

OPERATIONAL PLAN

Marathon Well Supply System

Revision 3

Revision Date: April 15, 2020
Revision Level: 3
Internal Reference: MWSS-OP
Page: 1 of 16



This document is considered uncontrolled when printed.

Table of Contents

0	DWQMS Matrix	3
1	Quality Management System	4
2	Quality Management System Policy	4
3	Commitment and Endorsement.....	4
4	QMS Representative.....	5
5	Document & Records Control.....	5
6	Drinking-Water System	5
7	Risk Assessment	12
8	Risk Assessment Outcomes	12
9	Organizational Structure, Roles, Responsibilities and Authorities	13
10	Competencies.....	13
11	Personnel Coverage	13
12	Communications	13
13	Essential Supplies and Services	13
14	Review and Provision of Infrastructure.....	13
15	Infrastructure Maintenance, Rehabilitation, & Renewal	14
16	Sampling, Testing & Monitoring	16
17	Measurement and Recording Equipment Calibration and Maintenance	16
18	Emergency Management	16
19	Internal Audits	16
20	Management Review	16
21	Continual Improvement	16
22	Revision History	16
	Schedule C - Director's Directions for Operational Plans (Subject System Description Form)	

0 DWQMS Matrix

The DWQMS Matrix provided below indicates how the PLAN requirements of Ontario's DWQMS are addressed by Northern Waterworks Inc. DWQMS Elements are addressed through a combination of documentation which includes Operational Plans, corporate procedures and system-specific procedures. This matrix is intended to facilitate the understanding of the reader with respect to the structure of NWI's QMS. Additionally, this matrix will act to facilitate internal and external auditing processes.

DWQMS Element	Document Title
1 – Quality Management System	Operational Plan [MWSS-OP]
2 – QMS Policy	Operational Plan [MWSS-OP]
3 – Commitment and Endorsement	Operational Plan [MWSS-OP]
4 – QMS Representative	QMS Representative Policy [NWI-QMS-4]
5 – Document & Records Control	Document & Records Control Procedure [NWI-QMS-5]
6 – Drinking-Water System	Operational Plan [MWSS-OP]
7 – Risk Assessment	Risk Assessment Procedure [NWI-QMS-7]
8 – Risk Assessment Outcomes	Risk Assessment Outcomes [MWSS-QMS-8]
9 – Organizational Structure, Roles, Responsibilities and Authorities	Organizational Policy [NWI-QMS-9]
10 – Competencies	Competencies Policy [NWI-QMS-10]
11 – Personnel Coverage	Personnel Coverage Policy [NWI-QMS-11]
12 – Communications	QMS Communication Procedure [NWI-QMS-12]
13 – Essential Supplies and Services	Essential Supplies and Services Procedure [NWI-QMS-13]
14 – Review and Provision of Infrastructure	Review and Provision of Infrastructure Procedure [NWI-QMS-14]
15 – Infrastructure Maintenance, Rehabilitation and Renewal	Operational Plan [MWSS-OP]
16 – Sampling, Testing and Monitoring	Sampling, Testing and Monitoring Procedure [MWSS-QMS-16]
17 – Measurement and Recording Equipment Calibration and Maintenance	Measurement and Recording Equipment Calibration and Maintenance Procedure [MWSS-QMS-17]
18 – Emergency Management	Emergency Management Procedure [NWI-QMS-18]
19 – Internal Audits	Internal Audit Procedure [NWI-QMS-19]
20 – Management Review	Management Review Procedure [NWI-QMS-20]
21 – Continual Improvement	Continual Improvement Procedure [NWI-QMS-21]

1 Quality Management System

The Drinking Water Quality Management System (QMS) for the Marathon Well Supply System is documented in this Operational Plan as part of NWI's efforts to ensure that clean, safe and reliable drinking water is supplied to all customers served by this system. The development and continual improvement of the Operational Plan will help to ensure that all regulatory requirements are met and that consumers can be confident that their drinking water will be protected through the effective application of the QMS. This Operational Plan was developed to meet the Ministry's Drinking Water Quality Management Standard.

