and of the armamentarium common to modern dental practice in the preparation of a tooth to receive a full veneer metallic crown that the absence of a rotating tool or tools designed to reduce rounded tooth surfaces to conform with the preparation requirements posed a major instrumental problem. An attempt to design tools of relatively universal application to meet the clinical requirements became the object of the study. Veneer tools were designed which, when put to clinical use, proved to be of value in materially reducing the preparation time by increasing the efficiency of the operation.

The status of fluoridation programs in the United States, its territories and possessions

W. Philip Phair, D.D.S., M.P.H., and Marian F. Driscoll,† A.B., Chicago*

A survey completed by the Council on Dental Health in August, 1952, revealed that nearly 8,000,000 persons in 367 United States communities are receiving fluoridated water and that more than 16,000,000 additional people are scheduled to benefit soon from the public health measure by official actions of approval in 317 other communities. When these 317 projects are in operation, there will be approximately 24,000,000 people in the United States receiving fluoridated water in addition to some 4,000,000 who are known to be served by water with natural fluoride concentrations higher than 0.7 ppm.[1] All figures in this narrative report are exclusive of the territories and possessions which have been included in Table 3.

Questionnaires were mailed to all state and territorial health departments requesting specific information on fluoridation programs in their respective areas. In some instances, information was received directly from local officials. The survey was not related to the natural occurrence of fluorides in public water supplies. Information was received from Alaska, the District of Columbia, Hawaii, Panama Canal Zone, Puerto Rico, and all states except Arizona. Hawaii, Missouri, Nevada and Utah reported that there were no communities where official action had been taken on fluori-

Since this survey was completed, information has been received in the Central Office indicating that the total number of communities receiving fluoridated water as of September 30, 1952, was 423. These communities are served by 274 separate water systems. The total number of communities that had approved fluoridation and were planning to start operation was 305 as of September 30.

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1. Task Group E5-10, Committee on fluoridation materials and methods, American Water Works Association. Natural and applied fluoridation census, J.A.W.W.A. 44:553 (June) 1952.

dation, and these areas are not included in Table 3.

The fluoridation program is gaining momentum as is evidenced by the fact that more than 40 per cent of the communities now receiving fluoridated water began their projects during the first seven months of 1952 and that nearly half of the new official approvals were given during this same period. In view of the fact that only 28 communities were using fluoridated water in late 1949 when fluoridation was recommended by the American Dental Association, the rapid progress made in this important public health measure is noteworthy.

According to a recent estimate, there are 16,747 public water supplies in the United States[2] and at least 1,401 of these have a natural fluoride concentration higher than 0.7 ppm.[1] Frequently more than one community is served by one supply. For instance, the 367 communities now receiving fluoridated water are served by 256 separate water systems, and the 317 communities where the procedure has been approved are served by 283 separate water systems.

If the gains made during the last few years can be used as some indication of the progress that will be made in the future, a mathematical estimate will give the hypothetical date of 1975 as the year when all fluoride-deficient public water supplies in the United States will have been fluoridated. This date is 23 years hence and highly problematical, but it is possible that the adoption of fluoridation programs will increase at an even greater rate and that the majority of public water supplies will have been fluoridated before 1975.

UNFAVORABLE ACTIONS

Progress is being made in spite of the fact that many objections have been raised by the misinformed and by those who have chosen to oppose the measure, apparently for reasons of financial and political expediency or personal notoriety. Such persons have been largely responsible for unfavorable official actions in 39 communities: fluoridation was defeated in 22 referendums and four town meetings; city councils acted unfavorably in 12 instances, and the measure was opposed by the utility board in one community.

In three other communities the procedure has been discontinued, two as the result of referendums (Stevens Point, Wis. and Mount Dora, Fla.) and the other because of local controversy (Assumption, Ill.). These are the only three projects reported to have been halted after inauguration that have not yet resumed operation. Fluoridation was stopped for a few months in Charlotte, N. C., because of a problem in the ice manufacturing industry, but this problem was solved by procedures common to the industry and fluoridation was resumed. A temporary injunction halted the fluoridation program for a short time in Northampton, Mass., but the injunction was dismissed by court action. No court has, as yet, permanently restrained fluoridation.

METHOD OF APPROVAL

In the majority of instances, approval of the measure came through action of city councils or similar bodies, depending on the local governmental organization. Approval was obtained in 22 out of 45 instances where referendums were involved; the measure was acted on favorably at 10 of 14 town meetings in New England.

COMPOUND USED

The first choice of chemical, according to the reports, is sodium fluoride (NaF) which is used in 137 projects. Sodium

2. Bachman, George W., and associates. Health resources in the United States. Washington, D. C., The Brookings Institution, 1952, p. 207.

silicofluoride (Na_2SiF_6) is used in 104 projects, hydrofluosilicic acid (H_2SiF_6) in 26 projects and hydrofluoric acid (HF) in one project (Table 1).

Twelve Wisconsin projects started with sodium fluoride and later changed to sodium silicofluoride. An earlier report indicated that practically all water plants use dry feed units for sodium silicofluoride while half of the plants employing sodium fluoride use solution feeders and the other half, dry feeders.[1]

COST PER CAPITA

The annual per capita cost ranges from less than two cents ($0.018) to 25 cents. It appears that per capita cost figures are usually submitted on the basis of the annual expenditure for the fluoride compound. Waterworks operators state that added labor costs for fluoridation usually are negligible and difficult to ascertain. In 27 Wisconsin cities, however, estimates were made for a proportion of water plant labor costs which might be applied to fluoridation. These costs are not included in the table, but were estimated to run between one and 20 cents per capita and averaged seven cents. The questionnaire requested that equipment costs not be included in the annual per capita costs. Information on this subject is included in the Council's booklet "Fluoridation in the Prevention of Dental Caries," published in August, 1952.

Table 1. Number of water systems employing various fluoride compounds by year fluoridation began*

Year fluoridation began	NaF	Na_2SiF_6	H_2SiF_6	HF
1945-49	24	9	0	1
1950	16	13	1	0
1951	52	43	15	0
Jan-Aug. 1952	45	39	10	0
Totals	137	104	26	1

*One city reported use of both NaF and Na_2SiF_6 and another city reported use of both Na_2SiF_6 and H_2SiF_6.

Table 2. Average annual per capita cost of fluoridation according to fluoride compound employed

	NaF	Na_2SiF_6	H_2SiF_6
Number reporting cost	70	63	7
Highest cost	$0.232	$0.25	$0.14
Lowest cost	0.02	0.025	0.018
Average cost	0.096	0.077	0.10

Where sodium fluoride is employed, the average annual per capita cost is about nine and a half cents; for sodium silicofluoride, the cost is slightly more than seven and a half cents, and for seven projects using hydrofluosilicic acid, the average cost is 10 cents (Table 2).

HOW FINANCED

The majority of projects are financed by funds received by the water department from the sale of water. Several projects that were reported to be financed through the city budget for the water department are arbitrarily listed under "general funds." Of the 367 projects in operation, the method of financing is listed for 167 as follows: 61 through general funds (regular city budget), 93 through water revenues and 13 by other means which are listed in the "comments" column.

