**Cooling Tower Risk Management Plan Template**

**Components and Format of a Risk Management Plan (RMP)**

A RMP should have a number of basic components that would include:

* Site and key contact details.
* Assessment of each of the critical risks.
* Attachments or reference to other documents such as operational manuals and plans, maintenance plans, shut-down procedures, etc.

**There is no prescribed format for an RMP - this Template is provided as a guide - other formats can be used as long as they contain all of the information required by this Template.**

**About the Template**

The Template is to be completed by Cooling Tower operators which includes the owner or the person in control of the Cooling Tower(s). Hamilton Public Health Services staff created this Template based on a review of the current ASHRAE and CTI Guidelines for Legionella control in Cooling Towers, ANSI/ASHRAE Standard188-2015 Legionellosis: Risk Management for Building Water Systems (Section 7.2 “Cooling Towers and Evaporative Condensers), and the Risk Management Plan Template developed by the Health Protection Branch of the Victorian State Government, Department of Health, Australia.

An RMP must be developed for every Cooling Tower on the site. The RMP, once developed, must be made available to a Public Health Inspector on request. Completing this Template or creating your RMP in another format will meet the requirement of having an RMP under the Hamilton Cooling Tower Registry By-law No. 11-078.

The Template is also available in Word format at [www.hamilton.ca/legionella](http://www.hamilton.ca/legionella) and can be modified to develop your RMP.

**Disclaimer**

This Template is intended only as a general guide to the development of Risk Management Plans for Cooling Towers. No warranty as to the completeness of the information is given. The City of Hamilton, Public Health Services and its employees disclaim all liability and responsibility for any direct or indirect loss or damage which may be suffered through reliance on any information contained in or omitted from this Template, and no person should act solely on the basis of the information contained in the Template without taking appropriate professional advice about obligations in specific circumstances.

# Site and Key Contact Details

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| **Record** | **Your details** |
| **Site location**  *(property address)* |  |
| **Number of Cooling Towers** |  |
| **Cooling Tower(s) Registration Number** |  |
| **Cooling Tower(s) location reference**  *(site details & GPS)* |  |
| **Property owner’s name/contact details**  *(Include corporation name, if applicable, and contact person’s business and after-hours telephone numbers)* |  |
| **Cooling Tower(s)owner’s name/contact details** *(Include corporation name, if applicable, and contact person’s business and after-hours telephone numbers)* |  |
| **Who is responsible for day-to-day operation of the Cooling Tower(s)?**  *(Include corporation name, if applicable, and contact person’s business and after-hours telephone numbers).* This person must have authority to approve the disinfection of the Cooling Tower(s) on request of Hamilton Public Health Services. This person is not the water treatment service provider. |  |
| **Water treatment provider name/contact details** *(Include corporation name, if applicable, and contact person’s business and after hours telephone numbers)* |  |

**Critical Risks**

## Stagnant Water

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| **Stagnant Water Risk Control Strategy** | **Assessment of Cooling Tower(s)***(Tick box)* | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Cooling Tower(s) shutdown, start-up and re-start procedures | Is a start-up, shut down or re-start procedure developed and located in logbook?   * Yes; Procedures are in the logbook * **No; \*Cooling Tower(s) shall not be put into operation or re-started until these procedures are developed and placed into logbook** |  |  |  |
| Removal or activation of any ‘dead legs’ | Are there ‘dead legs’ in the Cooling Tower(s)?   * Yes; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. * No |  |  |  |

1. **Nutrient Growth**

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| **Nutrient Growth Risk Control Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Identify and manage sources of organic contamination | Are there sources of organic material or debris near the Cooling Tower(s) that could contaminate the Cooling Tower(s) and increase the level of nutrients?  Sources of organic material are; dust from nearby construction, road dust, birds, (nesting, and faeces) leaves, etc.   * Yes; Please note the source and type of organic material and describe how this risk will be reduced or managed in these next columns. * None |  |  |  |
| Control corrosion | Is a corrosion control program in place?   * Yes; Please describe. * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |
| Scaling Control | Is a scaling control program in place?   * Yes; Please describe. * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |

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| **Nutrient Growth Risk Control Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Sediment Control | Is a sediment control program in place?   * Yes; Please describe. * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |
| Cleaning and Disinfection | Is/Are the Cooling Tower(s) cleaned and disinfected prior to initial start–up and after any shut down period greater than three consecutive days (e.g routine or tower breakdown)?   * Yes; Please describe. * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |
| Protect the basin and ‘top deck’ of the Cooling Tower(s) from sunlight | Are any of the wetted surfaces exposed to sunlight?   * Yes; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. * No |  |  |  |