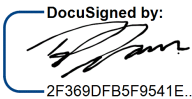
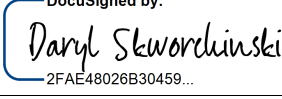


2 Quality Management System Policy

The Corporation of the Town of Marathon utilizes the services of Northern Waterworks Inc. (NWI), an independent contracted operating authority, to operate, maintain and manage the well supply (treatment) component of the Marathon Drinking Water System (as per agreement). The Town of Marathon and Northern Waterworks Inc. are committed to the following:

- 1) Providing the consumer with clean, safe drinking water;
- 2) Meeting or exceeding all applicable legislative and regulatory requirements; and,
- 3) Maintaining and continually improving our quality management system.

3 Commitment and Endorsement

The Town of Marathon and NWI support the implementation, maintenance and continual improvement of a drinking water Quality Management System for the Marathon Well Supply System, as documented in this Operational Plan. The Town and NWI acknowledge the need for and support the provision of sufficient resources to maintain and continually improve the QMS. All the undersigned persons hereby endorse this Operational Plan:

Name & Title:	Signature:	Date:
Rick Dumas Mayor Town of Marathon	 2F369DFB5F9541E...	June 30, 2020
Daryl Skworchinski Chief Administrative Officer/Clerk Town of Marathon	 2FAE48026B30459...	June 24, 2020
Brian Hyshka Works, Operations, Facilities & Parks Manager Town of Marathon	 D224E5970313435...	June 29, 2020
Jason LeBlanc Chief Administrative Officer Northern Waterworks Inc.	 88889B60117145B...	April 15, 2020

4 QMS Representative

Refer to the *QMS Representative Policy* [NWI-QMS-4].

5 Document & Records Control

Refer to the *Document and Records Control Procedure* [NWI-QMS-5].

6 Drinking-Water System

6.1 System Overview

The Marathon Drinking Water System (DWS) is classified as a large municipal residential system and is composed of five (5) active groundwater wells (wells 2, 3, 4, 5 & 6), the Industrial Park Booster Station (IPBS), the Penn Lake Heights Reservoir & Booster Station (PLBS) and the Marathon water distribution system. As an operational subsystem, the Marathon water distribution system is owned and operated by the Corporation of the Town of Marathon. The active wells, reservoir and booster stations comprise the Marathon Well Supply System (treatment subsystem), which is owned by the Town of Marathon and is operated, maintained and managed by Northern Waterworks Inc. As a groundwater source, aquifer overburden and soil act as an effective filter that removes micro-organisms and other particles by straining and antagonistic effect, to a level where the water supply may already be potable but disinfection is required as an additional health risk barrier. All wells use free chlorine disinfection to achieve primary disinfection.

The active groundwater wells 2, 3, 4, 5 and 6 are located throughout the community of Marathon; wells 1 and 7 were previously abandoned and decommissioned in 2002 and 2003, respectively. A single multi-stage vertical turbine pump at each active well is used to draw water from the aquifer. Each well also contains a disinfectant chemical feed system, where disinfectant is injected as groundwater is pumped from the well and directed to the chlorine contact loop. The contact loops are designed to provide the necessary amount of time required to achieve primary disinfection and they are the last treatment step prior to water entering the water distribution system.

The wells are cycled alternately to supply water to the distribution system and the reservoir. The PLBS includes an in-ground storage reservoir that balances system pressure and provides water for emergency situations. The reservoir has a capacity of 4,950 m³ and is filled by all the active wells according to programmable set points. Booster pumps at the facility are used to supply water to and maintain system pressure in the Penn Lake Heights subdivision. The IPBS is located on Peninsula Road and is used to supply water to Industrial Park via booster pumps.

