

Community Water Fluoridation: A Plan for Pennsylvania

**Oral Health
Program**

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DEPARTMENT OF HEALTH

Acknowledgments

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Health Promotion Advisory Committee

- Dr. Vinodh Bhoopathi, Assistant Professor at Temple University's Kornberg School of Dentistry
- Kelly Braun, Dental Delivery Systems Coordinator at the Pennsylvania Office of Rural Health
- Dr. Kelly Curtin, pediatrician and member of the Pennsylvania chapter of the American Academy of Pediatrics
- Dr. Harry Goodman, former Oral Health Director for the Maryland Department of Health
- Dr. Joan Gluch, chief of the Division of Community Oral Health, Penn Dental Medicine
- Kristin Haegele-Hill, Healthy Teeth Healthy Children Program Director for the Pennsylvania chapter of the American Academy of Pediatrics
- Jan Miller, Public Health Program Administrator, Oral Health Program, Pennsylvania Department of Health
- Dr. Cynthia Olenwine, public health dentist, Pennsylvania Dental Association

Technical Advisory Committee

- Jack Ashton, Deputy Manager, Municipal Authority of Westmoreland County
- Curt Fontaine, Manager of Operations and Engineering, Municipal Authority of Westmoreland County
- Sarah Kocak, Water Quality supervisor, Municipal Authority of Westmoreland County
- Michael Kukura, manager, Municipal Authority of Westmoreland County
- Chuck Hertz, Director of Water Quality, Aqua Pennsylvania Inc.
- Mark Stoner, Water Quality superintendent, Municipal Authority of Westmoreland County
- Joe Sullivan, Director of Education and Training, Pennsylvania Municipal Authorities Association

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I. Frequently Used Abbreviations and Terms

ADA (American Dental Association) – The ADA is the largest and oldest national dental society in the world. On behalf of its 163,000 members and their patients, the association is a voice for quality dental care and an advocate for public health, including fighting oral cancer and advancing community water fluoridation. The ADA's National Fluoridation Advisory Committee reviews new research and helps to guide the association's strategies on educational activities.

Adjusted – This term is used to designate a community water system that is fluoridating its drinking water by adjusting the natural concentration of fluoride to the optimal level (0.7 mg/L) recommended by the US Public Health Service.

Association of State & Territorial Dental Directors (ASTDD) – Founded in 1948, ASTDD is a membership organization comprised primarily of state and local oral health leaders. Through its Best Practices initiative and other projects, ASTDD seeks to assist state dental programs in developing and advancing evidence-based programs and policies.

American Water Works Association (AWWA) – Founded in 1881, AWWA is a nonprofit, scientific, and educational organization that seeks to strengthen the effective management of water. The AWWA is an association whose 51,000 members include water operators, environmental scientists, academicians, and others who are deeply interested in water. Pennsylvania has an AWWA section.

Centers for Disease Control and Prevention (CDC) – This agency, based within the US Health and Human Services, monitors and seeks to prevent disease by working with states and communities to implement prevention strategies and maintain health statistics. The CDC Division of Oral Health coordinates dental disease-related programmatic activities and awards grants to states. The [CDC website](#) serves as a clearinghouse of evidence-based information about fluoride and fluoridation.

Consecutive System – A public water system is considered to be a “consecutive system” if it: a) buys water from another system; b) does not adjust the fluoride concentration; and c) provides this water, which may or may not be fluoridated depending on the source, to its customers.

Consumer Confidence Report (CCR) – The Environmental Protection Agency (EPA) requires community water systems to provide an annual report to their customers summarizing the quality of drinking water that is provided. The CCR is sometimes referred to as the water quality report.

Community Water Fluoridation (CWF) – This is the process of adjusting the natural concentration of fluoride in water to meet the level (0.7 milligrams per liter) recommended by the US Public Health Service for preventing tooth decay among people who drink the water.

Community Water System (CWS) – A CWS is defined as a public water system which serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents.

Engineering and Administrative Recommendations for Water Fluoridation (EARFW) – These recommendations were developed by a CDC advisory panel during the 1970s and were most recently updated in 1995. EARFW includes, for example, that each state should designate a state fluoridation administrator who manages fluoridation and acts as a liaison with other state and federal agencies, as well as the recommendation that each fluoridating water system should be managed by a trained water plant operator.

Environmental Protection Agency (EPA) – This federal agency has regulatory authority over community water systems. Through the Safe Drinking Water Act, EPA sets standards to protect drinking water and works with others to implement technical and financial programs that strengthen water safety.

Fluoride Legislative User Information Database (FLUID) – [FLUID](#) is a database that provides links to relevant fluoridation-related statutes, regulations, or court decisions from the 50 states. This online database was launched in 2011 through a grant from the CDC. FLUID is now operated by the Network for Public Health Law.

Healthy People 2020 (HP 2020) – HP 2020 is the prevention agenda promoted by the federal government to create a society in which all people live long, healthy lives. It is a statement of national health objectives that includes oral health goals. One of these objectives (OH-13) calls on the nation to “increase (by 10%) the proportion of the US population served by community water systems with optimally fluoridated water”. It is anticipated that a national Healthy People 2030 initiative will be announced soon.

Maximum Contaminant Level (MCL) – This is the highest permissible level of a substance in drinking water. The US Environmental Protection Agency has an MCL for fluoride of 4.0 milligrams per liter. Pennsylvania DEP has an MCL for fluoride of 2 mg/L.

Maximum Contaminant Level Goal (MCLG)– This goal is aimed at providing an added margin of safety by encouraging community water systems to meet this goal for a contaminant rather than simply meeting the higher level permitted (MCL). The federal Environmental Protection Agency set the MCLG for fluoride at 4.0 milligrams per liter (mg/L).

Merchant Wholesale System – This is a public water system that produces drinking water but does not sell water directly to the public. Instead, a Merchant Wholesale System sells water to community water systems, which, in turn, is provided to the public. This makes it possible for a water system to officially serve a zero population.

Milligrams per Liter (Mg/L) – This is the standard by which community water systems measure the concentration of fluoride in drinking water. Sometimes, the fluoride is measured in PPM (parts per million). These standards are equivalent, meaning that water with a 0.7 mg/L also has a 0.7 ppm.

My Water’s Fluoride (MWF) – This is a publicly accessible CDC data application that allows consumers to learn about the concentration of fluoride in their drinking water. Data in MWF is drawn from the Water Fluoridation Reporting System (WFRS). States choose whether to participate in the MWF database.

Natural – This term is used to designate a community water system that is “naturally fluoridated,” meaning that their natural fluoride concentrations are at or very close to the optimal level (0.7 mg/L) recommended by the US Public Health Service; therefore, the water system does not adjust the fluoride level in any way.

Natural/Non-fluoridated – This term is used to designate a community water system that has a natural fluoride level that is not optimal and does not adjust that level.

National Sanitation Foundation (NSF) International/American National Standards Institute (ANSI) – NSF International and ANSI are independent organizations that establish quality standards for the fluoride additives that are used in fluoridation. NSF International is a nonprofit organization that was founded in 1944 as the National Sanitation Foundation but changed its name to reflect the diverse consumer and environmental products for which it sets standards and certifies quality. ANSI stands for the American National Standards Institute, which was formed in 1918. With the support of the Environmental Protection Agency, NSF International/ANSI developed Standard 60 to ensure the quality and safety of fluoride and other drinking water additives.

Operational control range – The operational control range is the range of fluoride permitted by regulators for community water systems that adjust their fluoride concentration to provide drinking water that is fluoridated. Even the best-managed system cannot always maintain a perfect 0.7 milligrams per liter concentration. Therefore, a control range is established. In 2018, the US Public Health Service (PHS) published a recommended control range of 0.6 mg/L to 1.0 mg/L, recognizing that the target fluoride level of 0.7 mg/L is the recommended objective. PHS allowed for public comment on its control range recommendation in 2018; when the Plan was finished, the recommendation had not been finalized.

