

## 2020 DWQMS Workshops Breakout Session Summary

The Drinking Water Quality Management (DWQMS) Provincial Workshop is a WCWC course held annually to provide DWQMS representatives with an opportunity to share and discuss their experiences. This forum allows them to share best practices and solutions for challenges encountered during implementation or continued maintenance of a quality management system. The program consists of different facilitators leading sessions on a variety of topics tying into a common theme. The theme for this year's workshop was 'Vision 2020'.

For more information visit: <https://wcwc.ca/drinking-water-quality-management-standard-provincial-workshop-proceedings-2020/>

<b>Breakout</b>	<b><u>Best Management Practices</u></b>
<b>Facilitator</b>	<b>Brigitte Roth, Acclaims Environmental</b>
<b>Summary</b>	<p>DWQMS 2.0's Element 21 now requires that we <b>track and measure</b> continual improvement – and not only for our drinking water systems' failures, but also for the review and consideration of <b>best management practices (BMP's, at least once every thirty-six months)</b>. Where do we get ideas on BMP's? How do we keep up to date on these?</p> <p>In this session, participants walked through element by element of the DWQMS 2.0 and discussed: best management practices (BMP's) for each, where BMP ideas can come from, and how we keep up to date on these.</p>

### DWQMS 2.0 Key Commitments

#### ***Our commitments are our duties.***

- provide **safe drinking water**,
- **comply** with legal requirements,
- achieve **continual improvement**.

#### ***Duty for continual improvement***

### Intent of Management Systems

***"You do not rise to the level of your goals.  
You fall to the level of your systems."***

– James Clear, Atomic Habits

1. **Set ourselves up for success** – to consistently achieve what's intended from each of our **processes and programs**.
2. When you **"fall"**, you take **actions to improve** your system.

**Summary of best management practices, as related to each of the DWQMS 2.0 elements:**

Element	Best Management Practice
2 – QMS policy	<p>Staff are <b>aware of their roles’ impacts</b> in helping achieve the QMS Policy commitments (and not only <u>about</u> the QMS Policy) and the <b>intended outcomes</b> of their processes and programs.</p> <p>The <b>QMS Policy text</b> is available online at the operating authority’s water webpage (addressing potential difference in QMS Policy version that might exist in the Operational Plan vs. online).</p>
3 – Commitment & endorsement	<p>Owner / Top Management commitments “signed-off” include commitment <b>to determine, obtain or provide resources needed to maintain &amp; continually improve</b> the system.</p> <p><b>Within one year of</b> each <u>new council</u> and/or <u>changes to top management</u>, an <b>updated endorsement of the Operational Plan</b> is obtained.</p> <p>With each new council report for Operational Plan endorsement, consider also presenting a <b>drinking water system overview</b> using the province’s <a href="#">“Taking Care of Your Drinking Water Guide”</a>, answering the questions specific to your system(s) included in the <b>“Check Your Knowledge”</b> section of the guide.</p>
4 – QMS representative	<p>QMS Rep is identified <b>with back-up</b>.</p> <p>There exists a <b>schedule of QMS deadlines</b>, and an effective process for <b>tracking legislative changes and communicating</b> about these.</p> <p>QMS is seen as a <b>shared responsibility</b> by all team members (and not only QMS Rep’s role).</p>
5 – Document & records control	<p>Implementation of <b>legislative updates</b> is often involving updates to existing <b>SOP’s and forms</b>. It is therefore incredibly important that <b>only the last versions</b> are used at all times.</p> <p>Staff can <b>access and complete documented information remotely</b>, especially for ensuring the effective planning, operation and control of operations (e.g. document control software, GIS-based record-keeping, electronic logbooks, etc.)</p> <p>Staff <b>periodically review SOP content</b> for currency / accuracy.</p> <p>Assess whether staff can easily access <u>remotely on mobile device</u>, or only through <u>computer via login, Cloud, PDF’s saved on devices, hard copy binders</u>, other means?</p>