6.2 Source Water Characteristics and Event-Driven Fluctuations

The source water supply for the Marathon Well Supply System includes the groundwater supply for each of the five (5) active wells. Source water for each of the wells is low in turbidity and slightly basic, with temperature generally remaining constant throughout the year. Routine microbiological analyses indicate an absence of E. coli and total coliforms. As is typical for a groundwater supply, there is an overall lack of seasonal or event-driven fluctuations in source water quality. General characteristics for the source water are provided below:

Location	Result Ranges (January 1, 2014 – March 31, 2020)				
	Turbidity (NTU)	pH	Hardness ¹ (mg/L as CaCO ₃)	Total Coliforms (MPN/100mL)	E. coli (MPN/ 100mL)
Well 2	0.05 – 0.09	7.4 – 7.9	160 – 200	absent – 1	absent
Well 3	0.04 – 0.11	7.5 – 7.8		absent – 1	
Well 4	0.04 – 0.10	7.6 – 7.9		absent	
Well 5	0.04 – 0.10	7.5 – 7.8		absent – 1	
Well 6	0.04 – 0.12	7.5 – 7.9		absent	

1. Hardness is provided as a general range based upon infrequent monitoring results. Water with a hardness between 120 and 180 mg/L CaCO₃ is classified as 'hard' water, while water with a hardness greater than 180 mg/L CaCO₃ is classified as 'very hard' water.

The most significant event-driven fluctuation in the source water includes chemical spills or contamination from various potential pollution sources that could impact groundwater quality. Examples of potential pollution sources include fuel leaks and spills in the community, rail accidents and leachate from the previous landfill site. Operational challenges may include identifying the source of contamination, determining its potential impact on source water (which may include special monitoring) and taking remedial action as required (including extended well shutdown).

Monitoring processes (i.e. routine or additional regulatory sampling and water quality testing, continuous monitoring), control measures (including normal treatment barriers) and emergency response procedures are available to minimize the operational challenges posed by a source water contamination event.

6.3 Well 2

Well 2 is a drilled well 23.16 m deep, with a 559 mm diameter outer casing and 305 mm screen and inner casing. The corresponding well house is located approximately 37 m south and 20 m west of the intersection of Whitman Court and Stevens Avenue. The well is equipped with a multi-stage vertical turbine pump, complete with manual air release valve, check valve and magnetic flow meter. The well house also contains backflow preventers, pump-to-waste piping, a back-up power supply for continuous analyzers, spill containment for chemical solution tanks, a digital chart record and an outpost module capable of transmitting operational information.

Disinfectant is injected as raw groundwater is pumped from the well and directed to the chlorine contact loop. This loop consists of 128 m of 450 mm diameter pipe and has been designed such that a minimum of 15 minutes chlorine contact time is provided at peak flows (22.7 L/s). The loop also includes a 19 mm diameter sample line that extends from the end of the loop to the well house. The disinfection system consists of one (1) 270 L sodium hypochlorite solution tank, one (1) free chlorine residual analyzer and two (2) chemical metering pumps (duty and standby) each rated at 1.4 L/h, complete with alarm and automatic switchover capability.

6.4 Well 3

Well 3 is a drilled well 29.5 m deep, with a 559 mm diameter outer casing and 305 mm screen and inner casing. The corresponding well house is located approximately 23 m south and 120 m west of the intersection of Hemlo Drive and La Verendrye Crescent. The well is equipped with a multi-stage vertical turbine pump, complete with manual air release valve, check valve and magnetic flow meter. The well house also contains backflow preventers, pump-to-waste piping, a back-up power supply for continuous analyzers, spill containment for chemical solution tanks, a digital chart recorder and an outpost module capable of transmitting operational information.

Disinfectant is injected as raw groundwater is pumped from the well and directed to the chlorine contact loop. This loop consists of 94 m of 450 mm diameter pipe and has been designed such that a minimum of 15 minutes chlorine contact time is provided at peak flows (19.2 L/s). The loop also includes a 19 mm diameter sample line that extends from the end of the loop to the well house. The disinfection system consists of one (1) 270 L sodium hypochlorite solution tank, one (1) free chlorine residual analyzer and two (2) chemical metering pumps (duty and standby) each rated at 1.4 L/h, complete with alarm and automatic switchover capability.