The American Water Works Association, Pennsylvania Section (Pennsylvania AWWA) Pennsylvania Section provides leadership and resources to the full spectrum of the Pennsylvania water community to provide safe, affordable, and enough water. Pennsylvania-AWWA advances technology, education, science, management, and governmental policies.

Pennsylvania’s Department of Environmental Protection (DEP) – This state department has oversight over the safety and operations of nearly 8,400 public water systems within the state, approximately 1,950 of which are community water systems. The DEP Bureau of Safe Drinking Water (BSDW) is tasked with oversight and enforcement of the federal Safe Drinking Water Act and Pennsylvania’s Safe Drinking Water Act. In carrying out its role, BSDW seeks to protect Pennsylvanians from microbial, chemical, radiological, and other contaminants that might exist in drinking water supplies. BSDW also trains and certifies drinking water and wastewater treatment system operators.

Pennsylvania Department of Health (DOH)– Created in 1905, the DOH is responsible for planning and coordinating health resources across the state. The DOH’s mission is to promote healthy behaviors, prevent injury and disease, and to assure the safe delivery of quality health care for all people in Pennsylvania. In recent decades, the DOH has reduced illnesses, injuries, and deaths through a variety of initiatives, including tobacco cessation efforts and educational outreach to parents and families.

Pennsylvania Drinking Water Reporting Systems (PADWRS) – This reporting system allows public access to community water systems’ history, inventory information and recent compliance history. Instructions for using PADWRS are accessible [here](#).

Partnership for Safe Water – The Partnership for Safe Water is a voluntary utility program with a mission of improving the quality of drinking water delivered to customers by optimizing surface and groundwater treatment plants and distribution system operations. The partnership’s comprehensive self-assessment and optimization programs provide utilities with the tools needed to improve performance beyond regulatory levels.

Pennsylvania Municipal Authorities Association (PMAA) – PMAA is a leading voice for more than 2,600 municipal authorities across the commonwealth. PMAA provides a variety of services to local authorities, including advocacy on governmental affairs, education and training, and other programs. PMAA structures its members and services through 10 regions throughout the state.

Pennsylvania Coalition for Oral Health (PCOH) –PCOH seeks to improve oral health for all Pennsylvanians by uniting stakeholders to advance advocacy, policy, education, and innovative approaches. PCOH stakeholders are comprised of representatives from oral health professions, colleges and universities, funding organizations, managed care, professional associations, and state government agencies. PCOH is a supporter of community water fluoridation and other proven prevention strategies.

Pennsylvania Dental Association (PDA) – PDA is a membership organization of about 6,000 dentists and is affiliated nationally with the American Dental Association (ADA). Organized in 1868, PDA is governed by a board of trustees. PDA leaders and members educate the public and patients about fluoride and fluoridation.

Pennsylvania Dental Hygienists’ Association (PDHA)– PDHA is a membership organization that seeks to promote the highest standards of dental hygiene education, licensure, practice, and research while representing and promoting the interests of dental hygienists.

Pennsylvania Rural Water Association (PRWA) – Founded in 1988, PRWA is a member-supported, nonprofit organization that promotes the safe and effective operation, maintenance, and management of water and wastewater systems. To advance this mission, PRWA provides technical assistance and training to its members.

Public Water System (PWS) - A system which provides water to the public for human consumption which has at least 15 service connections or regularly serves an average

of at least 25 individuals daily at least 60 days of the year. The term includes collection, treatment, storage, and distribution facilities under control of the operator of the system and used in connection with the system. The term includes collection or pretreatment storage facilities not under control of the operator, which are used in connection with the system. The term also includes a system which provides water for bottling or bulk hauling for human consumption. Water for human consumption includes water that is used for drinking, bathing and showering, cooking, dishwashing, or maintaining oral hygiene.

Water Works Operators Association of Pennsylvania (WWOAP) – Founded in 1927, WWOAP seeks to improve and advance the public water supply industry across Pennsylvania. The nonprofit organization serves as a key forum for dialogue among all of those involved with and concerned about the standards and quality of the treatment and delivery of water to the public.

Water Fluoridation Reporting System (WFRS) – This online tool, pronounced as “WAY-fers,” helps states manage the quality of their water fluoridation programs. WFRS information also serves as the basis for national surveillance reports describing the percentage of the US population on community water systems that receive optimally fluoridated drinking water. WFRS was developed by CDC in partnership with the Association of State and Territorial Dental Directors.

II. State Overview

Fluoride is a mineral that exists naturally in rivers, lakes, streams, and groundwater. Usually, the natural level of fluoride is below the concentration needed to protect teeth from tooth decay. Although some US communities—such as El Paso, Texas—have enough natural fluoride to help prevent cavities, most communities do not. In Pennsylvania, there is no community with an enough natural level to be protective.¹ The process of community water fluoridation (CWF) is how a water system can reach the recommended, optimal level.

CWF is the single most effective and efficient means of preventing dental decay in children and adults, regardless of race or income level. Water fluoridation has been recognized by the Centers for Disease Control and Prevention (CDC) as one of “10 great public health achievements” of the 20th century.² The year of 2020 marks the 75th anniversary of CWF.

As of March 2019, 64.2% of Pennsylvanians whose homes are connected to water systems received drinking water with the optimal level of fluoride. Among all state residents, including those who receive their water from private wells, 57.4% are reached by CWF. A total of 191 public water systems, out of more than 2,000, adjust the fluoride concentration to reach the optimal level.³

Fluoridated water reaches residents in nearly all the commonwealth’s largest cities, including Philadelphia, Pittsburgh, Allentown, and Erie. Philadelphia was one of the earliest major cities to fluoridate its water supply. In 1951, Philadelphia’s health commissioner appointed a committee to study fluoridation, and after lengthy discussion, the city approved a CWF policy in 1954.⁴

III. Capacity to Meet Healthy People 2020 Objectives

Although a majority of Pennsylvanians have access to fluoridated tap water, the state’s performance makes it more difficult nationally to achieve the federal government’s Healthy People 2020 objective (OH-13). This objective seeks to ensure that community water fluoridation reaches 79.6% of the U.S. population served by community water systems.⁵

The percentage of Pennsylvanians reached by CWF has remained virtually unchanged since 2004. According to the CDC’s 50-state data, Pennsylvania ranks 41st nationally in the proportion of residents with access to fluoridated water.⁶ In recent years, several water systems in the state have ceased fluoridation, but this factor has been offset by the growth of population within urban-metro areas that are fluoridated. Based on this track record and a range of challenges, DOH does not believe it is realistic for Pennsylvania to meet the Healthy People 2020 goal of 79.6%. However, DOH believes that the reach of CWF can be improved through continued outreach and education. DOH is heartened by the news that the water system serving the city of Meadville (Crawford County) began CWF this summer.

DOH firmly believes that the goals, objectives and action steps embedded in this Plan have the potential to improve Pennsylvania’s standing in the years to come. Advancing these goals will require that state health officials form broader and deeper partnerships across the commonwealth. A study published in 2019 analyzed fluoridation trends to offer guidance for identifying areas where CWF expansion is most likely to occur. This study recommends that public health officials focus their educational and outreach efforts on counties or communities that have fluoridated communities as neighbors. As for “fluoridation deserts”—counties where CWF is mostly or entirely absent—the study suggests targeting outreach to areas with the highest levels of health literacy before expanding to other areas.⁷

A variety of factors can create an unfavorable environment for CWF programs. Among these factors are recent studies suggesting an “association” between fluoride and adverse health/cognitive outcomes. Although researchers and other experts have raised concerns about the quality of these studies, such research can raise doubts about the wisdom of CWF.⁸ It will be important for the DOH and its partners across Pennsylvania to monitor new research about fluoride and help the public understand the strengths and limitations of such research. Preserving and expanding CWF could be tougher if the public were confused or misled about research findings.

