



Chesterfield County, Virginia
Department of Risk Management
Environmental, Health & Safety Division
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CCPS Water Management Program to Reduce Legionella Growth & Spread

I. INTRODUCTION

Legionnaires' disease is a serious type of pneumonia caused by bacteria, called *Legionella*, that live in water. *Legionella* can make people sick when they inhale water droplets contaminated with the bacteria. Stagnant water in temperatures between 77- and 108-degrees Fahrenheit provides favorable conditions for *Legionella* to proliferate. Due to long periods of limited water use in schools during summer and winter breaks and holidays, school buildings' water systems are especially at risk for proliferation of *Legionella*. School building water systems at risk include domestic cold and hot water lines, cooling towers, sprinkler systems, irrigation systems, and ice machines.

To protect Virginia school buildings' water systems from dangerous proliferation of *Legionella*, Virginia Senate Bill 410 was introduced which requires school districts to develop a water management program for the prevention of Legionnaires' disease. This Senate Bill was passed and was codified into Virginia Administration Code (VAC) Title 22.1-138 C which becomes effective on July 1, 2021. VAC Title 22.1-138 C. states:

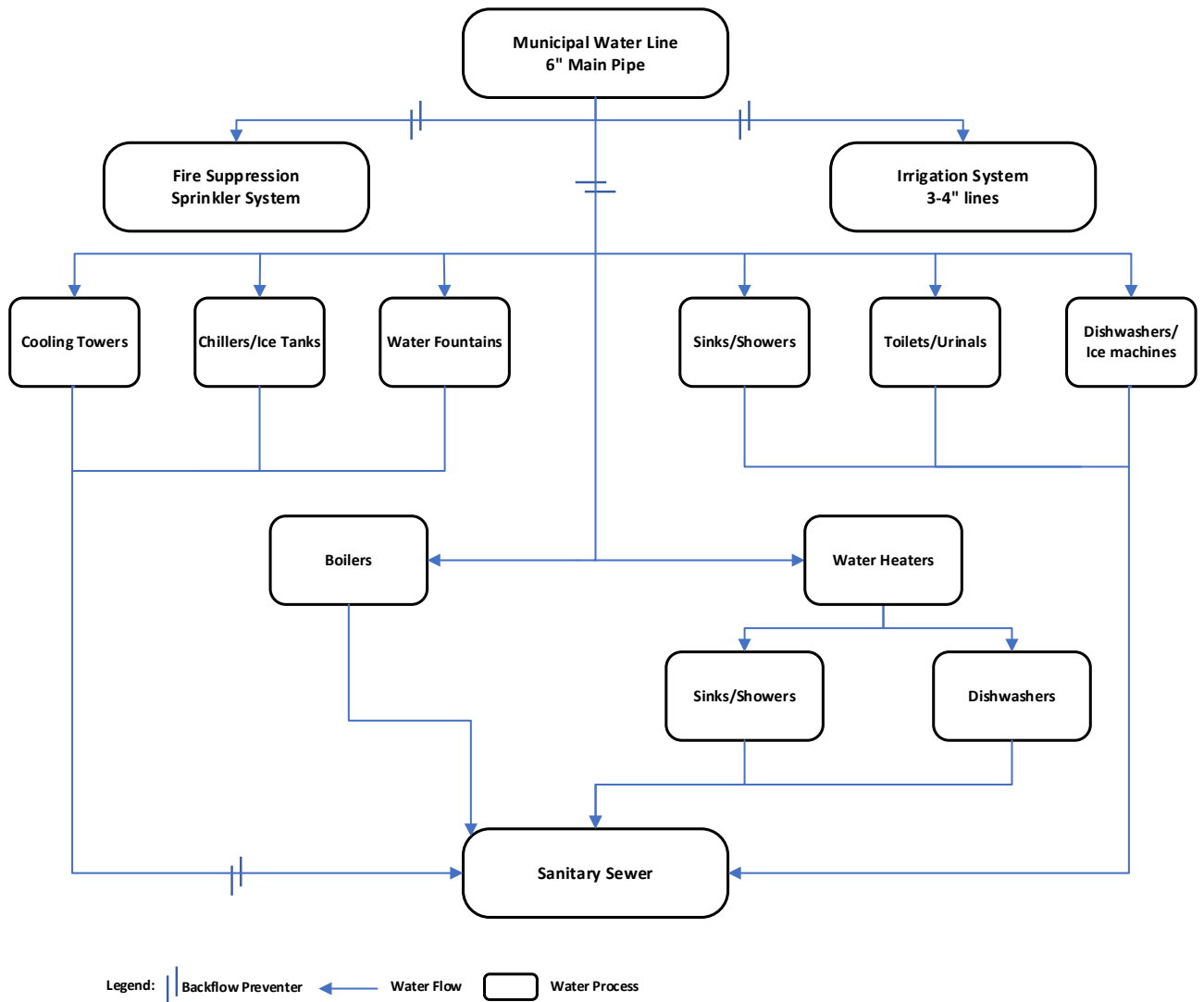
Each school board shall maintain a water management program for the prevention of Legionnaires' disease at each public school building in the local school division. Each school board shall validate each water management program on at least an annual basis to maintain the health and decency of such buildings. Each public school shall maintain files related to its water management program, including the results of all validation and remediation activities, and make such files available for review.