The questionnaire requested information as to whether water rate increases were necessary to finance the project. Only four indicated that an increase was necessary, while 21 others specifically stated that increases were not made.

COMMENT

The Council endeavors to keep current information on the status of fluoridation throughout the country. It is hoped that dentists, state health department personnel and other persons concerned will help supply information on each project as official approval, implementation or unfavorable community actions occur.

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
ALABAMA																
Tuscaloosa*	52,734		X		July 1952	X				X		$0.05	X			
Holt			X													
Northport			X													
Totals		0	3	0		1	0	0	0	1	0		1	0	0	In operation: 52,734
ARKANSAS																
Jonesboro	17,692		X		Oct. 1951	X			X			†		X		No increase in water rates
Nettleton			X													
Little Rock	146,310		X		Apr. 1951	X			X			†		X		No increase in water rates
No. Little Rock			X													
Walnut Ridge	3,106		X		Jan. 1952	X			X			†		X		No increase in water rates
Totals		0	5	0		3	0	0	3	0	0		0	3	0	In operation: 167,108
CALIFORNIA																
Alameda	64,430	X			1952	X										
Antioch	11,051		X		†	X										
Belmont	5,567	X			Apr. 1952		X									
Berkeley	113,805	X			1951	X										
Carmel	4,351			X	June 1952		X									
Cloverdale	1,292			X	Apr. 1952		X									
Colusa	3,031	X			Mar. 1952	X										
Fresno Co. Water Districts 1 & 2	178,565	X			June 1952			†								
Grass Valley	5,283	X			Nov. 1951		X									
Hayward	14,272	X			Apr. 1952		X									
Healdsburg	3,258	X			Apr. 1952		X									
Martinez	8,268	X			Apr. 1952		X									
Monterey	16,205			X	June 1952		X									
Morgan Hill	1,627		X		Apr. 1952	X			X			†		X		
Oakdale	4,064			X	Apr. 1952		X									

Oakland	384,575	X			1951	X										
Pacific Grove	9,623			X	June 1952		X									
Placerville	3,749	X			Apr. 1952	X										
Pleasanton	2,244	X			1951	X										
Richmond	99,545	X			1952	X										
Rio Vista	1,831		X		Oct. 1951	X			X			†		X		
Roseville	8,723	X			Apr. 1952		X									
San Bruno	12,478			X	Apr. 1952		X									
San Carlos	14,371			X	Apr. 1952		X									
San Diego	334,387	X			1951	X										City won nonsuit to restrain program; new trial denied in superior court
San Francisco	650,000		X		Aug. 1952		X									Serves mainly residential districts, not entire population
San Leandro	27,542	X			1952	X										
Santa Cruz	21,970			X	June 1952		X									Previously approved by City Council
Santa Maria	10,440			X	Apr. 1952		X									
Santa Rosa	17,902			X	Apr. 1952		X									
Sunnyvale	9,829	X			Mar. 1952	X										
Woodlake	2,525	X			Apr. 1952		X									
Totals		18	4	10		13	18	0	2	0	0		0	2	0	Approved: 1,269,598 In operation: 664,509
COLORADO																
Grand Junction	20,000		X		June 1951	X				X		0.10	X			No increase in water rates
Johnstown	897	X			June 1952	X										
Loveland	6,773	X			May 1952	X										
Montrose	4,864	X			1950	X										
Palisade	861	X			1951	X										
Totals		4	1	0		5	0	0	0	1	0		1	0	0	Approved: 13,395 In operation: 20,000
CONNECTICUT																
Cromwell	2,500		X		June 1951		§		X			0.232		X		
Mansfield State Training School	1,725		X		Sept. 1950			X	X			0.128	X			Approved by board of trustees
New Britain	80,000		X		Dec. 1950	X			X			0.12		X		
Southbury State Training School	1,800		X		Apr. 1945			X	X			0.128	X			Approved by board of trustees
Wallingford	17,000	X			Dec. 1951	X										
Yalesville		X														
Totals		2	4	0		2	1	2	4	0	0		2	2	0	Approved: 17,000 In operation: 86,025

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
DELAWARE																
Dover	6,200	X			Apr. 1951	X										
Newark	7,200		X		Jan. 1951	X			X			0.052	X			No increase in taxes
Smyrna	2,346	X			June 1952	X										
Totals		2	1	0		3	0	0	1	0	0	.	1	0	0	Approved: 8,546 In operation: 7,200
FLORIDA																
Clewiston	2,499		X		Oct. 1951	X				X		†	X			
Gainesville	26,861		X		Oct. 1949	X			X			0.066	X			
Lakeland	30,851			X	1951	X										Temporary ordinance expired; not renewed
Miami	249,276		X		Apr. 1952	X				X		†	X			
Coral Gables	19,837		X													
Hialeah	19,676		X													
Miami Beach	46,282		X													
Miami Shores Village	5,086		X													
Miami Springs	5,018		X													
South Miami	4,809		X													
West Miami	4,043		X													
Mount Dora	3,028			X	Aug. 1952		X									Fluoridation discontinued
Naples	1,365		X		Oct. 1951	X			X			†	X			
Sanford	11,935	X			1951	X										
Tallahassee	27,237	X			1951	X										
Totals		2	11	2		7	1	0	2	2	0		4	0	0	Approved: 39,172 In operation: 384,302
GEORGIA																
Athens	28,000		X		Feb. 1951	X			X			0.06	X			
Dekalb County	75,000				Apr. 1951	X				X		0.15		X		
Avondale			X													
Brookhaven			X													
Chamblee			X													
Clarkston			X													
Decatur			X													

Decatur			X													
Doraville			X													
Druid Hills			X													
Dunwoody			X													
Norcross			X													
Panthersville			X													
Redan			X													
Scottdale			X													
Tucker			X													
Gainesville	11,936	X				†	†									
Montezuma	2,921	X				†	†									
Rome	29,615	X				†	†									
Rossville	3,892	X														
Waycross	18,899	X				†	†									
Totals		5	14	0			2	0	0	1	1	0		1	1	0	Approved: 67,263 In operation: 28,000
IDAHO																
Bonners Ferry	3,500		X		Mar. 1952		X				X		0.11		X	
Coeur d'Alene	14,000		X		Jan. 1952		X				X	X	0.14		X	Private utility. Reported use of two compounds
Lewiston	13,400		X		June 1947		X			X			0.22		X	Study project
Lewiston Orchards	4,000		X		June 1952				X		X		0.05		X	Approved by Irrigation District Board
Preston	4,500		X		Jan. 1952		X				X		0.25		X	
Salmon	2,700	X			Apr. 1952		X									
Sandpoint	4,500		X		Apr. 1952		X				X		0.25		X	
Kootenai	250		X													
Ponderay	250		X													
Totals		1	8	0			6	0	1	1	5	1		0	6	0	Approved: 2,700 In operation: 44,400
ILLINOIS																
Assumption	1,466			X	Apr. 1952		X										Program discontinued because of local controversy
Carbondale	10,911	X			Sept. 1951		X									
Carlyle	2,666		X		June 1952		X			X			†	X		
Beckemeyer	1,045		X													
Chester	5,366		X		Dec. 1951		X				X		†	X		
Evanston	73,030		X		Feb. 1947		X			X			0.107			X	Study project financed by local, state and federal health departments
Skokie	14,832		X													
Freeport	22,425	X				†	X									
Lawrenceville	6,351	X			Jan. 1952		X									
Morton Grove	3,926	X			June 1952		X									
Park Forest	8,138	X			June 1952		X									