IV. Laws and Regulations

Pennsylvania does not have a state law guaranteeing its residents access to water that is optimally fluoridated and will, therefore, help prevent tooth decay. Instead, the commonwealth allows municipalities to determine their CWF status. Numerous cities and other communities have enacted policies to ensure that the fluoride concentration in their local water supplies reaches the optimal level.

In addition to the local ordinances that require CWF, water fluoridation is shaped by various laws and regulations at the federal and state levels. Key laws include:

Federal: The Safe Drinking Water Act (SDWA), enacted in 1974, was passed to protect drinking water and its sources—including rivers, lakes, and groundwater. By definition, public water systems must have at least 15 service connections or serve at least 25 people per day for 60 days of the year. The SDWA does not regulate private wells that serve fewer than 25 people. The SDWA created a process through which the federal Environmental Protection Agency (EPA) establishes rules governing the presence of contaminants in drinking water.⁹

State: The Pennsylvania Safe Drinking Water Act was adopted in 1984 to support and facilitate the objectives of the federal SDWA.¹⁰ Within DEP, the Bureau of Safe Drinking Water advances the goal of safe drinking water in various ways. For example, the bureau trains and certifies drinking water operators for public water systems and

annually issues a Public Water System Compliance Report, monitoring public water systems' compliance with applicable quality and safety standards.¹¹

Local: Several city councils, water utility boards, and other governing entities in Pennsylvania have adopted ordinances directing that their water supply be fluoridated.

Operating Range

Many PWSs in Pennsylvania engage in fluoridation. Although a PWS seeks to maintain an average fluoride level that aligns with the recommended CWF level, a local water system typically cannot maintain a constant, precise reading of 0.7 mg/L. Because fluoride concentrations for public water systems can vary slightly over a span of hours or days, there have been efforts to offer guidance for systems that fluoridate their water. An operating range is typically stipulated by the state in the operating permit that it issues to a water system that fluoridates.

The CDC has proposed an operating range within which PWS that practice CWF should maintain their fluoride level. This operating range extends from 0.6 mg/L to 1.0 mg/L. (The primary maximum contaminant level for fluoride is 2 mg/L.) As this Plan was being finalized, the CDC was receiving and reviewing public comments on its proposed operating range, and it was not clear when the CDC expected to finalize this range. As such, the CDC operating range will serve as a recommendation; it will not serve as a federal law or enforceable regulation. Instead, once the range is established by the CDC, it will be the role of the DEP to decide what rules or guidelines, if any, should be established for PWS within the state. If a public water system exceeds the 2 mg/L limit of fluoride, DEP requires such a system to provide a Tier 2 public notice (see Appendix C). Incidentally, Tier 1 public notices are required for certain violations, including violations of rules regarding *E. coli* presence and water turbidity (more information on Tier 1 notices is provided in a 2018 DEP compliance document.)¹² If or when appropriate, the DOH will work with its state and local partners to disseminate information about a new operating range so fluoridating communities are made aware of this change.

Online Fluoride Resource

Public health advocates, local decision-makers and members of the public can obtain more information on fluoridation laws and regulations from the Fluoride Legislative User Information Database (FLUID). This database enables an electronic search of case law, legislation, and journal articles. Searches can be conducted by city or state, or by free text search. Access to FLUID can be obtained at <https://www.fluidlaw.org>. This database is administered by the Network for Public Health Law. The site was initially created through a grant from the CDC.

V. Program Management

The following graphic illustrates the various agencies and organizations that share responsibilities for CWF program activities in Pennsylvania.



VI. Quality Control and Compliance

Oversight Roles

Each state that receives CDC funding to promote CWF has a person who is designated as the administrator who manages the state's fluoridation program and serves as a liaison with other state and federal agencies. For Pennsylvania, this staff person is based within OHP and receives assistance from a partnership with PCOH.

Staff within BSDW and the OHP each have roles to monitor and/or promote CWF, as well as to communicate with each other regarding all aspects of water fluoridation in Pennsylvania. The goals, objectives & action steps (see Section X) includes an action item designed to strengthen this collaboration.

CWF Facility Design

Proposals to install new CWF facilities are required to be developed and evaluated in conjunction with the existing DEP water supply permitting process. A permittee must be able to obtain a system-specific construction permit, and subsequently a system-specific operation permit. These chemical feed facilities need to be designed and constructed in accordance with applicable criteria in the DEP design standards for CWFs. Chemical safety handling measures and personal protective equipment are associated operational requirements.

One of the following fluoride additives, having proper certification, may be utilized for CWF: sodium fluoride, sodium silicofluoride, or fluorosilicic acid.

Monitoring and Reporting

Public water systems that engage in CWF are required to check their fluoride level daily, although many systems could take multiple readings each day via continuous analyzers, meaning the system can record its fluoride range (see Operational Control Range, Section I) and its average fluoride level. The monitoring requirements for the system are in the DEP Safe Drinking Water regulations and additional monitoring requirements are listed in the Special Conditions of the DEP operation permit issued to the system. Additionally, public water systems are required to conduct routine fluoride monitoring at each entry point to the distribution system to ensure fluoride levels remain below the MCL.

Every Pennsylvania water system that engages in CWF must report its fluoride levels annually to DEP. Each water system designates a person to report these data to the agency. Because Pennsylvania is among the states that received oral health infrastructure grants from the CDC, the state is required to share information showing which PWS are fluoridated.

Overfeed Protections

In addition to protocols, training, and policies seeking to ensure that CWF is practiced effectively and safely, Pennsylvania law has specific rules that govern an "overfeed" of fluoride—meaning excessive levels of fluoride are pumped into the public water. In the event of an overfeed, state law requires a PWS to report to DEP within an hour of

discovering an issue that could adversely impact the quality or safety of the drinking water:¹³ Consult with DEP as soon as possible but no later than 24 hours after the water supplier learns of the situation;

- Take appropriate steps, in consultation with DEP, to correct the problem; and
- When the problem is corrected, with DEP's permission, issue a "Problem Corrected" public notice.

If a fluoride overfeed occurs, the standard corrective actions call for a water system to extensively flush the water system and provide alternate sources of drinking water for their customers until the problem is resolved.

DEP enforces this and other rules vigorously. In April 2018, for example, DEP and a city in Venango County reached a settlement agreement that required the city to pay a \$25,000 civil penalty because of a fluoride overfeed in its PWS that occurred earlier that year. The agreement also required the public water operator to pay a civil fine and surrender the water operator's certification received from the state.¹⁴

VII. Education and Training

Education and Training for Water Operators

A variety of organizations have developed, sponsored or promoted educational and training resources for water operators in the state. These resources are summarized below.

1. The DEP manages the Earthwise Academy, which is a web page for water system personnel to explore training opportunities and obtain other information training: <http://www.earthwise.dep.state.pa.us/edu/>. Visitors can get updates by creating a log-in at Earthwise Academy: <https://padepelearn.remote-learner.net/>.

Through the Earthwise Academy site, certified water operators can:

- View their continuing education transcript;
- Search for DEP-approved training courses; and
- Take DEP web-based training courses.

2. The Pa. section of the American Water Works Association (Pa.-AWWA) has a variety of training courses and relevant events posted on its website. These are accessible at: <https://www.paawwa.org/events/>. In addition, this Pa.-AWWA web page offers links to a variety of resources related to regulatory rules and management: <https://www.paawwa.org/regulatorylegislative/helpful-links/>.

Additionally, the Pa.-AWWA created the Partnership for Safe Water, a voluntary utility program seeking to improve the quality of drinking water delivered to customers by optimizing treatment plants and distribution system operations. The partnership's comprehensive self-assessment and optimization programs provide tools to help improve

performance beyond existing regulatory standards. For more information on the Partnership, visit <https://www.paawwa.org/safe-water/>.