6.5 Well 4

Well 4 is a drilled well 24.6 m deep, with a 610 mm diameter outer casing and 305 mm screen and inner casing. The corresponding well house is located approximately 140 m south and 65 m east of the intersection of Aspendale Drive and Sund Crescent. The well is equipped with a multi-stage vertical turbine pump with electric and diesel drives, complete with manual air release valve, check valve and magnetic flow meter. The well house also contains backflow preventers, pump-to-waste piping, a back-up power supply for continuous analyzers, spill containment for chemical solution tanks, a 579 L fuel storage tank in a containment well, a digital chart recorder and an outpost module capable of transmitting operational information.

Disinfectant is injected as raw groundwater is pumped from the well and directed to the chlorine contact loop. This loop consists of 128 m of 500 mm diameter pipe and has been designed such that a minimum of 15 minutes chlorine contact time is provided at peak flows (26.5 L/s). The loop also includes a 19 mm diameter sample line that extends from the end of the loop to the well house. The disinfection system consists of one (1) 270 L sodium hypochlorite solution tank, one (1) free chlorine residual analyzer and two (2) chemical metering pumps (duty and standby) each rated at 1.4 L/h, complete with alarm and automatic switchover capability.

6.6 Well 5

Well 5 is a drilled well 24.3 m deep, with a 610 mm diameter outer casing and 305 mm screen and inner casing. The corresponding well house is located approximately 11 m south and 114 m west of the intersection of Nicolet Drive and Hemlo Drive. The well is equipped with a multi-stage vertical turbine pump, complete with manual air release valve, check valve and magnetic flow meter. The well house also contains backflow preventers, pump-to-waste piping, a backup power supply for continuous analyzers, a digital chart recorder and an outpost module capable of transmitting operational information.

Disinfectant is injected as raw groundwater is pumped from the well and directed to the chlorine contact loop. This loop consists of 128 m of 500 mm diameter pipe and has been designed such that a minimum of 15 minutes chlorine contact time is provided at peak flows (26.5 L/s). The loop also includes a 19 mm diameter sample line that extends from the end of the loop to the well house. The disinfection system consists of one (1) 80 L sodium hypochlorite solution tank, one (1) free chlorine residual analyzer and two (2) chemical metering pumps (duty and standby) each rated at 1.4 L/h, complete with alarm and automatic switchover capability.

6.7 Well 6

Well 6 is a drilled well 29.5 m deep, with a 600 mm diameter outer casing and 300 mm screen and inner casing. The corresponding well house is located approximately 100 m west of the intersection of Steedman Drive and Aspendale Drive. The well is equipped with a multi-stage vertical turbine pump, complete with manual air release valve, check valve and magnetic flow meter. The well house also contains backflow preventers, pump-to-waste piping, a 100-kW emergency generator with a 1500 L fuel storage tank, a digital chart recorder and an outpost module capable of transmitting operational information.

Disinfectant is injected as raw groundwater is pumped from the well and directed to the chlorine contact loop. This loop consists of 155 m of 500 mm diameter pipe and has been designed such that a minimum of 15 minutes chlorine contact time is provided at peak flows (32.0 L/s). The loop also includes a 19 mm diameter sample line that extends from the end of the loop to the well house. The disinfection system consists of one (1) 80 L sodium hypochlorite solution tank, one (1) free chlorine residual analyzer and two (2) chemical metering pumps (duty and standby) each rated at 3.6 L/h, complete with alarm and automatic switchover capability.

6.8 Industrial Park Booster Station

The Industrial Park Booster Station is located on Peninsula Road (Highway 626), approximately 453 m east and 732 m north of the intersection of Peninsula Road and Penn Lake Road. The station boosts water pressure in the elevated industrial section of Marathon and contains three (3) centrifugal pumps with a station capacity of 179.7 m³/day, complete with flow meter. The station also includes a standby power system consisting of a 38-kW propane generator, one (1) free chlorine residual analyzer located on the discharge header, a digital chart recorder and an outpost module that is capable of transmitting operational information.