To protect CCPS facilities' water systems from the growth and spread of *Legionella* and to comply with VAC Title 22.1-138 C., the Chesterfield County Risk Management Environmental Health and Safety Division (EHS) in collaboration with Chesterfield County Public Schools Facilities Department (CCPS Facilities) has developed this *CCPS Water Management Program to Reduce Legionella Growth & Spread*. As part of this program, an individualized Water Management Plan was developed for each school based on that building's water systems. Each plan was focused on using preventative maintenance techniques to prevent *Legionella* growth in building's water systems. These plans were developed utilizing guidance from the [CDC publication *Developing a Water Management Program to Reduce Legionella Growth & Spread in Buildings*](#), the [Chesterfield County Cooling Tower Maintenance and Legionella Prevention Water Management Program](#), [CCPS Cooling Tower Inspection Program](#), and information regarding CCPS buildings' plumbing profiles provided by CCPS Facilities.

II. WATER MANAGEMENT PLAN COMPONENTS

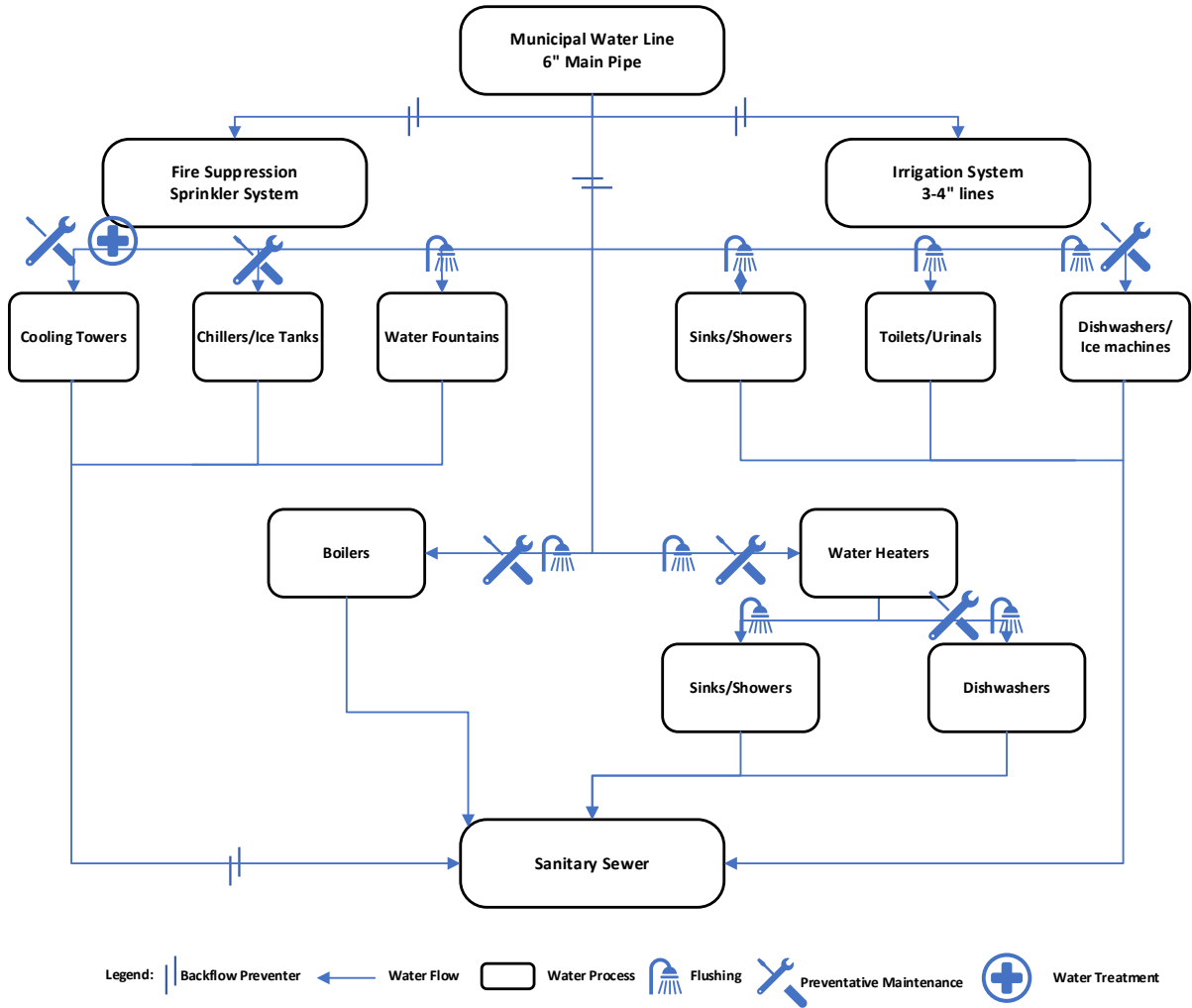
Each building's Water Management Plan includes the following sections based on that school's unique plumbing profile:

- A. **Plumbing Profile Description** – This section will include a narrative of how water enters and is distributed throughout the building.
- B. **Building Water Systems Flow Diagram** – This will provide a schematic of the plumbing profile description such as the one depicted below.



- C. **Potential Exposures and Control Measures** – This section will provide a narrative of the building's water systems with potential for *Legionella* growth (i.e. domestic water lines, water heaters, irrigation systems, sprinkler systems, ice machines, and cooling towers) and how *Legionella* growth will be controlled in these water systems (i.e. flushing program, superheating of water, backflow prevention, water treatment, preventative maintenance, etc.).

D. Control Measures Diagram – This section will provide a schematic of the control measures such as the one depicted below.



E. Control Measures Monitoring – This section will provide a narrative of how it will be determined that the control measures are being properly implemented. These monitoring efforts will generally include a review of maintenance records and reports and *Legionella* testing of cooling towers following preventative maintenance efforts.

F. Water Management Program Validation – This section will provide the methodology for validating the overall Water Management Program. This will generally include auditing of the program by Chesterfield County Risk Management.

III. SCHOOL BUILDING WATER MANAGEMENT PLANS

Links to each CCPS school building's Water Management Plans based on that building's unique plumbing profile are provided below.

A. Elementary School Water Management Plans

[Alberta Smith Elementary School](#)
[AM Davis Elementary School](#)
[Bellwood Elementary School](#)
[Bensley Elementary School](#)
[Bettie Weaver Elementary School](#)
[Beulah Elementary School](#)
[Bon Air Elementary School](#)
[CC Wells Elementary School](#)
[Chalkley Elementary School](#)
[Clover Hill Elementary School](#)
[Crenshaw Elementary School](#)
[Crestwood Elementary School](#)
[Curtis Elementary School](#)
[Ecoff Elementary School](#)
[Elizabeth Scott Elementary School](#)
[Enon Elementary School](#)
[Ettrick Elementary School](#)
[Evergreen Elementary School](#)
[Falling Creek Elementary School](#)
[Gordon Elementary School](#)
[Grange Hall Elementary School](#)
[Greenfield Elementary School](#)
[Harrowgate Elementary School](#)
[Hening Elementary School](#)
[Hopkins Elementary School](#)
[Jacobs Road Elementary School](#)
[Marguerite Christian Elementary School](#)
[Matoaca Elementary School](#)
[OB Gates Elementary School](#)
[Old Hundred Elementary School](#)
[Providence Elementary School](#)
[Reams Elementary School](#)
[Robious Elementary School](#)
[Salem Church Elementary School](#)
[Spring Run Elementary School](#)
[Swift Creek Elementary School](#)
[Watkins Elementary School](#)
[Winterpock Elementary School](#)
[Woolridge Elementary School](#)

B. Middle School Water Management Plans

[Bailey Bridge Middle School](#)

[Carver Middle School](#)
[Elizabeth Davis Middle School](#)
[Falling Creek Middle School](#)
[Manchester Middle School](#)
[Matoaca Middle School](#)
[Midlothian Middle School](#)
[Providence Middle School](#)
[Robious Middle School](#)
[Salem Church Middle School](#)
[Swift Creek Middle School](#)
[Tomahawk Creek Middle School](#)

C. High School Water Management Plans

[Carver College and Career Academy](#)
[Clover Hill High School](#)
[Cosby High School](#)
[CTC Courthouse](#)
[CTC Hull Street](#)
[James River High School](#)
[LC Bird High School](#)
[Manchester High School](#)
[Matoaca High School](#)
[Meadowbrook High School](#)
[Midlothian High School](#)
[Monacan High School](#)
[Thomas Dale High School – Main Campus](#)
[Thomas Dale High School – West Campus](#)

IV. REFERENCES

United States Department of Health and Human Services Centers for Disease Control and Prevention. (2017). *Developing a Water Management Program to Reduce Legionella Growth & Spread in Buildings*.

Chesterfield County Risk Management. (2019). *8.1.1.RMOC.060 Cooling Tower Maintenance and Legionella Prevention Water Management Program*.

Chesterfield County Public Schools. (2019). *PM-1002-Rev_00 Dec 12, 2019 Cooling Tower Inspections Standard Operating Procedure*.

Plumbing profile information provided by Chesterfield County Public Schools Facilities Department.