AWWA, its national affiliate, has developed various educational tools or statements related to CWF and/or educating the public about the health benefits of drinking tap water. For example:

- AWWA has adopted this policy statement affirming CWF’s “public health benefit”: <https://www.awwa.org/Policy-Advocacy/AWWA-Policy-Statements/Fluoridation-of-Public-Water-Supplies>.
- AWWA’s DrinkTap web portal promotes tap water consumption, answering many questions that customers of public water systems may have: <https://drinktap.org>.

3. The Pennsylvania Rural Water Association (PRWA) has a web page that provides a schedule of training courses for water operators:

<https://www.prwa.com/pages/programs/operator-training-and-certification>. This same page offers hyperlinks through which water system personnel can:

- Access and print their training certificates; and
- Determine how many contact hours are in the current training cycle.

Another PRWA web page identifies the 5 steps to securing water operator certification, enables people to register for certification, and provides dates for upcoming certification exams: <https://www.prwa.com/pages/programs/operator-training-and-certification/wastewater-operator-certification-march-29-exam-registration-closed>.

4. CDC created the Fluoridation Learning Online (FLO) training program. FLO has 4 modules and includes technical information for water systems personnel on fluoride additives and operations. For more information, visit

<https://www.cdc.gov/fluoridation/engineering/training.htm>.

FLO training is free. Although this resource seeks to strengthen the knowledge and skills of water systems to engage in water fluoridation, FLO is also recommended for state oral health program staff, as it builds their awareness of how CWF is implemented. Best of all, the FLO training can be accessed on a laptop, tablet, or smartphone.

Education and Training for Health Professionals and Health Educators

Many Pennsylvanians were born and raised long after their community had adopted a fluoridation program. To raise the public’s understanding of CWF, some organizations have developed, sponsored or promoted training about CWF for health professionals, health educators, and others who want to learn more about public health issues.

1. Pennsylvania Coalition for Oral Health (PCOH) has sponsored multiple in-person training sessions on how to educate their communities about CWF. These PCOH training courses have qualified for continuing education credits for dentists and dental hygienists. To get more information about these courses, send an email to info@paoralhealth.org.

PCOH has offered these courses in collaboration with the American Fluoridation Society (AFS). For more information on AFS, visit <https://americanfluoridationsociety.org/>.

2. Although the FLO course developed by CDC offers a lot of important information for water system personnel, this training course has also been helpful for many health professionals, health educators, state officials, and other members of a community. Of particular interest is Module 1, providing information on the history and science of CWF. For more information about FLO, [click this link](#).

3. The Campaign for Dental Health, a project of the American Academy of Pediatrics (AAP), provides many online educational resources about CWF and oral health. The campaign's website (<https://ilikemyteeth.org/>) offers many downloadable or printable materials for parents and health professionals. The site also has a Spanish-language version: <https://spanish.ilikemyteeth.org/>. The home page provides a window allowing a parent or other visitor to type in any question about fluoride or fluoridation.

VIII. Surveillance Data

In the context of this Plan, the term surveillance refers to maintaining and updating a list of the names and locations of all public water systems in the Commonwealth of Pennsylvania. Appendix A to this Plan provides this list, identifying whether each system is adjusted, natural, or non-fluoridated, as well as whether a system is a “consecutive system” (see the Frequently Used Abbreviations and Terms for the definition of this term).

Additionally, Appendix A indicates the type of fluoride additive used by systems that engage in CWF, as well as the approximate population served by each water system, regardless of whether it is fluoridated.

As a complement to the comprehensive list, Appendix B is a map showing the approximate location of fluoridated water systems within the state.

IX. Promotion

CWF promotion is supported from grant funds received in 2018 from the CDC, which the OHP manages.

OHP promotional efforts are aided by data that DOH collects showing the burden that oral health disease presents in Pennsylvania. Much of the data collected and analyzed by DOH illustrates the need for preserving and expanding CWF across the state. For example, state data reveal that 76% of Pa. adults age 65 and older have lost at least one of their permanent teeth due to tooth decay or gum disease.¹⁵

DOH promotion of CWF is backed by strong evidence of its ability to safely prevent tooth decay in children and adults. DOH work is also supported by the conclusions reached by the CDC, American Dental Association, Pennsylvania Dental Association, and the American Academy of Pediatrics (AAP), including the Pennsylvania Chapter of the AAP.

Through its CDC grant, the OHP has established various goals related to CWF. OHP committed to work with PCOH to implement policy, environment, and system changes to expand CWF through the project. The OHP goals include increasing the proportion of the

Pa. population served by fluoridated water systems by 1% annually. Achieving this goal will require, in turn, that OHP:

- increase the percentage of the public receiving messages about the importance, benefits and safety of CWF; and
- increase the number of individuals who participate in the CWF-related Statewide Water Action Team.

During the first two years of the CDC grant, OHP and PCOH are partnering to conduct an assessment that identifies CWFs with aging fluoridation equipment, as well as documenting the expected equipment lifespan and capital replacement costs. This assessment will also describe the possible funding sources and replacement timeline. Project funds are also budgeted to provide mini-grants to municipal water authorities to install new or replacement fluoridation equipment. The equipment will be maintained by the agencies and related training will be provided on proper use of the equipment from contracted vendors. (Appendix D provides a diagram of the DOH Workplan for its CDC grant.)

Accordingly, the DOH will work with the DEP to monitor, analyze and report annually on the people served by a fluoridated water system and will periodically (according to CDC requirements) report to WFRS.

As part of their collaboration, OHP and PCOH will undertake a concerted effort to educate water treatment personnel on the importance and rationale for recommended fluoridation levels. Activities will include conducting a communication campaign on CWF and the benefits of receiving fluoridated water and highlighting the impact that CWF has on public health overall.

The OHP developed a communications plan to guide all its efforts, and it also shapes its strategies for promoting CWF. The communications plan includes these promotional strategies:

- disseminate OHP reports and data that inform and build awareness about oral health among key stakeholders and the public; and
- engage in outreach to a variety of audiences, including water operators and municipal authorities, educating them about CWF benefits and safety.

X. Goals, Objectives, and Action Steps

In this section, DOH outlines its goals, objectives and action steps for CWF. DOH will reconvene the PCOH Advisory Committees each year to review progress and assess the need for new strategies to achieve these goals.

Goals	Objectives	Action Steps
<p>Goal 1: Increase the knowledge of CWF practices and benefits among both the public and influencers.</p>	<p>Objective 1-1: Enhance public knowledge about CWF, with these communication efforts to be spearheaded by the OHP and the DOH Public Health Dental Director.</p>	<ul style="list-style-type: none"> • Convene at least 2 key stakeholder groups to meet with DOH Public Health dental director, who can talk about oral health and the benefits of CWF.
	<p>Objective 1-2: Compile a comprehensive list of public water systems in Pennsylvania that practice CWF.</p>	<ul style="list-style-type: none"> • Working from an existing list of fluoridating water systems in Pennsylvania, review the list and take appropriate steps to confirm and correct their CWF status. • Use this list to update the WFRS database. • Coordinate with ASTDD to ensure the accuracy of info used to prepare certificates honoring the tenure of CWF in Pa. communities.
	<p>Objective 1-3: Create and promote a story bank, comprised of stories from older adults in Pennsylvania who share memories of when their community became fluoridated and/or how rampant tooth decay used to be.</p>	<ul style="list-style-type: none"> • Identify at least one funding source from which to seek a grant supporting the creation and management of a story bank. • Find a nonprofit or agency that is able and willing to house the story bank on its website or web portal. • Encourage the nonprofit/agency to develop a marketing plan to promote the story bank online and in public presentations.
	<p>Objective 1-4: Create new CWF collateral that stakeholders can display or disseminate at conferences and community events.</p>	<ul style="list-style-type: none"> • Write and design a new downloadable fact sheet that oral health advocates disseminate at local health fairs or other events. • Ensure that such a document is written in plain language, that its