1. **Water Quality**

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| **Water Quality Risk Control Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Water treatment program | Are two or more biocides used in a one week rotation?   * Yes; Please describe chemicals used * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |
| Is a compatible bio-dispersant used in a water treatment program?   * Yes; Please describe * No |  |  |  |
| Are control measures in place that measure and confirm that the water chemistry is under control?   * Yes; Please describe * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  |  |
| Testing for HPC | Is the recirculation water tested for HPC?   * Yes * No |  |  |  |
| Testing for *Legionella* | Is the recirculation water tested for Legionella?   * Yes * No | N/A; testing for Legionella is not a requirement, however, PHS is interested in knowing which Cooling Towers in Hamilton are being tested for Legionella. |  |  |

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| **Water Quality Risk Control Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Response to the detection of Legionella | How would you respond to Legionella being detected in a water sample from your Cooling Tower?  □ ASHRAE (188-2015)  □ ASHRAE (12-2000)   * CTI * Manufacturer instructions * Other 1(describe in next column)   **\*Note: This procedure must be documented and placed in your log book)** |  |  |  |
| Labelling of Cooling Tower(s) | Cooling Tower(s) labelled with the Cooling Tower(s) Registration Number (i.e. CT ID)?   * Yes2; Please describe * No; Label cooling tower asap. Please contact PHS to retrieve your CT ID# if you require any assistance. |  |  |  |
| Automated biocide dosing device | Is an automated biocide dosing device installed?   * Yes; Please describe equipment * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed |  |  |  |

1 Other response plan must incorporate the minimum recommendations by ASHRAE or CTI.

2 The Cooling Tower(s) should be labelled with the Registration Number or CT ID that is provided by Hamilton Public Health Services once the cooling tower is registered.

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| **Water Quality Risk Control Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Automated dosing devices for all chemicals or agents | Are automated dosing devices for all chemicals/agents installed?  □Yes; Please describe  □ No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed |  |  |  |
| Appropriate location for chemical dosing | Are the chemical dosing locations downstream from the water sampling point?   * Yes * No |  |  |  |
| Provision of a dedicated water testing location | Is the water chemistry always tested at the same location?   * Yes * No |  |  |  |
| Labelling of water testing location | Is the water testing location clearly labelled?   * Yes * No Label asap |  |  |  |

## Maintenance and Operations

Describe equipment installed and processes implemented to control the growth of Legionella bacteria

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| **Cooling Tower Maintenance Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Review the maintenance program against ASHRAE, CTI,  manufacturer’s instructions or other recommendations | What documents were used as a guide for a maintenance program review?  □ ASHRAE (188-2015)  □ ASHRAE (12-2000)   * CTI * Manufacturer’s instructions or recommendations * Other organization’s document (describe in next column) * None; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed |  |  |  |
| Has a maintenance review been conducted?   * Yes; Date conducted * No; Proposed completion date |  |  |  |
| Are there any improvements that can be made to the maintenance program?   * Yes; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. * No |  |  |  |

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| **Cooling Tower Maintenance Strategy** | **Assessment of the Cooling Tower(s)** | **Describe equipment installed and processes implemented to control the growth of Legionella bacteria** | **Proposed improvements if necessary** | **Date Improvement Response implemented (Signature)** |
| Operating and maintenance manuals and logbook | Is a logbook developed and available for use, complete with start-up, shut down, restart and Legionella next procedures?   * Yes * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed.   **Cooling Tower(s) shall not be put into operation or re-started until these procedures are developed and placed into logbook** |  |  | Date Name Signature |
| Age of the Cooling Tower(s) | What year was/were the Cooling Tower(s) built? |  |  |  |
| Drift eliminator | Are the drift eliminators in good condition (i.e. no holes found and they are not worn-out or clogged and fitted to the Cooling Tower(s)?   * Yes * No; Describe how you will address the risk in the next columns; assign a completion date; date and sign when the improvement is completed. |  |  | Date Name Signature |

## Location and Access

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| **Location and Access Risk Control Strategy** | **Assessment of the Cooling Tower(s)** |  |
| Understand the extent of potential exposure to the Cooling Tower(s) | Is/Are the Cooling Tower(s) located **in** a hospital or a long term care facility (nursing home, retirement home, home for the aged)?   * Yes * No   Is/Are the Cooling Tower(s) located **within 500m of** a hospital or a long term care facility (nursing home, retirement home, home-for-the-aged)?   * Yes; please name the facility(s) within 500 metres in the next columns * No |  |

1. **Communication**

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|  | **Details** | | |
| List names and contact details of who you will inform in the event of a positive *Legionella* test | **Category** | **Name/Title** | **Telephone** |
| Occupational Health Staff |  |  |
| Building Owner |  |  |
| Corporation Spokesperson |  |  |
| Chief Executive |  |  |
| Public Health Services | Health Protection Division | 905-546-2424 xt 7277 |
| Other |  |  |

1. **Endorsement of Risk Management Plan**

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| **Name/position of person responsible for Risk Management Plan** (Please print details) |  |
| **Signature:** | **Date:** |