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
ILLINOIS—Continued																
Park Ridge	16,602			X	Apr. 1952	X										Approved by City Council, vetoed by Mayor
Ridgway	890	X			†	X										
Rockford	92,503	X			Apr. 1952		X									
Waukegan	39,099		X		Apr. 1952	X				X		†	X			
Totals		7	6	2		12	1	0	2	2	0		3	0	1	Approved: 145,144 In operation: 136,038
INDIANA																
Batesville	3,900		X		Apr. 1952	X			X			0.08	X			
Oldenburg			X													
Bedford	13,756		X		Jan. 1952	X				X		0.07	X			
Oolitic			X													
Columbus	18,365		X		Jan. 1952	X				X		0.09	X			
Culver	1,563	X			Apr. 1952	X										
Fort Wayne	132,840		X		July 1951	X				X		0.06	X			
Goshen	13,008	X			June 1952	X										
Greensburg	6,619	X			June 1952	X										
Hammond	87,594	X			Apr. 1952	X										
Huntingburg	4,057		X		Aug. 1951	X				X		0.05	X			
Indianapolis	484,693		X		Aug. 1951			‡	X	X		0.08		‡		Reported use of two compounds
Beech Grove			X													
Ben Davis			X													
Mars Hill			X													
Southport			X													
Woodruff Place			X													
Kokomo	38,672	X			June 1952	X										
Lyons	692		X		Apr. 1952	X			X			0.09	X			
Michigan City	28,379		X		Apr. 1952	X			X			0.14	X			
New Carlisle	747	X			Dec. 1951	X										
Tell City	5,768		X		May 1952	X			X			0.09	X			

Valparaiso	12,028	X			May 1952	X										
Zionsville	1,533		X		Nov. 1951	X			X			0.09	X			
Totals		7	17	0		16	0	1	6	5	0		9	1	0	Approved: 160,231 In operation: 693,983
IOWA																
Audubon	2,802	X			May 1952	X										
Cedar Rapids	72,149		X		Apr. 1952	X			X			0.10		X		Water rate increase five cents per month
Clarinda	5,077	X			May 1952	X										
Clinton	30,151			X	Mar. 1952	X										
Creston	8,302	X			May 1952	X										
Davenport	73,640	X			Mar. 1952	X										
Bettendorf	5,110	X														
Dubuque	49,528		X		Oct. 1951	X			X			0.10		X		
Eagle Grove	4,167	X			May 1952	X										
Fairfield	7,042	X			May 1952	X										
Fort Madison	14,943			X	May 1952	X										
Harlan	3,888	X			May 1952	X										
Hartley	1,614	X			May 1952	X										
Indianola	5,146	X			May 1952	X										
Iowa City	27,018	X			May 1952	X										
Coralville	433	X														
University Heights	261	X														
Knoxville	7,604	X			May 1952	X										
Manchester	3,969	X			May 1952	X										
Perry	6,161	X			May 1952	X										
Waukon	3,150		X		Oct. 1951				X			0.10		X		
Totals		16	3	2		17	0	0	3	0	0		0	3	0	Approved: 162,234 In operation: 124,827
KANSAS																
Arkansas City	14,021	X			Feb. 1952	X										
Baldwin	1,329	X			Dec. 1951	X										
Coffeyville	18,147	X			Feb. 1952	X										
Colony	397	X			Feb. 1952	X										
El Dorado	11,878	X			Feb. 1952	X										
Fort Scott	10,447		X		Aug. 1952	X				X		†			†	
Garnett	2,659		X		June 1952	X					X	0.10		X"		
Hays	8,551	X			Mar. 1952	X										
Holton	2,602			X	Mar. 1952		X									
Horton	2,895		X		Nov. 1951	X					X	0.11		X		
Iola	6,939	X			Jan. 1952	X										
Junction City	13,682		X		Jan. 1952	X				X		0.055		X		
Lawrence	18,745	X			Dec. 1951	X										
McPherson	8,586	X			†	X										
Minneapolis	1,809	X			Feb. 1952	X										

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
KANSAS—Continued																
Ottawa	10,148		X		Sept. 1946	X			X			0.08		X		
Paola	4,152	X			May 1952	X										
Seneca	1,945		X		Aug. 1952	X					X	†			†	
Topeka	91,058	X			†	X										
Totals		12	6	1		18	1	0	1	2	3		0	4	0	Approved: 185,612 In operation: 41,776
KENTUCKY																
Ashland	31,131	X			†	X										
Central City	4,110		X		Mar. 1952	X				X		0.09	X			
Cynthiana	4,832		X		Mar. 1952	X				X		0.06	X			
Elizabethtown	5,807		X		July 1951	X				X		0.05	X			
Franklin	4,343		X		May 1952	X				X		0.06	X			
Glasgow	7,025		X		Feb. 1952	X				X		0.05	X			
Greensburg	1,476		X		Apr. 1951	X					X	0.10	X			
Hopkinsville	15,500		X		Aug. 1951	X			X			0.06	X			
Louisville and county	450,000		X		Aug. 1951	X				X		0.07	X			
Martin	1,170		X		Apr. 1952	X			X			0.05	X			
Mayfield	9,000	X			Jan. 1952	X										
Maysville	11,572		X		Apr. 1951	X				X		0.06		X		
Paintsville	4,307		X		Apr. 1952	X					X	0.12	X			
Versailles	2,760	X			†	X										
Totals		3	11	0		14	0	0	2	7	2		10	1	0	Approved: 42,891 In operation: 510,142
LOUISIANA																
Baton Rouge	125,629	X			†	X										
Donaldsonville	4,150	X			†	X										
East Jefferson Parish Water District	100,000	X			Apr. 1952		X									
Homer	4,749	X			†	X										
Jennings	9,663	X			†	X										
Morgan City	9,759	X			†	X										