6.9 Penn Lake Heights Reservoir and Booster Station

The Penn Lake Heights Reservoir balances system pressure and provides water during power outages and fire flows. The reservoir is of concrete construction, with clean stone surrounding the structure for groundwater drainage. It has a storage capacity of 4,950 m³ and is filled by all of the active wells according to programmable set points.

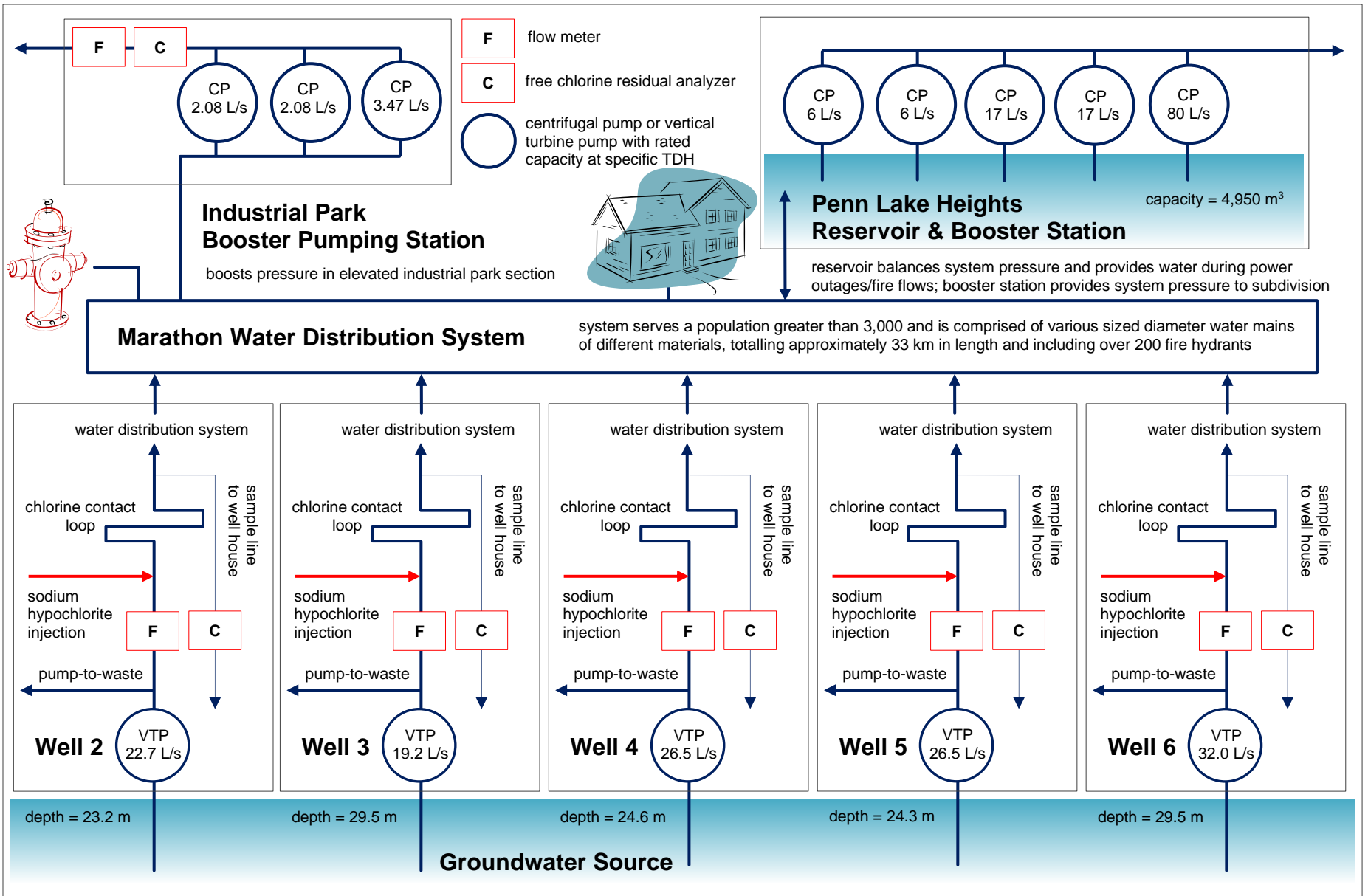
The associated booster station provides system pressure to the Penn Lake Heights subdivision, which includes the public school. This station is required to maintain distribution system pressure in the elevated subdivision and includes two (2) centrifugal pumps each rated at 6 L/s, two (2) centrifugal pumps each rated at 17 L/s and one (1) centrifugal pump rated at 80 L/s. Pump operation is determined by a series of control points based on flow demand and system pressure. The booster station also includes a standby power system consisting of a 325-kW diesel generator, one (1) free chlorine residual analyzer, a digital chart recorder, an outpost module capable of transmitting operational information and a comprehensive alarm system.