		<p>content is as state-specific as possible, and that it uses language at an appropriate grade level for public comprehension.</p> <ul style="list-style-type: none"> ● Explore the benefits of adapting this main fact sheet to create alternate versions for the CWF, communities of color, and/or other audiences. ● Consider producing a fact sheet that promotes tap water, seeking to build public trust and mentioning, but not focusing on, CWF. ● Discuss the pros and cons of creating a myths-facts handout about CWF and/or tap water. ● Use this collateral to raise awareness of a story bank and how it can be accessed.
	<p>Objective 1-5: Review DOH web content about CWF.</p>	<ul style="list-style-type: none"> ● Evaluate and revise the website CWF content to assure the use of plain language that reflects the public's limited health literacy.
<p>Goal 2: Gain and disseminate insights about the best practices for communicating with residents and decision-makers about CWF.</p>	<p>Objective 2-1: Analyze recent campaigns in different regions of Pennsylvania to gain insights about public knowledge, messaging, outreach strategies, and other dynamics that shape CWF attitudes.</p>	<ul style="list-style-type: none"> ● Identify a stakeholder to conduct interviews and write a case study of local efforts in at least 2 communities to initiate or cease CWF.
	<p>Objective 2-2: Strengthen or establish relationships with key stakeholders to become better aware of recent CWF campaigns and the dynamics that shaped the outcomes.</p>	<ul style="list-style-type: none"> ● Continue discussing with AFS, ASTDD, and other stakeholders to be aware of new issues or questions about CWF that are arising.
	<p>Objective 2-3: Educate medical providers when an area has a rollback to properly prescribe fluoride</p>	<ul style="list-style-type: none"> ● Distribute educational materials on the benefits and proper usage of fluoride supplements to pediatricians and other medical providers in areas

	supplements.	after fluoridation is discontinued.
	Objective 2-4: Use future National Oral Health Conferences (NOHC) as opportunities to gain insights from other dental public health stakeholders about educating local communities about CWF.	<ul style="list-style-type: none"> Review the workshop sessions at NOHC and identify at least 1 staff member at the OHP and/or PCOH to attend CWF-related sessions and report back on key insights.
Goal 3: Monitor and share new research or data about CWF efficacy or safety.	Objective 3-1: Ensure that information about new fluoride studies and their implications for CWF is disseminated to key stakeholders, enhancing knowledge.	<ul style="list-style-type: none"> Establish a process for how the OHP will disseminate updates on new research to broad and diverse audiences. Use multiple ways to educate the public about new research, including talking points and in-person engagement. Continue monitoring the ASTDD list-serv for updates on research. Confer with state and national representatives of the American Academy of Pediatrics, American Dental Association, and other organizations to understand the key findings from newly released CWF studies or data.
	Objective 3-2: Explore what Pennsylvania data health agencies and/or universities could collect or have already collected that could be analyzed and shared to show the impact of CWF.	<ul style="list-style-type: none"> Check with appropriate local health departments or other stakeholders to identify surveillance data, Medicaid data, and/or other data that could be overlaid with GIS maps to offer insights.

<p>Goal 4: Monitor technical or regulatory issues that can pose challenges to the operation of local CWF programs and take proactive steps to address these challenges.</p>	<p>Objective 4-1: Strengthen collaboration between the DEP and other stakeholders such as PCOH and DOH to enhance knowledge of appropriate practices for CWF.</p>	<ul style="list-style-type: none"> • Debrief periodically with the PCOH or other stakeholders about any CWF-related operational challenges that are heard from water operators. • Explore the benefits of having a memorandum of understanding (MOU) between DEP and the DOH to facilitate cooperative efforts.
	<p>Objective 4-2: Nurture a strong relationship with CDC and its recently hired fluoridation engineer to facilitate technical assistance when needed.</p>	<ul style="list-style-type: none"> • Participate in CDC-sponsored briefings at NOHC or other venues to learn about any changes in CWF-related policies, advisories, or protocols.
	<p>Objective 4-3: Make it easier for water systems in Pa. that fluoridate to manage these operations safely and appropriately.</p>	<ul style="list-style-type: none"> • Collaborate with DEP, the Pa. Municipal Authorities Association, Pa. Rural Water Association and/or other organizations to compile a list of fluoride suppliers from which PWSs can purchase 1 or more forms of fluoride for the CWF process—and periodically update this list. Changes in form of fluoride used may require a DEP permit. • Support efforts to create a generic template of basic water operations (standard operating procedures--SOPs) that smaller systems can use as a solid foundation, inserting information that pertains specifically to their system. • Compile and maintain a list of funding sources to assist water systems in initiating and maintaining fluoridation programs.

	<p>Objective 4-4: Create an equipment inventory that includes the age and projected lifespan of the fluoride-related equipment used by PWSs that engage in CWF.</p>	<ul style="list-style-type: none"> Analyze the information gathered for the inventory and leverage it to enhance funding for CWF-related equipment.
	<p>Objective 4-5: Strengthen training opportunities (and awareness of them) for water operators in Pennsylvania.</p>	<ul style="list-style-type: none"> Secure DEP approval of continuing education units (CEUs) for the CDC FLO online training that was created for water operators. Strengthen the availability of training in both how to manage and verify the CWF monitoring process and the types of monitors that water systems can use. Support efforts by water operators and their associations to identify an online platform where water operators could exchange information on technical challenges, such as selecting of monitors and monitoring protocols. Compile and maintain a list of training and technical assistance resources related to CWF. Raise awareness of the significant turnover of water operators that is anticipated in the coming years, as well as discuss strategies for succession planning that ensures a continuity of operator knowledge.
	<p>Objective 4-6: Strengthen oversight to ensure that all fluoridating water systems are prepared to prevent or rectify potential concerns related to fluoride and fluoridation.</p>	<ul style="list-style-type: none"> Encourage DEP to ask its staff, during onsite visits to water plants, to regularly request to see a copy of the water system's SOP that covers overfeeds, proper storage, and other aspects of fluoride oversight and operations. Work with the Partnership for Safe Water to include CWF in their self-assessment and optimization program.

	<p>Objective 4-7: Instill greater knowledge of fluoride within the modules of training required for water operators to be certified.</p>	<ul style="list-style-type: none"> • Through discussions with DEP, explore the benefits of adding a fluoride-specific training module that is connected to the testing required for fluoride certification of water operators.
	<p>Objective 4-8: Support efforts to make PWSs aware of the new operating range for fluoride once this range is finalized.</p>	<ul style="list-style-type: none"> • Confer with DEP to become aware of its plans for informing water systems of the potential new operating range. • Work with PCOH and other partners that communicate regularly with water operators to ensure that all water systems are made aware of the CDC change.

