

## Appendix B. Water-Saving Codes

### EXHIBIT 1. FROM THE BOCA BASIC PLUMBING CODE, 1981\*

#### §P-1503.8—Minimum Required Flow Rates and Pressures

Based on the minimum static water pressure available, pipe sizes shall be selected so that, under conditions of peak demand, a minimum flow pressure and flow rate at the point of discharge shall not be less than shown in Table 2. In determining minimum pressures at the outlets, allowance shall be made for the pressure drop due to friction loss.

#### §P-1503.9—Maximum Flow Rates and Pressure Conditions

Water supply to shower heads, lavatory faucets, kitchen faucets, and similar equipment shall be equipped with ap-

TABLE 2. MINIMUM REQUIRED FLOW RATES AND PRESSURES<sup>a</sup>

Location	Flow pressure (psi)	Flow rate, at point of discharge (gpm)
Ordinary basin faucet <sup>c</sup>	8 psi	2 gpm
Self-closing basin faucet <sup>c</sup>	8	2-1/2
Sink faucet, 3/8 inch	8	3
Sink faucet, 1/2 inch	8	3
Bathtub faucet	8	4
Laundry tub cock, 1/2 inch	8	4
Shower	8	3
Ball cock for closet <sup>d</sup>	8	3
Flush valve for closet <sup>b c</sup>	15	15-35
Flushometer valve for urinal <sup>d</sup>	15	15
Drinking fountain outlets	15	3/4
Sill cock—wall hydrant	10	5
Flush valves for wall-hung, blow-out, and syphon-jet water closets <sup>d</sup>	25	35

- a. To convert pounds per square inch (psi) to kiloPascals, multiply by 6.894; to convert gallons per minute (gpm) to liters per minute, multiply by 3.785.
- b. Wide range due to variation in design and type of closet flush valves.
- c. Lavatories in restrooms of public facilities shall be equipped with outlet devices that limit the flow rate to a maximum of 0.5 gpm.
- d. All water closets and urinals shall use a maximum of four gallons of water per flushing cycle. . . .

\*BOCA Basic Plumbing Code/1981, Copyright 1981, Building Officials and Code Administrators International, Inc. Published by arrangements with author. All rights reserved. No parts of this book may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by an information, storage, and retrieval system without advance permission in writing from Building Officials and Code Administrators International, Inc. For information, address: BOCA, Inc., 17926 S. Halsted St., Homewood, IL 60430.

proved water-saving devices, restricting and controlling the flow to not more than 3 gpm (11.34 lpm) at 80 psi (551.52kPa) flowing.

#### §P-1503.91—Mixed Water Temperature Control

The temperature of mixed water to multiple or gang showers shall be controlled by a master thermostatic blender, or such showers may be individually regulated by balanced pressure mixing valves. Individual showers in commercial and public buildings subject to rapid rise of mixed water temperature due to system pressure fluctuation shall have balanced pressure mixing valves in addition to flow rates as required under Section P-1503.8.\*\*

### EXHIBIT 2. AMENDMENTS TO UNIFORM PLUMBING CODE, FORT COLLINS, COLORADO WATER-SAVING PLUMBING FIXTURES, (ADOPTED APRIL 1980)

#### I. New Construction; Interior Plumbing

All interior plumbing in new buildings shall meet the following requirements:

- a. Toilets shall not use more than 3-1/2 gallons per flush, except that toilets and urinals with flush valves may be installed;
- b. Shower heads shall contain flow-control inserts, valves, devices, or orifices that restrict flow to a maximum of approximately three gallons per minute.
- c. Kitchen and lavatory faucets shall have aerators or laminar-flow devices, together with flow-control inserts, valves, devices, or orifices that restrict flow to a maximum of approximately two gallons per minute.

#### II. Existing Buildings

In existing buildings or premises in which plumbing installations are to be replaced, such replacement shall comply with all code requirements for water-saving devices.

### EXHIBIT 3. WASTING WATER ORDINANCES, FORT COLLINS, COLORADO

#### §112-22. Sprinkling; Waste Prohibited

The use of water from the city water utility for sprinkling shall be limited to watering lawns, ornamental trees, shrubs, vines, flowers, and domestic gardens. It shall be unlawful to permit water to flow, run, or be discharged

\*\*Because shower flow controls can cause rapid temperature changes in shower water, this provision is included in the code to prevent injury by scalding. Setting water heaters at 120° F when flow controls are used is also recommended to reduce the risk of scalding.

in the streets or sidewalks of the city in a wasteful manner. All wasting of water in any manner is hereby prohibited and considered a violation of this article.

**§112-23. Limitation on Nozzles for Sprinkling**

No hose nozzle or discharge vent used for sprinkling water from the water utility shall be more than one-fourth (1/4) inch in diameter.

**§112-24. Restrictions on Sprinkling**

The use of water from the city water utility for sprinkling is prohibited between the hours of 12:00 midnight and 4:00 p.m., except in cases where the occupant of the property obtains a permit allowing such sprinkling on account of a programmed automatic sprinkler system. The use of water from the water utility for sprinkling purposes may, upon recommendation of the Water Board, be further prohibited or restricted by order of the City Council. Such order shall be effective when notice thereof is published once in a daily newspaper published in the city. Upon the publication of such notice, the sprinkling restrictions or

prohibitions so prescribed shall take effect. Water shall not be used through hoses or pipes without nozzles or sprinklers attached thereto. This regulation shall apply to all users of water whether by flat rate or metered service. The setting of sprinklers or nozzles so as to interfere with traffic on sidewalks is prohibited. The use of city water in violation of any regulations contained in this section or in any other section of this article or of any regulations adopted pursuant to this section shall be a violation of the ordinances of the city of Fort Collins, punishable as provided in No. 1-23 of Chapter 1 of this code. (Up to \$300 fine or 90 days in jail.) (Amended 7/5/78 by Ord. No. 62, 1978.)

**§112.25. Emergency Restrictions; Authority of City Manager**

In the event of a major fire or any other emergency that should require the immediate curtailment of the use of water from the water utility, the City Manager shall have the authority to make such restrictions as he deems necessary for the protection of the public.

Appendix B. reprinted with permission from Water Conservation in Residential Development: Land-Use Techniques, PAS report 373, published Dec. 1982 APA