Element	Best Management Practice
	Assign the <b>responsibility for ensuring O&amp;M manuals are always up-to-date</b> and <b>contain the required information</b> specified in the MDWL requirements for O&M content.
6 – Drinking water system	<p>DWS description is up-to-date and addresses all Element 6 parts.</p> <p>Any <u>event-driven fluctuations, operational challenges and threats</u> identified should also appear on the <b>risk assessment</b>.</p> <p>If <u>multiple connected systems</u>, links to El. 12 communications (<b>how effective are communications between owners / operating authorities</b>)</p>
7 / 8 – Risk assessment & risk assessment outcomes	<p>Evidence that the risk assessment considers the MECP’s document, “<b>Potential Hazardous Events for Municipal Residential Drinking Water Systems</b>”.</p> <p>Provides records (e.g. meeting minutes) of the calendar year / 36-month review and considers <b>changing conditions and notes any issues or needs</b> related to:</p> <ul style="list-style-type: none"> <li>- <b>regulatory</b>,</li> <li>- <b>source water</b> characteristics,</li> <li>- <b>operational challenges / events</b>,</li> <li>- infrastructure / equipment <b>reliability and redundancy</b></li> </ul> <p>Identifies <b>Critical Control Points</b> (CCP’s) <b>for things we can control</b> (usually related to achieving/ maintaining <b>disinfection</b>)</p> <p>Sets <b>Critical Control Limits</b> (CCL’s, <i>the point at which a CCP response procedure is initiated</i>) <b>that are better than</b> regulatory limits and <b>well understood by staff</b> who are responsible for them.</p> <p>Defines <b>CCL monitoring processes / procedures</b>.</p> <p>Describes <b>what to do in CCL deviations</b>.</p> <p>Describes <b>how to report / record CCL deviations</b>.</p> <p>Highest risks link to <b>emergency response procedures</b> when situations are out of your control.</p>
9 – Organizational structure, roles, responsibilities & authorities	<p>Includes an <b>organizational structure</b> that depicts the delineation of <u>owner</u>, <u>operating authority</u>, who is part of <u>top management</u>, who participates in <u>management reviews</u>. Roles included in the organizational chart are also included in the “<b>responsibilities and authorities</b>” <b>table</b> that follows.</p> <p>Roles, responsibilities and <b>authorities</b> (also include what each role is authorized to do – consider this under normal operating conditions and “emergency declarations”, &amp; how these can change).</p>

Element	Best Management Practice
10 - Competencies	<p>This section should describe <b>minimum competencies</b> to operate your system (not only the “desired” competencies, e.g. Class III certificate vs. <b>OIT or Class I</b> certificate).</p> <p>When hiring a new operator, you should describe <b>how competencies</b> for this new team member <b>are developed</b>, and how <b>ongoing competencies are tracked</b> and maintained.</p> <p>Consider <b>updating this</b> section to reflect the <b>alternate forms and virtual training</b> opportunities now available to you to maintain competencies. Also explore Ontario colleges and universities for training options, now that students are online learning – e.g. Fleming College Water program.</p> <p>While O. Reg. 128/04 allows for averaging of training hours over three years, a best practice is to <b>keep pace with the “Annual Training for Operators”</b> listed under s.29 of the reg.</p> <p>Verify that the required <b>number of training hours</b> for operators is aligned with the <b>highest type and class of system</b> where the operator works (and not with their own certificate level).</p>
11 – Personnel coverage	<p>This section should now reference up-to-date information re: <b>pandemic-related staff coverage strategies</b> – (e.g. suspend less critical work, remote work, physical distancing, staggered shift starts, H&amp;S PPE stock, common surfaces disinfection procedures, what to do if staff are impacted – consider family member exposed or have COVID-19, team members exposed to one another, ID different strategies re: town hall / city hall measures vs. what policies are possible for ops).</p>
12 - Communications	<p>The procedure for communications often references “QMS-specific” communications only. An opportunity exists to describe <b>what is communicated, when, with whom and how</b> the utility communicates with staff, the owner, the public, essential supplies / services providers.</p> <p>Can reference <b>teleconferencing resources</b> and <b>how effective communications are achieved when</b> working remotely.</p>
13 – Essential supplies / services	<p>Review essential supplies / services – are <b>quality requirements aligned</b> with your <b>MDWL and DWWP</b> requirements?</p> <p>Does anyone <b>verify quality</b> requirements on delivery? Is there an <b>inventory (min/max)</b> system in place to <b>ensure spare supplies</b> are in stock?</p> <p>In pandemic, any <b>change in levels of service</b> or delays or in <b>how you had to request supplies / services</b>? <b>H&amp;S PPE</b> may now appear in inventory?</p>