APPENDIX A

Pennsylvania community water systems that provide fluoridated water

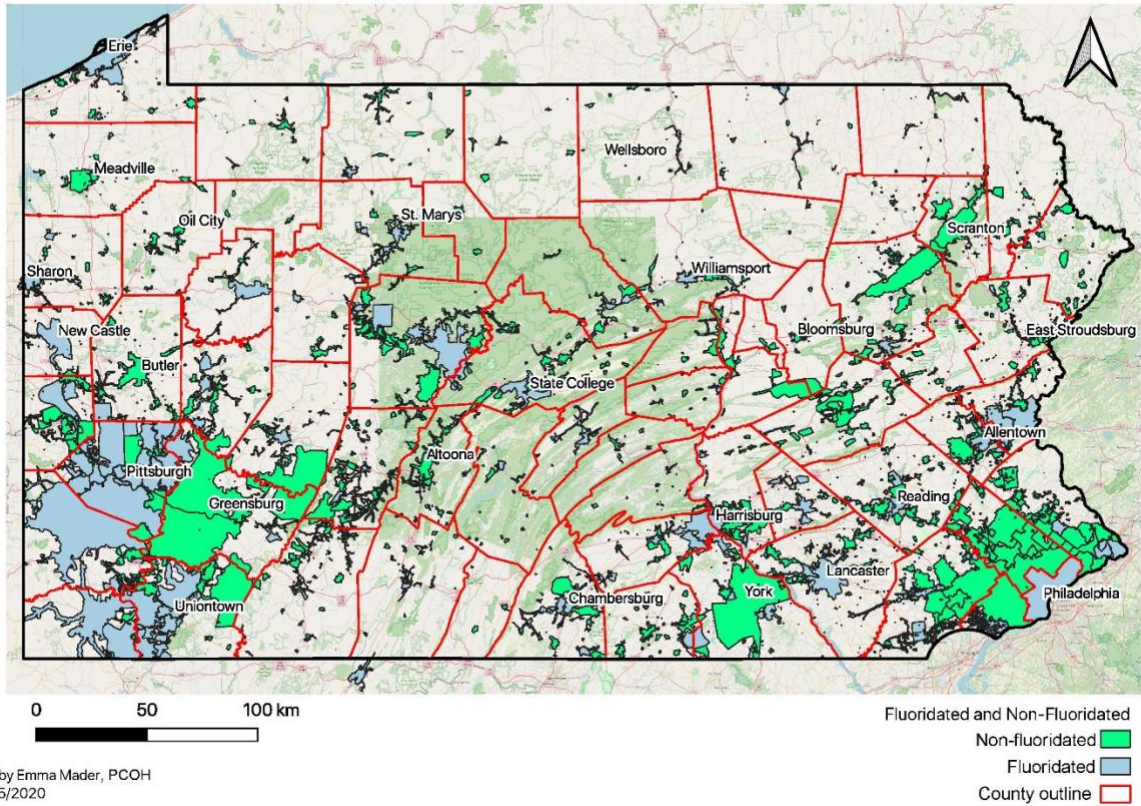
COUNTY	PWSID	SYSTEM NAME
Allegheny	5020003	ASPINWALL BORO WATER DEPARTMENT
Allegheny	5020004	BLAWNOK BORO WATER DEPARTMENT
Allegheny	5020006	BRACKENRIDGE BORO WATER DEPARTMENT
Allegheny	5020007	BRADDOCK BORO WATER AUTHORITY
Allegheny	5020011	MOON TOWNSHIP MUNICIPAL AUTHORITY
Allegheny	5020013	EAST DEER TOWNSHIP WATER DEPARTMENT
Allegheny	5020015	EDGEWORTH BORO MUNICIPAL AUTHORITY
Allegheny	5020018	RICHLAND TOWNSHIP WATER AUTHORITY
Allegheny	5020027	MONROEVILLE MUNICIPAL AUTHORITY
Allegheny	5020029	NEVILLE TOWNSHIP WATER DEPARTMENT
Allegheny	5020034	WESTERN ALLEGHENY COUNTY MUNICIPAL AUTHORITY
Allegheny	5020036	OAKMONT WATER AUTHORITY
Allegheny	5020038	PITTSBURGH WATER & SEWER AUTHORITY
Allegheny	5020039	PA. AMERICAN WATER CO-PITTSBURGH
Allegheny	5020040	FOX CHAPEL AUTHORITY
Allegheny	5020041	PLUM BORO MUNICIPAL AUTHORITY
Allegheny	5020043	WEST VIEW WATER AUTHORITY
Allegheny	5020045	ROBINSON TOWNSHIP MUNICIPAL AUTHORITY
Allegheny	5020047	RESERVE TOWNSHIP WATER DEPARTMENT
Allegheny	5020050	SEWICKLEY BORO WATER AUTHORITY
Allegheny	5020055	TARENTUM BORO WATER DEPARTMENT
Allegheny	5020056	WILKINSBURG-PENN JT WATER AUTHORITY
Allegheny	5020067	OAKDALE BORO WATER DEPARTMENT
Allegheny	5020070	ALEPPO TOWNSHIP AUTHORITY
Allegheny	5020076	FAWN FRAZER JOINT WATER AUTHORITY
Allegheny	5020078	FINDLAY TOWNSHIP MUNICIPAL AUTHORITY
Allegheny	5020082	CARSON TOWERS
Allegheny	5020108	HARRISON TOWNSHIP WATER AUTHORITY
Armstrong	5030005	FORD CITY MUNICIPAL WATER WORKS
Armstrong	5030008	PA.-AMERICAN WATER CO-KITTANNIG
Armstrong	5030010	GILPIN TOWNSHIP MUNICIPAL AUTHORITY
Armstrong	5030025	PARKS TOWNSHIP MUNICIPAL AUTHORITY
Armstrong	5030043	KITTANNING SUBURB JT WATER AUTHORITY
Armstrong	5030045	WEST KITTANNING MUNICIPAL AUTHORITY
Beaver	5040010	NORTH SEWICKLEY MUNICIPAL WATER AUTHORITY
Beaver	5040012	BEAVER FALLS MUNICIPAL AUTHORITY
Beaver	5040022	BOROUGH OF CONWAY
Beaver	5040085	NEW SEWICKLEY TOWNSHIP MUNICIPAL AUTHORITY
Bedford	4050002	MUNICIPAL AUTHORITY OF BORO OF BEDFORD
Bedford	4050028	EVITTS CREEK WATER CO
Bedford	4050037	BEDFORD TOWNSHIP MUNICIPAL AUTHORITY
Berks	3060012	MAIDENCREEK TOWNSHIP WATER AUTHORITY
Berks	3060029	FLEETWOOD BORO WATER SYSTEM
Berks	3060045	BERN TOWNSHIP MUNICIPAL AUTHORITY
Berks	3060059	READING AREA WATER AUTHORITY
Berks	3060066	WESTERN BERKS WATER AUTHORITY
Berks	3060067	SHILLINGTON MUNICIPAL AUTHORITY
Berks	3060078	WEST READING BORO WATER
Berks	3060082	MT PENN BORO MUNICIPAL AUTHORITY
Berks	3060083	WYOMISSING BORO WATER SYSTEM
Berks	3060098	ONTELAUNEE TOWNSHIP MUNICIPAL AUTHORITY