Natchitoches	9,914	X			†	X										
New Orleans	545,000			X	†	X										
Oak Grove	1,796	X			†	X										
Port Sulphur	1,050	X			†			X								Approved by industrial management
St. Martinville	3,500		X		Apr. 1952	X			X			†		X		
Shreveport	127,206	X			Sept. 1952	X										
Thibodaux	7,730	X			†	X										
Welsh	2,416	X			†	X										
Totals		12	1	1		12	1	1	1	0	0		0	1	0	Approved: 404,062 In operation: 3,500
MAINE																
Norway	3,811	X			Mar. 1951		X									Approved at Town Meeting
Totals		1	0	0		0	1	0	0	0	0		0	0	0	Approved: 3,811
MARYLAND																
Aberdeen	3,000	X			May 1951											Proposed plans not yet accepted by State Board of Health
Baltimore & County	1,200,000	X			May 1951	X										
Bel Air	2,600	X			May 1951	X										All Maryland projects reported initial costs borne by local governing agencies and no increase in water rates
Hagerstown	36,260		X		Dec. 1951	X				X		†		X		
Cavetown	1,206		X													
Funkstown	879		X													
Halfway	2,153		X													
Roxbury Penal Farm	864		X													
Security	231		X													
Smithsburg	641		X													
Williamsport	1,890		X													
Maryland Suburban Sanitary District	310,000				Mar. 1952	X				X		†		X		
Alta Vista			X													
Ardwick			X													
Beltsville			X													
Berwyn			X													
Bethesda			X													
Bladensburg			X													
Book Mont			X													
Bradbury Blvd.			X													
Bradbury Hts.			X													
Burnt Mills Village			X													

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
MARYLAND—Continued																
Cabon John			X													
Cabon John Park			X													
Capitol Heights			X													
Central Avenue			X													
Cheverly			X													
Chevy Chase			X													
Chillum			X													
College Park			X													
Edmondson			X													
Forest Glen			X													
Forest Heights			X													
Forestville			X													
Four Corners			X													
Gaithersburg			X													
Garrett Park			X													
Glendale			X													
Glen Echo			X													
Glen Mont			X													
Greenbelt			X													
Hampshire Gardens			X													
Hillendale			X													
Hyattsville			X													
Kenilworth			X													
Kensington			X													
Kenwood			X													
Landover			X													
Lanham			X													
Laurel			X													
Lenox			X													
Montgomery Mills			X													
Mt. Ranier			X													

Riggs Road			X													
Seat Pleasant			X													
Silver Hills			X													
Silver Spring			X													
Suitland			X													
Takoma Park			X													
Viers Mill			X													
Washington Grove			X													
West Gabe			X													
Wheaton			X													
Wood Acres			X													
Totals		3	60	0		4	0	0	0	2	0		0	2	0	Approved: 1,205,600 In operation: 354,124
MASSACHUSETTS																
Athol	11,554		X		Jan. 1952		§			X		0.04	X			
Ayer	5,740			X	Mar. 1952		§									
Belchertown State School	1,536		X		Nov. 1946			X	X			0.16			X	Approved and financed by State Dept. of Pub. Health
Cambridge	120,676	X			May 1951	X										
Danvers	15,720		X		May 1951	X				X		0.04	X			
Middleton	2,916		X													
Essex	1,794	X			Mar. 1952		§									
Gardner	19,617	X			July 1951	X										
Gloucester	25,167	X			Apr. 1952	X										
Hamilton	2,764	X			Mar. 1952		§									
Hingham	14,044	X			Feb. 1952			X								Approved by Boards of Health
Hull		X														
Hudson	8,211	X			Mar. 1952		§									
Manchester	2,868			X	Mar. 1952		§									
Needham	16,313			X	Mar. 1952		§									
North Andover	8,485			X	Mar. 1952		§									
Northampton	28,998		X		Feb. 1952	X			X			†	X			Temporary injunction dismissed June, 1952
Rockport	4,231	X			Mar. 1952		§									
Salem	70,764	X			May 1952			X								Approved by Boards of Health
Beverly		X														
Seekonk	6,104		X		Jan. 1952	X				X		0.03		X		
Sharon	4,847	X			Mar. 1952		§									
Shrewsbury	10,594	X			Mar. 1952		§									
Templeton	4,757		X		June 1951	X				X		0.04	X			
Williamstown	6,194	X			Feb. 1952		§									
Wilmington	11,441	X			Mar. 1952		§									
North Reading		X														

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
MASSACHUSETTS—Continued																
Winchendon	6,477	X			Aug. 1951	X										
Wrentham State School	2,224		X		Jan. 1947			X	X			0.16			X	Approved and financed by State Dept. of Health
Totals		17	8	4		8	13	4	3	4	0		4	1	2	Approved: 306,821 In operation: 73,809
MICHIGAN																
Algonac	2,639		X		Sept. 1949	X				X		†		X		
Ann Arbor	48,251		X		Dec. 1951	X				X		†		X		
Battle Creek	48,666		X		Apr. 1951	X			X			†		X		
Bay City	52,523		X		Jan. 1952	X				X		†		X		
Benton Harbor	18,769		X		Sept. 1951	X			X			†		X		
Buchanan	5,224	X			†	X										
Detroit	1,849,568	X			†	X										
East Lansing	30,325	X			†	X										
Edmore	971	X			†	X										
Flint	163,143	X			†	X										
Fremont	3,056	X			†	X										
Gladstone	4,831	X			†	X										
Grand Haven	9,536		X		†	X										
Grand Rapids	176,515		X		Jan. 1945	X			X			0.138			X	Study project: financed by U.S.P.H.S.
Grosse Pointe Farms	9,410		X		May 1951	X				X		†		X		
Hastings	6,096		X		Jan. 1951	X				X		†		X		
Ishpeming	8,962	X			†	X										
Jackson	51,088		X		Aug. 1951	X				X		0.055		X		
Kalamazoo (partially)	57,704		X		Aug. 1951	X			X			†		X		
Lake Odessa	1,596		X		Aug. 1952	X					X				†	
Ludington	9,506		X		Dec. 1949	X			X			†		X		
Marquette	17,202		X		Sept. 1951	X				X		†		X		
Marysville	2,534		X		Apr. 1952	X				X		†		X		
Midland	14,285		X		Jan. 1946	X				X		†			X	Financed by Dow Chemical