6.10 Marathon Distribution System (Operated by the Town of Marathon)

The Marathon Distribution System is an operational subsystem that is owned and operated by the Corporation of the Town of Marathon. The system serves a population of over 3,000 persons and is comprised of various sized diameter water mains consisting of cast iron, ductile iron, high density polyethylene and PVC, totalling approximately 33 km in length and including over 200 fire hydrants. Secondary disinfection requirements in the water distribution system are achieved by maintaining a free chlorine residual at all locations.

6.11 Process Flow Diagram

A process flow diagram for the Marathon Drinking Water System is provided on the following page.



Revision Date: April 15, 2020
 Revision Level: 3
 Internal Reference: MWSS-OP
 Page: 11 of 16



7 Risk Assessment

Refer to the *Risk Assessment Procedure* [NWI-QMS-7].

8 Risk Assessment Outcomes

8.1 Interpretation of the Risk Assessment Outcomes

The risk assessment outcomes were developed using the *Risk Assessment Procedure* [NWI-QMS-7]. This procedure contains all the information necessary to interpret the *Risk Assessment Outcomes* for the Marathon Well Supply System [MWSS-QMS-8]. The risk assessment outcomes include the following:

- (1) Potential hazardous events and associated hazards;
- (2) Assessed risks associated with the occurrence of hazardous events, including considering the likelihood, severity and detectability of the event;
- (3) Ranked hazardous events;
- (4) Monitoring processes and control measures associated with each hazardous event;
- (5) Critical control points and their respective critical control limits; and,
- (6) Response procedures for hazardous events.

8.2 Monitoring Critical Control Limits

Various monitoring processes are in place to monitor critical control limits and to identify deviations from those limits. Critical control limits and other parameters associated with critical control limits are monitored by the following processes:

- (1) Continuous monitoring and alarm systems (i.e. analyzers and trending associated with free chlorine residual data, flow, pressure, etc.). Alarm systems notify operators when critical control limits or other alarm set points have been breached;
- (2) Routine regulatory sampling (i.e. weekly microbiological analyses, quarterly chemical analyses, etc.);
- (3) Routine water quality tests (i.e. daily tests for free chlorine, weekly tests for turbidity and pH, etc.);
- (4) Operational checks, where operators collect and interpret data (i.e. pump hours, flows, analyzer readings, compliance data) and inspect facilities on a daily basis;

- (5) Additional operational checks associated with planned maintenance, where certified operators conduct more detailed inspections of facilities on a monthly basis; and,
- (6) Notification from external parties (i.e. notification that a chemical contamination event has occurred, notification of a large fire in the community, a water quality complaint that results in the identification of a cross-connection, etc.).

8.3 Critical Control Limit Deviations

Procedures outlining how to respond to, report and record deviations from critical control limits exist as a series of *Emergency Response Procedures*. Specifically, *Emergency Response Procedures* contain step-by-step response instructions, including instructions related to communication protocols and recordkeeping requirements.

All critical control limit deviations are recorded in the facility logbook but may also be recorded within Adverse Water Quality Incident documentation, call-out records, customer complaint records and operational spreadsheets.

