by the registered professional engineer, certifying construction to NFPA Standard #1231 requirements. It shall be the owner's responsibility to maintain said drafting facilities.

15.40.070 WATER SYSTEM REQUIREMENTS

(I) When the required fire flow exceeds 2,500 GPM, the fire hydrants shall be served on the property by a looped main capable of supplying the required flow.

(II) Pumps being used to provide fire flow shall conform to N.F.P.A. Standard #20.

(III) New or replaced water mains (water main repair excluded) shall be a minimum of eight (8") inches in diameter for deadends, and six (6") inches for looped mains, provided that for deadend cul-de-sacs, an eight (8") inch main
need only extend to the last required fire hydrant and normal domestic mains may
be installed thereafter to the remaining residences. Hydrant leads less than
fifty (50') feet in length shall be a minimum of six (6") inches in diameter.
A deadend main which extends across a street only for the purpose of serving a
single hydrant shall be of a size capable of providing the required fire flow,
but it shall not be less than six (6") inches in diameter. All mains shall have
hydrants and/or tees and valves installed to conform with this regulation,
except that no hydrants, tees or valves shall be required along transmission
mains. Any service connection made to a transmission main may require that a
hydrant or hydrants be installed, pursuant to Section No. 15.40.060, Fire
Hydrant Spacing.

(IV) Standard hydrants shall have not less than five (5") inch main
valve openings (MVO) with two two-and-one-half (2 1/2") inch N.H. outlet ports
and one (1) four and one-half (4 1/2") inch N.H. outlet port. All four-and-
one-half (4 1/2") inch outlet ports shall have 5" storz fittings. Hydrants
shall meet the current A.W.W.A. Standards.

(V) There shall be an auxiliary gate valve installed to permit the
repair and replacement of the hydrants without disruption of water service.

(VI) Hydrants shall stand plumb and be set to the finished grade. The
bottom of the lowest outlet of the hydrant shall be no less than eighteen (18")
ingches above the finished grade, and the bottom of the ground flange shall be
minimum of one (1") inch above finished grade. There shall be thirty-six
(36") inches of clear area about the hydrant for operation of a hydrant wrench
on the outlets and on the control valve. The pumper port shall face the street.
Where the street cannot be clearly defined or recognized, the port shall face
the most likely route of approach and the location of the fire truck while
pumping, as determined by the Pierce County Fire Marshal.

(VII) Hydrants shall be accessible for fire department pumpers.

(VIII) Fire hydrants subject to vehicle damage (i.e., those located in
parking lots) shall be adequately protected.

(IX) All hydrants shall be subject to testing and inspection by the
fire department.
(X) The location of all water mains, fire hydrants, and valves to be installed shall be properly and accurately marked on identifiable plans or drawings, which shall be prepared by a registered professional engineer. Three copies of all plans or drawings shall be furnished to the Pierce County Fire Marshal prior to installation.

(XI) After construction is completed, three copies of the "As Built" drawings shall be filed with the Pierce County Fire Marshal, as well as test results showing the amount of fire flow at each hydrant at 20 p.s.i.

(XII) The tops of all fire hydrants may be color coded as follows:

A) GREEN - over 1,000 g.p.m.
B) ORANGE - 500 to 1,000 g.p.m.
C) RED - less than 500 g.p.m.
D) BLACK - for drafting use only (hard suction/steamer port).
E) WHITE CROSS - over top of color coded hydrant to indicate that it is to be used to fill tankers only.

(XIII) Maintenance of Hydrants:

(A) The purveyor shall provide written notification to the fire district of any hydrant installation. Said notification will state whether or not they have minimum fire flow, and will be accepted in writing by the affected fire protection district.

(B) The fire district will, after notifying the purveyor, test hydrants for flow capability and may color code tops of hydrants with proper notification to the purveyor.

(C) The fire district will check operation of hydrants and notify the purveyor, in writing, of any malfunction or leaking which will require correction.