Monroe	21,467		X		Dec. 1951	X				X		†		X		
Mt. Clemens	17,027		X		Mar. 1951	X				X		†		X		
Muskegon	48,429		X		July 1951	X			X			†		X		
Muskegon Heights	18,828		X		Jan. 1952	X			X			†		X		
Negaunee	6,472		X		Nov. 1951	X				X		†		X		
Norway	3,258	X			†	X										
Saginaw	92,918		X		May 1951	X				X		†		X		
St. Joseph	10,223	X			†	X										
South Haven	5,629		X		Feb. 1952	X				X		†		X		
Sparta	2,327	X			†	X										
Stambaugh	1,967	X			†	X										
Sturgis	7,786	X			†	X										
Three Rivers	6,785	X			†	X										
Traverse City	16,974		X		May 1952	X			X					X		
Wyandotte	36,846		X		Jan. 1951	X				X		†		X		
Totals		14	25	0		39	0	0	8	15	1		0	21	2	Approved: 2,098,426 In operation: 790,910
MINNESOTA																
Appleton	2,256	X			1952	X										
Arlington	1,311		X		Jan. 1952	X			X			0.04		X		
Austin	23,035		X		May 1952	X				X		0.025		X		
Battle Lake	623	X			1951	X										
Benson	2,298		X		Jan. 1952	X			X			0.04		X		
Cloquet	7,663	X			1952	X										
Detroit Lakes	5,787	X			1952	X										
Duluth	101,065	X			1951	X										
Elbow Lake	1,400	X			1951	X										
Ely	5,474		X		Jan. 1952	X			X			0.095		X		
Fairmont	8,193		X		Feb. 1951	X				X		0.05		X		
Faribault	16,029	X			1952	X										Implementation of program postponed by City Council
Fergus Falls	12,917		X		May 1951	X				X		0.05		X		
Gaylord	1,229	X			1952	X										
Granite Falls	2,511		X		Jan. 1952	X			X			0.045		X		
Hallock	1,552		X		Jan. 1952	X			X			0.05		X		
Henning	1,004	X			1951	X										
Hutchinson	4,690		X		Feb. 1952	X			X			0.03		X		
International Falls	6,269	X			1951	X										
Mapleton	1,074	X			1952	X										
Minneapolis	521,718			X	Mar. 1952	X										
Montevideo	5,459		X		Sept. 1951	X			X			0.06		X		
Mora	2,018		X		May 1952	X			X			0.06		X		
Morris	3,809	X			1952	X										
New York Mills	977	X			1951	X										
Okabena	474	X			1952	X										

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
MINNESOTA—Continued																
Perham	1,926	X			1951	X										
Red Lake Falls	1,733		X		Feb. 1951	X			X			0.055		X		
Rush City	1,175	X			1952	X										
St. Paul	309,474	X			1951	X										
Staples	2,775		X		Apr. 1952	X			X			0.02		X		
Thief River Falls	6,926		X		Sept. 1951	X				X		0.04		X		
Two Harbors	4,400	X			1952	X										
West Concord	770		X		Sept. 1951	X			X			0.07		X		
Winnebago	2,127		X		June 1951	X			X			0.06		X		
Totals		18	16	1		35	0	0	12	4	0		0	16	0	Approved: 466,634 In operation: 83,789
MISSISSIPPI																
Columbus	17,172		X		Aug. 1951	X				X		0.075		X		
Forest	2,874		X		Feb. 1952	X				X		0.06		X		
Jackson	98,271	X			†	X										
Meridian	41,893	X			†	X										
Totals		2	2	0		4	0	0	0	2	0		0	2	0	Approved: 140,164 In operation: 20,046
MONTANA																
Bozeman	11,325	X			Aug. 1951	X										
Chinook	2,307		X		Mar. 1952	X				X		0.065	X			
Dillon	3,268	X			Jan. 1952	X										Soroptomist Club underwriting finances
Fort Belknap Indian Agency	141	X			May 1952			X								Approved by officials of Indian reservation
Roundup	2,856		X		Feb. 1952	X			X			0.07	X			
Totals		3	2	0		4	0	1	1	1	0		2	0	0	Approved: 14,734 In operation: 5,163
NEBRASKA																
Beatrice	11,813		X		Apr. 1951	X				X		0.078	X			
Fairbury	6,395		X		Mar. 1952	X				X		0.086	X			

Nebraska City	6,872	X			Nov. 1951	X										
Superior	3,227		X		July 1951	X				X		0.076	X			
Totals		1	3	0		4	0	0	0	3	0		3	0	0	Approved: 6,872 In operation: 21,435
NEW HAMPSHIRE																
Claremont	15,000			X	†	X										
Concord	28,000		X		May 1952	X				X		0.07	X			
Totals		0	1	1		2	0	0	0	1	0		1	0	0	In operation: 28,000
NEW JERSEY																
Allenhurst	758	X			Nov. 1951	X										
Atlantic City	61,657	X			July 1952	X										
Monmouth County					†											
Asbury Park	17,094	X				X										
Bradley Beach	3,911	X				X										
Deal	1,064	X				X										
Eatontown	3,044	X				X										
Fair Haven	3,560	X				X										
Interlaken	833	X				X										
Little Silver	2,595	X				X										
Long Branch	23,090	X				X										
Middletown Township	16,203	X				X										
Monmouth Beach	806	X				X										
Neptune City	3,073	X				X										
Neptune Township	13,613	X				X										
New Shrewsbury Borough		X				X										
Ocean Grove	3,806	X				X										
Ocean Township	6,734	X				X										
Oceanport	7,588	X				X										
Rumson	4,044	X				X										
Sea Bright	999	X				X										
Shrewsbury Borough	1,615	X				X										
Shrewsbury Township	5,171	X				X										
West Long Branch	2,739	X				X										
Morristown	28,000		X		June 1950	X			X			0.11		X		
Rahway	21,290	X			Oct. 1951	X										
Totals		24	1	0		25	0	0	1	0	0		0	1	0	Approved: 205,286 In operation: 28,000
NEW YORK																
Amsterdam	33,000	X			Jan. 1952	X										
Bath	5,416	X			Mar. 1952	X										
Buffalo	600,000	X			July 1952	X										
Carle Place	7,500		X		Mar. 1952			X			X	0.11		X		Approved by Water District Board. No increase in tax rates

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
NEW YORK—Continued																
Clinton	2,000			X	Mar. 1952		X									
Elmira	70,000	X			Apr. 1952		X									
Fulton	14,422	X			May 1952	X										
Gloversville	23,500		X		Apr. 1952			X		X		0.15		X		Approved by Board of Water Commissioners. No increase in tax rates
Hamburg	6,938			X	July 1952	X										
Hoosick Falls	4,300	X			Feb. 1952	X										Action postponed one year
Hudson	11,442	X			June 1952			X								
Larchmont	6,330	X			July 1952	X										Approved by Dept. of Public Works
Newburgh	32,000		X		May 1945	X			X			0.11			X	Study project financed by State Health Dept.
New Rochelle	59,725		X		Oct. 1951			X	X			0.11		X		Approved by private water board. Increased water tax
Bronxville	6,778		X													
Eastchester	14,405		X													
North Pelham	5,046		X													
Pelham	1,843		X													
Pelham Manor	5,306		X													
Tuckahoe	5,991		X													
Olean	23,000		X		Nov. 1951	X				X		0.09	X			
Penn Yan	11,174	X			Mar. 1952	X										
Poughkeepsie	50,000	X			Mar. 1952	X										
River Head	4,800	X			June 1952	X										
Rochester	256,000	X			June 1949	X										
Schenectady	112,000		X		June 1952	X				X		0.15	X			
Troy	71,000	X			June 1951	X										
Westfield	3,649		X		Feb. 1952		X		X			0.15		X		No increased water tax
Yonkers	153,000	X			Dec. 1951	X										
Totals		14	13	2		16	3	4	3	3	1		2	4	1	Approved: 1,290,884 In operation: 300,743

