TABLE 1. AVERAGE MAXIMUM WATER MAIN TEMPERATURES[a]

STATE	CITY	TEMP. F	STATE	CITY	TEMP. F
Ala.	Burmingham	84	Mass.	Boston	80
	Mobile	73		Cambridge	70
Ariz.	Phoenix	81		Fall River	76
	Tucson	80		Lowell	50
Calif.	Anaheim	60		Lynn	68
	Berkeley	69		New Bedford	70
	Fresno	72		Salem	68
	Fullerton	75		Worcester	76
	Glendale	68	Mich.	Detroit	77
	Los Angeles	75		Flint	70
	Oakland	69		Grand Rapids	84
	Ontario	70		Highland Park	77
	Pasadena	82		Jackson	56
	Pomona	75		Kalamazoo	53
	Riverside	78		Lansing	64
	Sacramento	72		Saginaw	82
	San Bernardino	65	Minn.	Duluth	55
	San Diego	82		Minneapolis	80
	San Francisco	62		St. Paul	77
	Whittier	75	Mo.	Jefferson City	82
Colo.	Denver	75		Kansas City	84
Conn.	Bridgeport	66		St. Joseph	84
	Hartford	73		St. Louis	85
	New Haven	76		Springfield	70
	Waterbury	72	Nebr.	Lincoln	87
D. C.	Washington	84		Omaha	87
Del.	Wilmington	83	Nev.	Reno	61
Fla.	Jacksonville	80	N. H.	Manchester	76
	Miami	80	N. J.	Jersey City	63
	Tampa	77		Newark	74
Ga.	Atlanta	87		Paterson	78
	Macon	80		Trenton	79
Ill.	Chicago	76	N. Y.	Albany	68
	Cicero	76		Buffalo	75
	Evanston	73		Jamaica	56
	Peoria	67		Mt. Vernon	74
	Rockford	59		New Rochelle	75
	Springfield	82		New York	72
Ind.	Evansville	86		Rochester	70
	Gary	75		Schenectady	60
	Indianapolis	80		Syracuse	74
	South Bend	61		Utica	69
	Terre Haute	82		Yonkers	70
Iowa	Cedar Rapids	78	N. C.	Asheville	74
	Des Moines	77		Charlotte	85
	Sioux City	62		Winston-Salem	82
Kans.	Concordia	57	N. M.	Albuquerque	65
	Kansas City	86	Ohio	Akron	76
	Topeka	88		Canton	50
	Wichita	72		Cincinnati	84
Ky.	Louisville	85		Cleveland	74
La.	Baton Rouge	85		Columbus	82
	New Orleans	85		Dayton	60
Me.	Augusta	60		Lakewood	82
Md.	Baltimore	67		Springfield	72
				Toledo	83

[a]These averages taken from various city water main locations, with some actual values slightly higher and some lower than values shown.

TABLE 1. AVERAGE MAXIMUM WATER MAIN TEMPERATURE[a] (CONTINUED)

STATE	CITY	TEMP. F	STATE	CITY	TEMP. F
Okla.	Oklahoma City	82	Utah	Logan	44
	Tulsa	85		Salt Lake City	60
Oreg.	Eugene	60	Va.	Fredericksburg	75
	Portland	64		Lynchburg	73
Pa.	Altoona	74		Norfolk	80
	Erie	75	Wash.	Olympia	58
	Johnstown	74		Seattle	62
	McKeesport	82		Spokane	51
	Philadelphia	83		Tacoma	57
	Pittsburgh	67	W. Va.	Charleston	85
R. I.	Providence	68		Huntington	78
S. C.	Charleston	80		Wheeling	78
	Greenville	81	Wis.	LaCrosse	54
	Spartanburg	78		Madison	58
S. Dak.	Rapid City	55		Milwaukee	70
Tenn.	Chattanooga	84		Racine	68
	Knoxville	89			
	Memphis	70			
	Nashville	90			
Texas	Amarillo	65	PROVINCE		
	Austin	90			
	Beaumont	86			
	Dallas	86	Alta.	Calgary	64
	Fort Worth	84	B. C.	Vancouver	60
	Galveston	90	Ont.	London	50
	Houston	84		Toronto	63
	Port Arthur	83	P. E. I.	Charlottetown	48
	San Antonio	76	Que.	Montreal	78
	Wichita Falls	85		Quebec	68

[a]These averages taken from various city water main locations, with some actual values slightly higher and some lower than values shown.

mentioned. Cooling by evaporation is satisfactory only when the air to be cooled is very dry; air motion as a means of producing cooling effect is never entirely adequate in the range of high temperatures. Of the two, evaporative cooling, or adiabatic saturation of the air, is a much more dependable method which will make more reduction in the effective temperature than will an increasing air motion within permissible limits.

As an example of this, consider an outdoor condition of 96 F dry-bulb and 80 F wet-bulb. The effective temperature is 85.7 F and, if the still air is moved with a velocity of 300 fpm, the effective temperature will be reduced only 2.0 F while saturation at the wet-bulb temperature would reduce the effective temperature 5.7 F. At 300 fpm velocity this saturated air would reduce the effective temperature to 75.6 F, thus making a total improvement of 10.1 F.

Frequently the temperature of the city water main supply is low enough during the summer to permit an appreciable cooling effect. Table 1 lists the maximum city water main temperatures for various localities in this country and Canada.

EVAPORATIVE COOLING

Evaporative cooling is accomplished by passing air through a water