(D) The purveyor will respond within 48 hours when notified of a malfunction of a hydrant, and no hydrant shall be out of service more than thirty (30) days. The purveyor shall be responsible for maintaining all portions of the fire hydrants, except for external painting and elimination of vegetation obstructing or blocking access to or operation of hydrants, which shall be conducted by the affected fire protection district. In the event that repairs require reduction of water flow or shutdown of a system, the purveyor shall notify the local fire district immediately.
15.40.080 Purveyor Requirements. All purveyors shall continuously supply water at or above the minimum flow requirements at all times as specified herein; provided that the purveyor need not comply with these requirements in the event of vandalism, acts of God, loss of power, temporary shut down for repairs and/or replacement. Purveyors shall conform to all requirements of this Ordinance pertaining to the installation of source, storage, distribution mains and fire hydrants.

15.40.090 Minimum Flow Variance for Water Purveyors. In the event a subdivision, short subdivision or commercial or industrial project is unable to provide adequate water flow due to the unavailability of an adequate water supply, the development may be allowed to proceed pursuant to this variance. The applicant shall submit the following:

(I) A letter to the Pierce County Fire Marshal from the water purveyor indicating the reason the water company is unable to provide the fire flows in accordance with this ordinance.

(II) A plan designed by a registered professional engineer must be submitted to the Pierce County Fire Marshal which shows the system improvements necessary to increase the water flows, and shall be in accordance with the current water system plan for the purveyor, approved by the Washington State Department of Health for the service area, and it shall comply with this ordinance in the time period specified herein. The system improvements or expansion shall be designed so that the water supply for the remainder of the supplier's service will not be detrimentally affected.

(III) A letter from the water purveyor stating that at the very minimum, the purveyor will comply with the following schedule:

<table>
<thead>
<tr>
<th>Type of Development</th>
<th>Percent of Compliance with Required Fire Flow GPM</th>
<th>Time When Applicable Percent Must Be Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial or Industrial</td>
<td>75% of GPM</td>
<td>Prior to Issuance of Building Permit</td>
</tr>
<tr>
<td></td>
<td>100% of GPM</td>
<td>Within 5 Years After Issuance of Building Permit</td>
</tr>
</tbody>
</table>
(IV) The letter from the purveyor shall specify dates when aspects of the plan must be satisfied and that said purveyor will notify the Pierce County Fire Marshal as to when these dates occur and what progress has been made. Status reports shall be provided to the Pierce County Fire Marshal on a schedule set by the Fire Marshal.

(V) The letter shall include a breakdown of the necessary costs for the system improvements and must include the purveyor's sources for the funds necessary to implement said system.

Based on the information supplied and any other available information, including the water supplier's past history for reliability, the Pierce County Fire Marshal shall approve or disapprove the applicant's request to proceed under this variance. The Pierce County Fire Marshal's decision shall be made in writing and shall briefly explain the primary basis for the decision.

(VI) If at the end of five (5) years, the purveyor shows intent to comply in accordance with the approved plan but development in the area has not been as expected so that the purveyor is not in full compliance, an extension of time may be granted a water purveyor based on unforeseen circumstances and approval by the Pierce County Fire Marshal and the Washington State Department of Health. The extension of time shall not exceed five (5) years.

15.40.100 PROCEDURES FOR COMPLIANCE. The following shall be required for formal subdivisions, short subdivisions, commercial and industrial projects, all water systems, and all other projects which must comply with this regulation:

(I) Requirements for formal subdivisions:

A) Upon submittal of site plan or preliminary plat, the applicant shall submit to the Pierce County Fire Marshal, a letter from the water purveyor addressing its willingness and ability to satisfy the requirements of this regulation.