NORTH CAROLINA																
Charlotte	134,042		X		Apr. 1949	X				X		†			X	Financed by City Health Department
Morris Field			X													
Pineville			X													
Concord	16,486	X			Dec. 1951	X										
Dunn	6,316	X			Feb. 1952	X										
Fayettesville	34,715	X			Jan. 1952	X										
Greensboro	74,389	X			Nov. 1951	X										
Hickory	14,755	X			May 1952	X										
High Point	39,973	X			Nov. 1951	X										
Lenoir	45,953	X			June 1952	X										
Reidsville	11,708	X			Feb. 1952	X										
Roanoke Rapids	8,156	X			Dec. 1951	X										
Rockingham	3,356	X			Dec. 1951	X										
Rocky Mount	27,697	X			Nov. 1951	X										
Salisbury	20,102	X			June 1952	X										
Southern Pines	4,272	X			Nov. 1951	X										
Wilson	23,010	X			Jan. 1952	X										
Winston-Salem	87,811		X		Oct. 1951	X				X		†		X		
Totals		14	4	0		16	0	0	0	2	0		0	1	1	Approved: 330,888 In operation: 221,853
NORTH DAKOTA																
Dickinson	6,500	X			1951	X										
Fargo	35,000		X		June 1952	X				X		†	X			
Northwood	1,200		X		Sept. 1951	X			X			†	X			
Totals		1	2	0		3	0	0	1	1	0		2	0	0	Approved: 6,500 In operation: 36,200
OHIO																
Akron	280,150	X			Sept. 1951	X										
Avon Lake	2,274		X		†			†	†			†			†	
Canton	119,051		X		†			†	†			†			†	
Chillicothe	20,502	X			May 1952	X										
Cincinnati	510,924	X			Mar. 1952	X										
Cleveland	1,225,000	X			Apr. 1952	X										
Ironton	16,477	X			May 1952	X										
Lisbon	3,379		X		†			†	†			†			†	
Medina	5,322	X			Jan. 1952	X										
Middletown	34,410	X			Jan. 1952	X										
Oberlin	4,305	X			May 1952	X										
Portsmouth	37,178	X			June 1952	X										
Toledo	308,034	X			June 1952	X										
Wellsville	7,997	X			June 1952	X										
Westerville	3,654		X		June 1951	X			X			†	X			

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
OHIO—Continued																
Wooster	14,239	X			Jan. 1951	X										
Youngstown	171,159	X			Jan. 1952	X										
Totals		13	4	0		14	0	0	1	0	0		1	0	0	Approved: 2,635,697 In operation: 128,358
OKLAHOMA																
Bartlesville	19,228		X		May 1952	X				X		†	X			
Guthrie	10,113	X			April 1952	X										
Holdenville	6,192	X			June 1952	X										
Nowata	3,965		X		Aug. 1951	X			X			†	X			
Oklahoma City	243,504	X			Apr. 1952	X										
Totals		3	2	0		5	0	0	1	1	0		2	0	0	Approved: 259,809 In operation: 23,193
OREGON																
Astoria	12,331	X			†		X									
Bend	11,409			X	May 1952	X										City Council rescinded its original approval. May submit question to electorate.
Corvallis	16,207		X		June 1952		X			X		†			†	Approved by popular vote
Eugene	35,879	X			†	X										
Florence	1,026		X		June 1952	X			X			†			†	
Gearhart	568		X		July 1951	X			X			†			†	
Hillsboro	5,142	X			†			†								
Pendleton	12,291	X			July 1952	X										
Totals		4	3	1		5	2	0	2	1	0		0	0	0	Approved: 65,643 In operation: 17,801
PENNSYLVANIA																
Brackenridge	6,400	X			Mar. 1952			X								Approved by water authority
Brookville	4,397		X		Sept. 1951	X			X			†		X		
Easton	33,589		X		May 1952	X			X			†		X		
Ebensburg	3,719		X		Dec. 1951	X			X			†		X		

Ford City	5,795		X		June 1951	X			X			†		X		
Landisville	670	X			Mar. 1952			X								Approved by private water company
Philadelphia	1,931,334	X			†	X										
Ridgeway	6,253	X			Dec. 1951	X										
Wilkensburg	29,853	X			Jan. 1952			X								Approved by water authority
Totals		5	4	0		6	0	3	4	0	0		0	4	0	Approved: 1,974,510 In operation: 47,500
RHODE ISLAND																
Bristol	12,326		X		May 1952	X			X			†			X	
Barrington	8,246		X													
Warren	8,513		X													
Central Falls	23,550	X			June 1952	X										
Cumberland	12,842	X			May 1952	X										
Lincoln	11,270	X			May 1952	X										
Pawtucket	81,436	X			Apr. 1952	X										
Providence	248,674		X		July 1951	X				X		†	X			
Cranston	55,060		X													
Johnston	12,725		X													
No. Providence	13,927		X													
Smithfield	6,690		X													
Warwick	43,028		X													
Totals		4	9	0		6	0	0	1	1	0		1	0	1	Approved: 129,098 In operation: 409,189
SOUTH CAROLINA																
Batesburg	3,169	X			Jan. 1952	X										
Camden	6,986	X			Aug. 1951	X										
Clinton Cotton Mills	3,387	X			Jan. 1952			X								Approved by mill officials
Fort Mill	3,204		X		May 1951	X				X		0.085		X		No increase in water tax
Greenville	58,161	X			July 1952		X									
Greenwood	13,806	X			Feb. 1952	X										
Hartsville	5,658		X		Oct. 1951	X			X			0.09		X		No increase in water tax
Lancaster	7,159	X			May 1951	X										
Ninety Six	1,556		X		Aug. 1950	X			X			0.105		X		No increase in water tax
Orangeburg	15,322	X			Oct. 1951	X										
Rock Hill	24,502		X		May 1952	X				X		0.082		X		No increase in water tax
Spartanburg	36,795	X			July 1952		X									
Totals		8	4	0		9	2	1	2	2	0		0	4	0	Approved: 144,785 In operation: 34,920
SOUTH DAKOTA																
Aberdeen	21,051		X		Apr. 1952	X				X		†	X			
Mobridge	3,753		X		Mar. 1952	X			X			†	X			
Rapid City	25,310	X			Apr. 1951		X									

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
SOUTH DAKOTA—Continued																
Vermillion	5,337	X			Apr. 1951		X									
Watertown	12,699	X			Apr. 1952	X										
Totals		3	2	0		3	2	0	1	1	0		2	0	0	Approved: 43,346 In operation: 24,804
TENNESSEE																
Bristol	16,721	X			Dec. 1951	X										
Brownsville	4,668		X		May 1951	X				X		†		X		No increase in water rates
Chattanooga	130,333	X			June 1952	X										
East Brainerd	12,000	X														
East Ridge	9,900	X														
Hixon	6,724	X														
Lookout Mountain	1,700	X														
Signal Mountain	1,783	X														
Cleveland	12,445		X		Mar. 1952	X				X		†		X		No increase in water rates
Germantown	397		X		Apr. 1952	X					X	†		X		No increase in water rates
Memphis	394,025			X	May 1952			X								Project opposed by utility board
Milan	4,940		X		Mar. 1951	X			X			†		X		No increase in water rates
Nashville	173,359	X			Feb. 1952	X										
Belle Meade	2,827	X														
Woodbine	2,000	X														
Paris	8,818	X			Mar. 1952	X										
Tiptonville	1,954	X			Mar. 1952	X										
Totals		12	4	1		9	0	1	1	2	1		0	4	0	Approved: 368,119 In operation: 22,450
TEXAS																
Austin	131,964	X			1950	X										
Breckenridge	6,605		X		Apr. 1951	X			X			0.1125		X		No increase in water rates
Corpus Christi	108,053		X		Mar. 1949	X			X			0.104		X		
Fort Worth	277,047	X			May 1952	X										
Graham	6,756		X		May 1951	X			X			†			†	