9 Organizational Structure, Roles, Responsibilities and Authorities

Refer to the *Organizational Policy* [NWI-QMS-9].

10 Competencies

Refer to the *Competencies Policy* [NWI-QMS-10].

11 Personnel Coverage

Refer to the *Personnel Coverage Policy* [NWI-QMS-11].

12 Communications

Refer to the *QMS Communication Procedure* [NWI-QMS-12].

13 Essential Supplies and Services

Refer to the *Essential Supplies and Services Procedure* [NWI-QMS-13].

14 Review and Provision of Infrastructure

Refer to the *Review and Provision of Infrastructure Procedure* [NWI-QMS-14].

15 Infrastructure Maintenance, Rehabilitation, & Renewal

15.1 Planned Maintenance, Rehabilitation, & Renewal

NWI, under contract with the owner, maintains a program of scheduled inspection and maintenance of infrastructure for which it is operationally responsible. Maintenance activities are developed according to manufacturer instructions, regulatory requirements, industry standards and/or client service requirements. Records of planned maintenance activities are controlled in accordance with NWI's *Document and Records Control Procedure* [NWI-QMS-5]. The major components of the infrastructure maintenance, rehabilitation and renewal programs in place for the Marathon WSS are described below.

- (1) The *Planned Maintenance Activities Standard Operating Procedure* [MWSS-SOP-1] documents a comprehensive program that is carried out by operations staff at the Marathon Well Supply System on a monthly or less frequent basis. This procedure dictates planned inspection and maintenance activities associated with infrastructure components including pumps, valves, chemical feed systems, treatment equipment, emergency response equipment, standby power systems, heating systems, lighting and other components necessary to ensure a reliable supply of safe drinking-water.

This procedure also facilitates infrastructure rehabilitation and renewal, as it requires the identification and reporting of deficiencies. Identified deficiencies may be addressed through operational budgets, particularly as it concerns the rehabilitation and renewal of smaller infrastructure components such as chemical feed systems and valves.

- (2) The *Measurement and Recording Equipment Calibration and Maintenance Procedure* [MWSS-QMS-17] documents certain planned calibration and maintenance activities that are specific to instrumentation. The associated *Calibration and Maintenance Records* are used to indicate a variety of maintenance activities, such as instrument inspection, cleaning and quality assurance. Generally, such activities are carried out by operations staff on a monthly basis.
- (3) NWI monitors and coordinates additional maintenance activities that include infrastructure inspection, maintenance or servicing that occur on a recurring but less frequent basis. These activities are outlined in the long term forecast and are included in capital and operational budgets. Examples of such activities include flow meter calibration verification, backflow prevention device testing, reservoir cleaning and inspections, thermal imaging inspections, emergency generator servicing and load testing, the replacement of various critical components, etc.
- (4) The *Review and Provision of Infrastructure Procedure* [NWI-QMS-14] and annual budgeting procedures are the main methods through which infrastructure rehabilitation and renewal occurs. Specifically, the annual infrastructure review process evaluates overall infrastructure adequacy and provision. This process also requires the identification of deficiencies and the application of recommendations to address those deficiencies.

The outcomes of the infrastructure review represent the main inputs into annual capital expenditure budgets prepared by NWI for consideration and approval by the Town or Marathon. The integration of annual budgeting and infrastructure review processes represents a continuous and cohesive effort to identify deficiencies and plan for infrastructure rehabilitation and renewal.

15.2 Unplanned Maintenance

Unplanned maintenance tasks related to the treatment component of the Marathon Drinking Water System result from equipment or infrastructure failures. Unplanned maintenance is authorized by the Operations Manager or the Overall Responsible Operator. Documentation of these unplanned maintenance tasks are recorded in the facility logbooks. Measures to prepare for and expedite unplanned maintenance tasks in these scenarios include equipment interchangeability and redundancy, spare parts inventories and the availability of relevant operations and maintenance manuals.