B) Prior to final plat approval, the following shall be required:

(1) Water system plans and specifications which shall comply with this ordinance must be designed and stamped by a registered professional engineer. Said plans shall be filed with and
approved by the Pierce County Fire Marshal and the Washington
State Department of Health.
(2) Water system plans shall be approved in writing by the Pierce
County Fire Marshal.
(3) The approved water system shall be installed prior to final
plat approval; however, this requirement may be waived if a bond
or other security is posted and approved prior to said plat
approval. The form of security, if other than a bond, shall be
approved by the Prosecuting Attorney's Office. The amount of the
bond or security shall be determined by the registered engineer
who designed the system and the purveyor who shall supply the
water. The bond or other security shall be issued to Pierce
County and shall be approved by the Pierce County Fire Marshal.
Periodic progress reports on the installation of the system may
be required by the Pierce County Fire Marshal. Prior to said
approval, the purveyor shall submit a letter to the Pierce County
Fire Marshal stating its commitment to install the water system
in the event the system is not installed by the applicant.
(4) Three (3) copies of the "As Built" drawings shall be filed
with the Pierce County Fire Marshal, as well as test results
showing the amount of fire flow at each hydrant at 20 p.s.i.
(C) When the distribution system is installed, said installation must
be under the direction of a registered professional engineer who shall
certify that the construction of the system is in accordance with the
approved design. In the event a bond is posted, installation of the
system must be completed and operable, in accordance with this
ordinance, prior to occupancy or any other use of any structure.
(II) Requirements of short subdivisions and commercial and industrial
projects:
A) Prior to approval of plat/project, the applicant shall submit to
the Pierce County Fire Marshal, a letter from the water purveyor
addressing its willingness and ability to satisfy the requirements of
this regulation. Water system plans and specifications which comply
professional engineer. Three sets of said plans shall be filed with and approved by the Pierce County Fire Marshal.

B) Water system plans shall be approved in writing by the Pierce County Fire Marshal.

C) The approved water system must be installed prior to final short plat approval and prior to the issuance of a building permit; provided that this requirement may be waived if a bond or other security is posted and approved prior to said issuance. The form of security, if other than a bond, shall be approved by the Prosecuting Attorney's Office. The amount of the bond or security shall be determined by the registered engineer who designed the system and the purveyor who shall supply the water. The bond or other security shall be issued to Pierce County and shall be approved by the Pierce County Fire Marshal. Prior to said approval, the purveyor shall submit a letter to the Pierce County Fire Marshal stating its commitment to install the water system in the event the system is not installed by the applicant.

D) After the system in installed, three (3) copies of the "As Built" drawings shall be filed with the Pierce County Fire Marshal, as well as test results showing the amount of fire flow at each hydrant at 20 p.s.i.

(III) Requirements for Water Systems: Water Storage; and Comprehensive Water System Plans as required by C.W.S.P.

A) Prior to approval, water system plans and specifications subject to this ordinance, must be designed and stamped by a registered professional engineer, and shall be filed with the Pierce County Fire Marshal.

B) Water storage and water system plans shall be approved in writing by the Pierce County Fire Marshal.

C) Prior to final approval, three (3) copies of "As Built" drawings shall be filed with the Pierce County Fire Marshal, as well as test results showing the amount of fire flow at each hydrant at 20 p.s.i., as required by this Ordinance.
(IV) Water System Requirements for Rural Areas Covered by NFPA Standard #1231.

A) Upon submittal of the site plan and engineered system plans, the applicant shall include a letter to the Pierce County Fire Marshal detailing the proposal to meet the requirements of this regulation.

B) Prior to final approval, the following shall be required:

1. Water system plans and specifications which comply with NFPA Standard #1231 must be designed and stamped by a registered professional engineer, and three (3) copies shall be filed with, and approved by, the Pierce County Fire Marshal.

2. The approved water system shall be installed prior to final approval, provided that this requirement may be waived if a bond or other security is posted and approved prior to said final approval. The form of security if other than a bond, shall be approved by the Prosecuting Attorney's Office. The amount of the bond or security shall be determined by the registered professional engineer who designed the system, and the purveyor and/or contractor who shall install the system. The bond or other security shall be issued to Pierce County, and shall be approved by the Pierce County Fire Marshal. Prior to said approval, the purveyor and/or contractor shall submit a letter to the Pierce County Fire Marshal stating their commitment to install the water system in the event the system is not installed by the applicant.