Iowa Park	2,115		X		1951	X			X			0.05		X		
Marshall	22,255		X		May 1946	X			X			0.09		X		No increase in water rates
Paris	21,636	X			Feb. 1952	X										
Sweetwater	13,580		X		Oct. 1951	X			X			†			†	
Temple	24,970		X		1951	X			X			0.10	X			
Tyler	38,864		X		May 1952	X			X			0.144		X		
Wellington	3,669		X		Sept. 1951	X					X	0.018	X			
Wichita Falls	67,709		X		July 1951	X			X			0.095		X		No increase in water rates
Totals		3	10	0		13	0	0	9	0	1		2	6	0	Approved: 430,647 In operation: 294,576
VERMONT																
Burlington	27,686		X		May 1952	X			X			0.11	X			
Montpelier	8,006			X	Apr. 1952		X									
Newport	4,902	X			†	X										
Rutland	17,082	X			†	X										
Springfield	5,882		X		May 1952		X		X			0.16		X		
Windsor	4,500			X	Mar. 1952		X									
Totals		2	2	2		3	3	0	2	0	0		1	1	0	Approved: 21,984 In operation: 33,568
VIRGINIA																
Alexandria	40,000	X			Nov. 1951	X										
Blackstone	3,500	X			Feb. 1952	X										
Charlottesville	20,000		X		Nov. 1951	X				X		†	X			
Danville	35,000			X	Apr. 1952	X										Action tabled by City Council
Fredericksburg	15,000	X			Apr. 1952	X										
Fries	2,000	X			Mar. 1952	X										
Lynchburg	50,000		X		Sept. 1951	X				X		†	X			
Norfolk	65,000	X			Feb. 1952	X										
Petersburg	35,000	X			Mar. 1952	X										
Richmond	200,000	X			Apr. 1952	X										
Totals		7	2	1		10	0	0	0	2	0		2	0	0	Approved: 360,500 In operation: 70,000
WASHINGTON																
Chehalis	5,639	X			†	X										Delayed by court injunction
Clarkston	5,617		X		Feb. 1952	X			X			†		X		Cost included in new rate by private company
Kennewick	10,085		X		Dec. 1950	X			X			†		X		
Kirkwood	4,713	X			Sept. 1951	X										
Longview	20,339	X			†	X										Implementation postponed for further study
Norwood Village	150		X		Feb. 1952		X		X				X			
Port Angeles	11,233			X	†		X									Informative vote of people: not binding on City Council

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
WASHINGTON—Continued																
Seattle	470,000			X	Mar. 1952		X									Previously approved by City Council
Totals		3	3	2		5	3	0	3	0	0		1	2	0	Approved: 30,691 In operation: 15,852
WEST VIRGINIA																
Belle	5,000	X			1951	X										
Charleston	73,501	X			1951	X										
Dunbar	8,032	X			1951	X										
Huntington	86,353	X			1952	X										
Hurricane	1,463	X			1951	X										
Logan	5,079	X			1952	X										
Nitro	3,314	X			1951	X										
Ripley	1,813		X		Apr. 1951	X			X			0.054	X			
St. Albans	9,870	X			1951	X										
So. Charleston	16,686	X			1951	X										
Weirton	24,005		X		Apr. 1951	X				X		0.026	X			
Wellsburg	5,878	X			1952	X										
Wheeling	58,891		X		Oct. 1949	X				X		0.063	X			
Williamstown	3,837		X		July 1952	X			X			†	X			
Totals		10	4	0		14	0	0	2	2	0		4	0	0	Approved: 215,176 In operation: 88,546
WISCONSIN																
Alma	1,068		X		Mar. 1952	X			X			†	†			
Amery	1,625		X		Feb. 1952	X			X			†	†			
Antigo	9,902		X		June 1949	†			X			0.04	†			
Appleton	34,010		X		Oct. 1950	X				X		0.03	†			
Arcadia	1,949	X			†	†										
Argyle	735	X			†	†										
Ashland	10,640		X		Oct. 1949	†				‖		0.12	†			
Athens	823		X		Mar. 1951	X			X			0.06	†			
Balsam Lake	452	X			†	†										

Baraboo	7,264		X	May 1949	X		‖		0.08	†	
Beaver Dam	11,867		X	Mar. 1951	X		‖		0.05	†	
Belleville	735		X	Aug. 1951	X	X			0.06	†	
Beloit	29,590		X	Apr. 1949	X		X		0.07	†	
Berlin	4,693		X	Oct. 1951	X	X			†	†	
Blair	873		X	July 1951	X	X			†	†	
Bloomer	2,556		X	Aug. 1950	X	X			0.12	†	
Boscobel	2,347		X	Mar. 1952	X		X		†	†	
Brandon	708	X		Feb. 1952	X						
Cambridge	552		X	June 1951	X	X			†	†	
Cedar Grove	1,010		X	Feb. 1952	X	X			†	†	
Columbus	3,250		X	Aug. 1950	X		‖		0.08	†	
Crestwood	400		X	Oct. 1950	†	X			†	†	
Cuba City	1,333	X		Oct. 1951	X						
Darlington	2,174	X		June 1952	X						
DeForest	598	X		†	X						
Delavan	4,007	X		June 1951	X						
Dodgeville	2,532	X		Apr. 1952	X						
Eagle River	1,469		X	June 1951	X			X	†	†	
Eau Claire	36,058		X	Jan. 1951	X	X			†	†	
Edgar	705		X	Nov. 1949	X	X			0.06	†	
Edgerton	3,507		X	Oct. 1950	X		X		0.06	†	
Elkhorn	2,935		X	Apr. 1948	X	X			†	†	
Ellsworth	1,475	X		†	†						
Elroy	1,654		X	July 1951	X			X	†	†	
Evansville	2,531		X	Mar. 1950	X		‖		0.10	†	
Fennimore	1,696	X		†	†						
Fond du Lac	29,936		X	July 1950	X		‖		0.06	†	
Fort Atkinson	6,280		X	Dec. 1949	X	X			0.15	†	
Galesville	1,193		X	Sept. 1951	X	X			†	†	
Glidden	1,150	X		†	†						
Hartford	4,549		X	Jan. 1950	X	X			0.10	†	
Hayward	1,577		X	June 1951	X			X	†	†	
Horicon	2,664		X	May 1952	X	X			†	†	
Hudson	3,435	X		†	†						
Hurley	3,034	X		†	†						
Janesville	24,899		X	Feb. 1949		X			0.15	†	
Johnson Creek	511	X		July 1949							
Kenosha	54,368	X		†	†						
Keshena	500	X		†	†						
La Crosse	47,535	X		Jan. 1952	X						
Lake Geneva	4,300		X	May 1951	X		X		†	†	
Lake Mills	2,516	X		†	†						
Lodi	1,416		X	Feb. 1952	X			X	†	†	
Madison	96,056		X	June 1948	†	†			†	†	Uses hydrofluoric acid