COUNTY	PWSID	SYSTEM NAME
Blair	4070021	TYRONE BORO WATER AUTHORITY
Bradford	2080028	AQUA PA. SUSQUEHANNA DIVISION
Bucks	1090022	FALLS TOWNSHIP WATER & SEWER DEPARTMENT
Bucks	1090026	LOWER BUCKS COUNTY JOINT MUNICIPAL AUTHORITY
Bucks	1090127	WARWICK TOWNSHIP WATER & SEWER AUTHORITY
Butler	5100093	ZELIENOPLE BORO
Butler	5100094	CRANBERRY TOWNSHIP WTP
Butler	5100135	SEVEN FIELDS BORO WATER DEPARTMENT
Butler	5100141	MUNICIPAL WATER AUTHORITY ADAMS TOWNSHIP
Cambria	4110009	EBENSBURG BORO MUNICIPAL AUTHORITY
Cambria	4110024	PATTON BORO WATER DEPARTMENT
Cambria	4110043	EAST TAYLOR MUNICIPAL AUTHORITY
Carbon	3130002	BEAVER MEADOWS BOROUGH
Centre	4140087	PAW PHILIPSBURG
Centre	4140096	STATE COLLEGE BORO WATER AUTHORITY.
Chester	1150019	LONDONDERRY COURT MHP
Chester	1150026	DOWNINGTOWN WATER AUTHORITY
Chester	1150077	PHOENIXVILLE WATER DEPARTMENT
Chester	1150106	PA. AMERICAN COATESVILLE
Chester	1150165	LONDON GROVE TOWNSHIP MUNICIPAL AUTHORITY
Chester	1150197	VALLEY CROSSING
Chester	1150206	PA. AMERICAN PHOENIXVILLE
Chester	1150225	VILLAGES OF HILLVIEW
Clarion	6160001	PA. AMERICAN WATER CO CLARION
Clarion	6160043	FARMINGTON TOWNSHIP
Clearfield	6170008	CLEARFIELD MUNICIPAL AUTHORITY
Clearfield	6170016	CITY OF DUBOIS WATER DEPARTMENT
Clearfield	6170034	UNION TOWNSHIP MUNICIPAL AUTHORITY
Clearfield	6170053	SANDY TOWNSHIP
Clinton	4180048	CITY OF LOCK HAVEN WATER DEPARTMENT
Clinton	4180049	SUBURBAN LOCK HAVEN WATER AUTHORITY
Clinton	4180070	CENT CLINTON CO WATER FIL AUTHORITY
Crawford	6200003	CAMBRIDGE AREA JOINT AUTHORITY
Crawford	6200004	CAMBRIDGE SPRINGS BOROUGH
Crawford	6200036	MEADVILLE AREA WATER AUTHORITY
Cumberland	7210002	CARLISLE WATER TREATMENT PLANT
Cumberland	7210010	US ARMY GARRISON
Cumberland	7210028	SUEZ MECHANICSBURG
Cumberland	7210029	PA. AMERICAN WATER CO WEST
Cumberland	7210043	SHIPPENSBURG BORO WATER AUTHORITY
Dauphin	7220034	MILLERSBURG WATER AUTHORITY
Dauphin	7220038	SUEZ MIDDLETOWN
Dauphin	7220045	ROYALTON BORO
Dauphin	7220049	CAPITAL REGION WATER
Dauphin	7220055	LONDONDERRY TOWNSHIP WATER SYSTEM
Delaware	1230004	CHESTER WATER AUTHORITY
Delaware	1230012	SUEZ WATER PA. BETHEL
Elk	6240012	RIDGWAY BOROUGH WATER SYSTEM
Elk	6240016	ST MARYS AREA WATER AUTHORITY
Elk	6240022	RIDGWAY TOWNSHIP WATER AUTHORITY
Erie	6250022	EDINBORO WATER AUTHORITY

COUNTY	PWSID	SYSTEM NAME
Erie	6250028	ERIE CITY WATER AUTHORITY
Erie	6250061	NORTH EAST BOROUGH WATER DEPARTMENT
Erie	6250086	NORTH EAST TOWNSHIP WATER
Erie	6250087	FAIRVIEW TOWNSHIP WATER AUTHORITY
Erie	6250090	SUMMIT TOWNSHIP WATER AUTHORITY
Erie	6250096	MCKEAN TOWNSHIP WATERWORKS
Erie	6250098	SAINT MARYS HOME OF ERIE
Fayette	5260007	FAIRCHANCE BORO WATER DEPARTMENT
Fayette	5260013	MASONTOWN MUNICIPAL WATER WORKS
Fayette	5260019	NORTH FAYETTE COUNTY MUNICIPAL AUTHORITY
Fayette	5260020	PA.-AMERICAN WATER-UNIONTOWN
Fayette	5260027	ALBERT GALLATIN MUNICIPAL AUTHORITY
Fayette	5260032	MOUNTAIN WATER ASSOCIATION
Franklin	7280005	CHAMBERSBURG BORO WATER SYSTEM
Franklin	7280032	BORO OF WAYNESBORO
Franklin	7280043	BEAR VALLEY JOINT AUTHORITY
Franklin	7280044	ZULLINGER WATER SYSTEM WTMA
Greene	5300012	EAST DUNKARD WATER AUTHORITY
Greene	5300017	SOUTHWESTERN PA. WATER AUTHORITY
Huntingdon	4310012	HUNTINGDON BORO WATER DEPARTMENT
Indiana	5320006	BLAIRSVILLE MUNICIPAL AUTHORITY
Indiana	5320025	PA. AMERICAN WATER CO-INDIANA D
Jefferson	6330002	BROCKWAY BORO MUNICIPAL AUTHORITY
Jefferson	6330004	BROOKVILLE MUNICIPAL AUTHORITY
Jefferson	6330007	FALLS CREEK BORO MUNICIPAL AUTHORITY
Lancaster	7360058	CITY OF LANCASTER
Lancaster	7360071	LANDIS HOMES
Lancaster	7360116	WARWICK TOWNSHIP LITITZ SYSTEM
Lancaster	7360126	LITITZ BORO
Lawrence	6370034	PA. AMERICAN WATER CO NEW CASTLE
Lawrence	6370035	NEW WILMINGTON BORO WATER DEPARTMENT
Lebanon	7380007	BOROUGH OF CORNWALL
Lebanon	7380010	LEBANON WATER AUTHORITY
Lebanon	7380035	FREDERICKSBURG WATER AUTHORITY
Lebanon	7380044	FORT INDIANTOWN GAP
Lehigh	3390024	LCA ALLENTOWN DIVISION
Lehigh	3390044	CATASAUQUA MUNICIPAL WATER WORKS
Lehigh	3390062	SALISBURY TOWNSHIP WATER SYSTEM
Lehigh	3390087	SWT ALLENTOWN CONS SYSTEM
Lehigh	3390097	HANOVER TOWNSHIP LEHIGH COUNTY
Luzerne	2408001	HCA ROAN FILTER PLANT
Lycoming	4410173	WILLIAMSPORT MUNICIPAL WATER AUTHORITY
Mc Kean	6420019	PA. AMERICAN WATER CO KANE
Mercer	6430037	GREENVILLE MUNICIPAL WATER AUTHORITY
Mercer	6430054	AQUA PA. SHENANGO VALLEY WTP
Mercer	6430055	SHARPSVILLE BORO WATER CO
Mercer	6430077	SOUTH PYMATUNING
Mifflin	4440010	LEWISTOWN BORO MUNICIPAL AUTHORITY
Monroe	2450053	TOBYHANNA ARMY DEPOT
Northampton	3480024	UTILITIES INC WESTGATE
Northampton	3480027	LOWER SAUCON AUTHORITY

COUNTY	PWSID	SYSTEM NAME
Northampton	3480046	CITY OF BETHLEHEM
Northampton	3480050	EASTON AREA WATER SYSTEM
Northampton	3480057	NORTHAMPTON BORO MUNICIPAL AUTHORITY
Northumberland	4490007	MUNICIPAL AUTHORITY SUNBURY
Philadelphia	1510001	PHILADELPHIA WATER DEPARTMENT
Snyder	4550005	SELINSGROVE MUNICIPAL WATERWORKS
Snyder	4550022	SHAMOKIN DAM BOROUGH
Snyder	4550028	PENN TOWNSHIP MUNICIPAL AUTHORITY
Somerset	4560018	JEFFERSON TOWNSHIP WATER AND SEWER
Somerset	4560042	SOMERSET BORO MUNICIPAL WATER AUTHORITY
Somerset	4560046	SOMERSET TOWNSHIP MUNICIPAL AUTHORITY OAKRIDGE
Susquehanna	2580023	PA. AMERICAN WATER CO MONTROSE
Tioga	2590038	MANSFIELD BOROUGH MUNICIPAL AUTHORITY
Venango	6610042	SANDYCREEK TOWNSHIP WATERWORKS
Venango	6610044	SUGARCREEK BOROUGH
Washington	5630050	MARIANNA MUNICIPAL WATER WORKS
Westmoreland	5650031	MAWC FURNACE RUN
Westmoreland	5650070	NEW KENSINGTON MUNICIPAL AUTHORITY
York	7670050	GLEN ROCK WATER AUTHORITY
York	7670065	WINDSOR BORO WATER AUTHORITY
York	7670076	HANOVER MUNICIPAL WATER WORKS
York	7670082	NEW FREEDOM BORO WATER AUTHORITY
York	7670085	DALLASTOWN YOE WATER AUTHORITY
York	7670086	RED LION MUNICIPAL AUTHORITY
York	7670101	WEST MANCHESTER TOWNSHIP AUTHORITY

APPENDIX B: Community Water Systems in Pennsylvania



Appendix C

Proposals to Add or Remove Fluoridation Treatment by a Community Water System

The document below was created and published in March 2004. To view the most recent version of the document, please visit the DEP website [here](#).