3. Three (3) copies of the "As Built" plans shall be submitted to the Pierce County Fire Marshal by the registered professional engineer, certifying the construction to NFPA Standard #1231 requirements.

15.40.100 15.40.110 WAIVERS. Some of the requirements of this Chapter may be waived and/or alternate procedure(s) approved by the Pierce County Fire Marshal, after conferring with the affected fire district, if the waiver(s) or alternate procedure(s) will not result in inadequate fire protection. These alternate procedure(s) may include (but not be limited to) sprinkler systems that meet the requirements of the N.F.P.A. Standards, approved alarm system(s) that meet the
requirements of U.F.C. Article 14, or other alternative(s). All waiver(s) and
alternate procedure(s) approvals must be in writing, the reasons given for each,
and a copy must be placed in a waiver notebook, and a copy mailed to the
appropriate fire district chief. Neither the Pierce County Fire Marshal or his
designee, nor any other authority is authorized by this ordinance to waive the
requirements of the Uniform Fire Code or the Uniform Building Code as adopted
by Pierce County.

15.40.120 ENFORCEMENT, VIOLATIONS, APPEALS AND PENALTY.

(I) No final plat for subdivisions shall be approved by the Hearing
Examiner until receipt of verification from the Pierce County Fire Marshal that
the provisions of this ordinance have been satisfied. No building permit shall
be issued in subdivisions, short subdivisions or for commercial and industrial
structures until the Building Department has received verification from the
Pierce County Fire Marshal that the provisions of this ordinance have been
satisfied.

(II) In the event a water purveyor has violated the terms of this
ordinance, the Pierce County Fire Marshal shall issue a Violation Notice to the
purveyor.

(III) In addition to the above, the Pierce County Fire Marshal and/or
the Building Official shall issue Cease and Desist Orders whenever any person,
firm or corporation is taking any action which is in violation of this
ordinance. Such Cease and Desist Order shall not cause any interruption of
domestic service provided by a water purveyor. Such Order shall specify each
violation and shall state that a hearing may be requested by the affected party
by sending a written request for the hearing to the Board of Appeals within ten
(10) days of receipt of the said Order.

(IV) Appeals. Decisions or orders of the Pierce County Fire Marshal
made pursuant to the authority granted herein may be appealed by an aggrieved
party to the Board of Appeals (as established by Pierce County Code) by making
a written request for a hearing to such Board within ten (10) days of the
receipt of such written order or decision. The Board of Appeals shall hold a
hearing within thirty (30) days and may uphold, modify, or reverse the decision
of the Pierce County Fire Marshal. Decisions of the Board of Appeals may be
appealed to the Pierce County Hearing Examiner within ten (10) days of receipt of the Board's final order, pursuant to the provisions of Pierce County Code. All issues which are on appeal are stayed until final resolution by the Board of Appeals or the Pierce County Hearing Examiner. No plat shall be approved, no building permit shall be issued nor development continued during this stayed appeal period unless such is authorized by the authority before which the appeal is pending.

(V) Civil Penalty. Any person, firm or corporation who is found to be in violation of any provisions of this code, and who is issued a Cease and Desist Order, and fails to act on that Order shall incur a cumulative civil penalty in the amount of $500.00 per day for each violation. The civil penalty shall commence five (5) days after service of the Cease and Desist Order; provided, that the civil penalty shall be tolled if a proper request is made for a hearing, until the time of the final decision of the Board of Appeals or the Pierce County Hearing Examiner. A lien shall attach (in favor of Pierce County) for any civil penalty imposed pursuant to this code against the real property on which the civil penalty was imposed. Said lien shall attach by filing a copy of the Cease and Desist Order, the penalty amount and a notice of lien with the Pierce County Budget & Finance Department. The penalty amount shall be paid to the Pierce County Office of Fire Prevention and Arson Control.

15.40.130 SEVERABILITY. If any provision of this Chapter, or its application to any person or legal entity or circumstance, is held invalid, the remainder of the ordinance, or the application of the provision to other persons or legal entities or circumstances shall not be affected.

WP\A: FIREFLOW.13
December 10, 1990