Table 3 • Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
WISCONSIN—Continued																
Manitowoc	27,598	X			†	†										
Marinette	14,178		X		Mar. 1951	X				X		†	†			
Marshfield	12,394		X		Oct. 1950	X				X		0.07	†			
Mayville	3,010		X		Sept. 1950	X			X			0.11	†			
Mazomanie	962		X		Sept. 1951	X			X			†	†			
Mellan	1,306	X			Apr. 1951	X										
Menasha	12,385		X		Aug. 1950	X				X		0.09	†			
Menomonee Falls	2,469		X		Sept. 1951	X					X	†	†			
Middleton	2,110		X		June 1950	X			X			0.18	†			
Milton	1,549	X			†	†										
Milwaukee	637,392	X			Jan. 1951	X										
Mineral Point	2,284	X			Apr. 1952	X										
Mount Horeb	1,716		X		Feb. 1952	X					X	†	†			
Mukwonago	1,207		X		May 1949	X			X			†	†			
Neenah	12,437		X		Mar. 1950	X				X		0.04	†			
Neillsville	2,663	X			†	†										
Neopit	1,257		X		Jan. 1951	†			X			†	†			
New Glarus	1,224		X		Feb. 1952	X			X			†	†			
New Richmond	2,886	X			†	†										
Oregon	1,341		X		Feb. 1950	X			X			0.07	†			
Orfordville	543		X		Sept. 1951	X					X	†	†			
Osceola	642	X			†	†										
Oshkosh	41,084		X		Jan. 1950	X				X		0.03	†			
Park Falls	2,924			X	Apr. 1952		X									
Phillips	1,775		X		Nov. 1950	X			X			†	†			
Platteville	5,751		X		Oct. 1951	X				X		†	†			
Plymouth	4,543			X	†		X									
Portage	7,334		X		Mar. 1951	X			X			0.22	†			
Port Edwards	1,336	X			†	†										
Port Washington	4,755		X		Sept. 1950	X				X		0.06	†			
Poynette	870	X			Apr. 1952	X										

Prairie du Sac	1,402		X		Oct. 1951	X					X	†	†			
Racine	71,193		X		Mar. 1950	X				X		0.05	†			
Reedsburg	4,072		X		Feb. 1950	X			X			0.10	†			
Rhinelander	8,774		X		May 1950	X					X	†	†			
Rice Lake	6,898		X		Jan. 1952	X			X			†	†			
Richland Center	4,608		X		Dec. 1949	X				‖		0.12	†			
Ripon	5,619		X		June 1951	X				‖		†	†			
Shawano	5,894			X	†		X									
Sheboygan	42,365		X		Feb. 1946	†			X			0.11	†			
Shell Lake	954		X		May 1952	X			X			†	†			
Soldiers Grove	781		X		Jan. 1950	X			X			0.05	†			
South Milwaukee	12,855		X		June 1952	X			X			†	†			
Sparta	5,893		X		Oct. 1951	X					X	†	†			
Spooner	2,597		X		May 1952	X					X	†	†			
Spring Green	1,064		X		Dec. 1951	X					X	†	†			
Spring Valley	973	X			†	†										
Stevens Point	16,564			X	Sept. 1950		X									Flucridation discontinued
Stoughton	4,833		X		Sept. 1949	X				‖		0.09	†			
Sun Prairie	2,263		X		Mar. 1950	X				‖		†	†			
Tomahawk	3,534		X		June 1951	X					X	†	†			
Trempealeau	527	X			July 1952	X										
Verona	535	X			†	†										
Viroqua	3,795			X	Apr. 1952		X									
Waterford	1,100			X	†		X									
Watertown	12,417		X		Dec. 1950	X				‖		†	†			
Waunakee	1,042		X		Apr. 1951	X				‖		†	†			
Waupun	6,725		X		Nov. 1950	X			X			0.08	†			
Wausau	30,414	X			July 1952	X										
West Bend	6,849		X		Aug. 1950	X				‖		0.08	†			
Westby	1,491		X		Feb. 1951	X			X			†	†			
West Salem	1,376	X			†	†										
Weyauwega	1,207	X			†	†										
Whitehall	1,379		X		June 1951	†			X			†	†			
Whitewater	5,101	X			†	†										
Wisconsin Rapids	13,496		X		Jan. 1951	X			X			0.08	†			
Wonewoc	793	X			†	†										
Totals		37	78	6		84	6	0	37	26	13		0	0	0	Approved: 850,160 In operation: 695,970
WYOMING																
Laramie	15,581		X		May 1952	X				X		†			X	
Sheridan	11,500		X		May 1952	X			X			†			X	
Sinclair	775		X		Jan. 1952	X				X		†			X	Financed by Sinclair Refinery
Totals		0	3	0		3	0	0	1	2	0		0	0	3	In operation: 27,856

Table 3 • *Facts regarding fluoridation programs in the United States, its territories and possessions, August 1952—Continued*

State and community	Population served	Present status			Date of action	Method of action			Compound used			Cost per capita	How financed			Comments
		Approved	In operation	Unfavorable action		Local government	Electorate	Other	NaF	Na_2SiF_6	H_2SiF_6		General funds	Water revenue	Other	
DISTRICT OF COLUMBIA																
Washington (Supplying water to nearby Arlington and Fairfax counties, Virginia)	1,000,000		X		June 1952	X				X		0.095	X			No increase in water rates
Totals		0	1	0		1	0	0	0	1	0		1	0	0	In operation: 1,000,000
ALASKA																
Anchorage	11,060	X			1951	X										
Totals		1	0	0		1	0	0	0	0	0		0	0	0	Approved: 11,060
PANAMA CANAL ZONE	52,822		X		Feb. 1952	X				†		†		†		
Totals		0	1	0		1	0	0	0	0	0		0	0	0	In operation: 52,822
PUERTO RICO	928,337	X			1952	X										
Totals		1	0	0		1	0	0	0	0	0		0	0	0	Six year plan for 76 municipalities Approved: 928,337

*Communities whose names are indented are supplied from community listed above.

†Information not reported.

‡Approved by water company and board of health. Indiana Public Service Commission granted rate increase with fluoridation as one of the requirements.

§Voted at town meeting.

‖Community started project with sodium fluoride; changed to sodium silicofluoride.