The Pennsylvania Department of Environmental Protection (DEP) supports local decision making on the issue of fluoridation. It is not DEP's intent or position to encourage or discourage fluoridation.

Why is DEP involved in the addition or removal of fluoridation treatment?

DEP regulates the design, construction and operation of treatment processes at public water systems within the Commonwealth. According to DEP's regulations, water systems may not use chemicals or materials which may encounter the water or affect the quality of the water unless the chemicals or materials are acceptable to DEP (Title 25 Pa. Code §109.606(a)). Fluoridation chemicals certified under ANSI/NSF Standard 60 are acceptable to DEP (Title 25 Pa. Code §109.606(b)). Whenever a community water system (CWS) proposes to add or remove a treatment process, the water supplier must obtain a construction permit before making any modifications, and an operation permit before operating any new or modified facility (Title 25 Pa. Code §109.501).

Pennsylvania's public water systems generally do not use sources that naturally contain fluoride at levels that would provide protection against tooth decay. Therefore, any CWS that wants to provide fluoridation must install equipment to add a chemical source of fluoride to their water. The fluoride maximum contaminant level (MCL) for drinking water was established by the United States Environmental Protection Agency to prevent the possibility that children's teeth, usually in children less than 9 years old, could be damaged. The condition, called mottling and known as dental fluorosis, may cause brown staining and/or pitting of the teeth, and occurs only in developing teeth before eruption from the gums. DEP regulates fluoridation to ensure that the treatment process maintains the optimal level of fluoride needed to provide adequate protection from tooth decay while not exceeding the MCL of 2 mg/L.

To maintain the optimal fluoridation level in the drinking water, DEP conditions operation permits to require that suppliers closely monitor the level of fluoride being added. Suppliers providing such treatment must perform on-site fluoride monitoring at least once a day and maintain the test results on file. DEP staff also review those results during routine surveillance visits. Should an operational problem occur, the water supplier is also required to report the circumstances to DEP within one hour of learning of the problem (Title 25 Pa. Code §109.701(a)(3)). If the fluoride level in the finished water exceeds the MCL value, the supplier must provide public notice to all consumers and take corrective actions to quickly return to compliance. If the fluoride level falls below the level recommended to prevent tooth decay, the supplier must quickly take corrective actions to again meet their permit condition(s).

As defined in Title 25 Pa. Code §109.503(b)(1), the addition or removal of a treatment technique at an existing permitted community water system is a substantial modification. The public water system must therefore obtain a major permit amendment prior to the installation, operation or removal of fluoridation facilities. The information below explains DEP's procedures regarding adding or removing fluoridation at a community water system.

What is involved in starting fluoridation?

A community water system that proposes to fluoridate must first obtain a construction permit for the proposed fluoridation facilities. In the permit application, DEP expects an applicant to provide evidence that the affected public has been adequately notified of the community water supplier's proposal to provide fluoridation and will be adequately notified prior to commencement of operation.

Initial notification may include, but is not limited to, items such as informational leaflets or pamphlets distributed within the service area, newspaper articles or direct mailings to each customer. Fluoridation proposals often receive serious consideration and generate considerable controversy and publicity. In these cases, public meetings are usually held. Referendum votes are sometimes taken. All of these activities serve to provide notice to the customers, physicians, dentists and other medical professionals that the water supplier is proposing to fluoridate. Such notices, public hearings or referendums are considered adequate public notification prior to issuance of a construction permit.

After installation of equipment but before its operation, the water supplier must also obtain an operation permit. DEP staff must first inspect the modified facility, and water system officials must certify that the installation was made in accordance with the approved plans and specifications. The water supplier must also provide documentation to show how consumers and medical professionals have been given advance notice of the date that fluoridation will begin. This notification could be, but is not limited to, a direct notice to each consumer and medical professional, press releases, newspaper articles or paid advertisements, radio and TV announcements or paid commercials. Advance notice allows medical professionals to determine if their patients should discontinue taking fluoride supplements and to consult with those individuals before the start of fluoridation.

After a system starts fluoridation, the water supplier should conduct ongoing public notification. Written notice should be given to transferred billing units and new service connections upon commencement of service. Since fluoridation will result in fluoride being detected during routine compliance self-monitoring, that information must also be included in the CWS annual Consumer Confidence Report (CCR) (Title 25 Pa. Code §109.416). Each affected CWS should take the opportunity to include information in their CCR that the fluoride level results from fluoridation of the water being served.

What is involved in stopping fluoridation?

A community water system that proposes to discontinue fluoridation must first obtain an amended water supply permit from DEP as per 109.503(b)(1). Until the amended

operation permit is issued and its conditions satisfied, the supplier must continue fluoridation in accordance with their present permit.

A community water supplier, to facilitate an orderly transition from a fluoridated to a non-fluoridated system, needs to provide advance notice to consumers and medical professionals before fluoridation is stopped. Therefore, the supplier should provide evidence in their permit application that consumers and the medical professionals in the affected service area have been adequately notified of the community water supplier's decision to cease operation of fluoridation treatment. This notification could be, but is not limited to, a direct notice to each consumer and medical professional in the affected area, press releases, newspaper articles or paid advertisements, radio and TV announcements or paid commercials.

Any operation permit approving the cessation of fluoridation should include a special condition to require public notification before addition is stopped. A DEP-approved public notice should be issued, following the distribution requirements for Tier 2 public notice found in Title 25 Pa. Code §109.409(c)(1), to all consumers and medical professionals in the affected service area 30 days prior to discontinuation of fluoridation. The water supplier should also be required to submit proof of that notification to DEP within 10 days of issuance.

A supplier that removes fluoridation should also take the opportunity in the next annual CCR to remind customers of the date that fluoridation was discontinued.

(Note: This document was produced in 2004.)

Appendix D

(Note: Below is an excerpt showing the workplan that guides DOH activities related to CWF in its CDC grant.)

Component 2 - Community Water Fluoridation

Strategy: Increase the proportion of people served by CWF. DOH will monitor and report water fluoridation activities, including documentation of public water systems that adjust fluoride and proportion of people served. DOH will provide education on the benefits, safety, and effectiveness of maintaining recommended fluoride levels for CWF and maintain an awareness of policy changes and actions that support and promote quality control and management of fluoridated water systems.

Expected 5-Year Outcome Measure (1): Increase the number of people served by CWS that receive optimally fluoridated water by 5%.					
Baseline Measure: 52% (2015)		Data Source: WFRS; ASTDD State Synopsis Report:			
Year 1 Target	Year 2 Target	Year 3 Target	Year 4 Target	Year 5 Target	
5 PWS participate	1% increase	1% increase	2% increase	1% increase	
Other Outcome Measures, Targets and Milestones					
Measure	Baseline	Year 1 Target		Data Source	
Measure 1	52%	5 PWSs participate (53% pop by year 2 served)		WFRS report	
Year 1 Milestones					
Activities					
List of Activities	Description of Activity	Start Date	Completion Date for Each Activity	Method to determine completion	Person/Organization responsible
Activity 2.1	Education campaign and needs assessment conducted	10/1/18	8/31/19	Fact sheets, opinion papers, Burden Document, priority report established	DOH Public Health dental director /PCOH executive director
Activity 2.2	Monitor and report monthly water fluoridation data	9/1/18	Ongoing	WFRS report	DEP, DOH Public Health dental director
Activity 2.3	Provide training, equipment, and education to water operators	2/1/19	Ongoing	Updated operation plan and increase in status annually	PCOH executive director
Activity 2.4	Report on and identify water systems receiving new or replacement fluoridation equipment and the communities and populations affected	9/1/18	Ongoing	5% increase in population served by optimally fluoridated water	PCOH executive director, evaluator, DOH Public Health dental director

Citations

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