15.3 Long Term Forecast

A long term forecast of major infrastructure maintenance, rehabilitation and renewal activities is included in the *Infrastructure Asset Management System* [MWSS-QMS-14-1] for the Marathon Well Supply System. In accordance with the *Review and Provision of Infrastructure Procedure* [NWI-QMS-14], the forecast is reviewed and updated once per calendar year coincident with the completion of the infrastructure asset condition assessments.

15.4 Program Monitoring

To ensure that the planned maintenance program remains effective, the *Planned Maintenance Activities SOP* and the *Measurement and Recording Equipment Calibration and Maintenance Procedure* are reviewed and updated annually. This review is facilitated by Compliance Coordinators and includes Operations Managers and Operators. The review accounts for changes to infrastructure and allows an opportunity to refine and continually improve the maintenance program, particularly as it involves incorporating new best practices.

15.5 Program Communication

NWI's infrastructure maintenance, rehabilitation and renewal programs for the Marathon Well Supply System are communicated to the Town of Marathon on annual basis as a component of the communication of management review results. Significant planned and unplanned infrastructure maintenance, rehabilitation and renewal activities are also described in monthly operational reports submitted to the Town.

16 Sampling, Testing & Monitoring

Refer to the *Sampling, Testing, & Monitoring Procedure* for the Marathon Well Supply System [MWSS-QMS-16].

17 Measurement and Recording Equipment Calibration and Maintenance

Refer to the *Measurement and Recording Equipment Calibration and Maintenance Procedure* for the Marathon Well Supply System [MWSS-QMS-17].

18 Emergency Management

Refer to the *Emergency Management Procedure* [NWI-QMS-18].

19 Internal Audits

Refer to the *Internal Audit Procedure* [NWI-QMS-19].

20 Management Review

Refer to the *Management Review Procedure* [NWI-QMS-20].

21 Continual Improvement

Northern Waterworks Inc. is committed to continually improving the effectiveness of its Quality Management System. Continual improvement is facilitated by the management review and internal auditing processes, which include the identification of QMS deficiencies and the assignment of preventive and corrective actions.

Refer to the *Continual Improvement Procedure* [NWI-QMS-21].

22 Revision History

Date	Revision	Comments
17-Jan-2014	1	Initial publication of Operational Plan.
15-Apr-2015	2	Updates to sections 2 (QMS Policy), 3 (Commitment and Endorsement), 6 (Drinking-Water System), 8 (Risk Assessment Outcomes) and 13 (Essential Supplies and Services).
15-Apr-2020	3	Updates to sections 2 (QMS Policy), 3 (Commitment and Endorsement), 6 (Drinking-Water System), 8 (Risk Assessment Outcomes), 15 (Infrastructure Maintenance, Rehabilitation, and Renewal) and 21 (Continual Improvement).

**Schedule C – Director’s Directions for
Operational Plans (Subject System
Description Form)
Municipal Residential Drinking Water System**

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *

The Corporation of the Town of Marathon

Name of Municipal Residential Drinking Water System *

Marathon Drinking Water System

Subject Systems

Check here if the Municipal Residential Drinking Water System is operated by one operating authority. Enter the name of the operating authority in the below table.

	Name of Operational Subsystems(if Applicable)	Name of Operating Authority *	DWS Number(s) *
1	Marathon Well Supply System	Northern Waterworks Inc.	220000255
2	Marathon Water Distribution System	The Corporation of the Town of Marathon	220000255

Provide the information outlined in the 'Contact Information' section for **each** Operational Subsystem.

Contact Information 1

Last Name *	First Name *	Middle Initial
Kyle	Nicholas	
Title *	Phone Number *	
Compliance Coordinator (Northern Waterworks Inc.)	807 728-1824	
Email Address *		
nicholas.kyle@nwi.ca		

Contact Information 2

Last Name *	First Name *	Middle Initial
Hyshka	Brian	
Title *	Phone Number *	
Works, Operations, Facilities & Parks Manager	807 229-1340	
Email Address *		
worksmanager@marathon.ca		