Element	Best Management Practice
<p>14 – Review and provision of infrastructure</p>	<p>Are <b>staff consulted</b> in infrastructure review and asset management planning processes?</p> <p>Evidence that infrastructure reviews consider <b>risk assessment outcomes</b>? Link to <b>asset management</b> plans?</p> <p>How are <b>infrastructure project specifications</b> kept <b>up to date</b>? <b>Verified</b> for conformity?</p>
<p>15 – Infrastructure maintenance, rehabilitation and renewal</p>	<p>Additional to the description of your regular, preventive and breakdown maintenance activities...</p> <p>Do you describe and keep a summary of <b>long-term forecast of major infrastructure maintenance, rehabilitation and renewal activities</b>?</p> <p>Do you have a record of the <b>last date</b> when these were carried out and <b>when they're next due</b>? (e.g. infrastructure inspections programs, clean-outs, rehabilitation work on reservoirs, towers, pumps, road reconstruction projects, watermain rehabilitation work, etc.) Do you reference <b>asset management plans</b> (as required by O. Reg. 588/17?)</p> <p><b>Evidence</b> that these <b>long-term forecasts</b> are reviewed at <b>least once every calendar year</b>?</p> <p>How do you <b>communicate</b> all <b>maintenance programs</b> to the <b>owner</b>?</p> <p>How do you <b>monitor the effectiveness</b> of your maintenance program? <b>Records</b> available?</p>
<p>16 – Sampling, testing and monitoring</p>	<p>Redundancies in place for sampling, testing, monitoring programs – team members <b>review</b> one another's <b>chains of custody</b>, <b>more samples than required</b> are taken, <b>back-up record keeping</b> to monitoring systems: <b>dataloggers</b> for critical process parameters in case communications fail, <b>Historian</b> back-up, etc.</p>
<p>17 – Measurement and recording equipment calibration and maintenance</p>	<p><b>Full list</b> of measurement and recording equipment, with <b>once every 12 months checks / maintenance</b>, calibration / verification <b>schedule</b> with <b>records available</b> that correspond to full list of equipment requiring calibration / maintenance.</p> <p>Incorporates new <b>licence requirement for “Calibration of CT Monitoring System”</b>: check <b>once every 12 months</b> and where necessary calibrate (or more frequently in accord. w/ manufacturer).</p>
<p>18 – Emergency management</p>	<p><b>Annual emergency training and testing</b>? Best practice, based on sector and municipal emergency preparedness activities.</p>

Element	Best Management Practice
	<p>In 2020, the <b>pandemic</b> can be your <b>emergency training and test exercise</b> (along with other actual emergencies), as long as you <b>conduct a debrief (“after action report”)</b> and <b>track improvement</b>.</p> <p>As the pandemic is ongoing, you can call it an “<b>in action report</b>” to take stock of what’s going well, not going well, and opportunities for improvement / lessons learned.</p> <p>When an emergency event or other failure happens, consider <b>hosting a debrief and after-action report</b>, involve <b>as many different perspectives</b> as possible, <b>answer</b>:</p> <ol style="list-style-type: none"> <li>1. <b>why</b> did this happen?</li> <li>2. what <b>went well</b>?</li> <li>3. what <b>didn’t go well</b>?</li> <li>4. other opportunities for improvement (<b>OFI’s</b>) / <b>lessons learned</b>?</li> </ol> <p>Link OFI’s to the <b>continual improvement tracking</b> mechanism you have in place.  <b>You are not only evaluated on what you did, but also what you did not do</b> (in response to emergencies and other failures).</p>
19 – Internal audits	<p>Can <b>conduct audits remotely</b> using information &amp; communications technology, should document the <b>review of previous internal / external audit findings</b> and the <b>status update</b> on each.</p>
20 – Management review	<p>When writing minutes of the <b>Management Review (including items a to p)</b>, avoid writing “no comment” for any item – as it can appear you’re not interested in discussing certain items. Instead, for “incidents of non-compliance” (for example), you can state “<u>there were no incidents of non-compliance in 2020</u>” (again, rather than “no comment”).</p> <p>Are system <b>deficiencies, decisions about these and any deviations “from normal” reported</b> through Management Review and to Owner?</p> <p>Can <b>link Management Review</b> to the <b>A&amp;S report timeline</b> (e.g. February each year), and share the results of Management review, identified <b>deficiencies, decisions and action items</b> to the Owner.</p>
21 – Continual improvement	<p><b>Track and measure</b> continual improvement (with consideration of best management practices, the identification and management of corrective actions &amp; preventive actions).</p> <p><b>Track BMP’s from a variety of sources</b> such as from: MECP inspection reports, internal audit reports, external audit reports, staff suggestions, other operating authorities, case studies, industry associations’ newsletters, conferences, workshops, training programs,</p>

Element	Best Management Practice
	<p>networking events, online municipal water / wastewater regulatory web-based forum (<a href="https://municipaldrinkingwater.ning.com">https://municipaldrinkingwater.ning.com</a>)</p> <p><b>Corrective actions</b> are taken and <b>recorded / tracked</b> to <u>eliminate the cause</u> of a non-conformity, non-compliance, drinking water system failure, etc.</p> <p><b>Preventive actions</b> are taken and <b>recorded / tracked</b> to <u>prevent the occurrence</u> of a <u>potential</u> non-conformity, non-compliance, drinking water system failure (such as recognizing that an event that has occurred elsewhere is possible to occur at your utility).</p>

<b>Breakout</b> <u><i>Applying QMS Principles (Pandemic Focus)</i></u>	
<b>Facilitators</b>	<b>Christopher Manning and Amanda Boyden, MECP</b>
<b>Summary</b>	<p><i>The impacts of the pandemic have affected all systems in some way. Planning for a pandemic was unforeseen, with many things changing very quickly and at the same time, with large impacts on the people that operate the system. The session explored how normal system operations were impacted by the pandemic, how the QMS prepared systems for the impacts, the temporary measures put in place for continuity of operations, and the potential longer-term changes that could be made to improve this type of response in the future.</i></p>

Impact	Challenges and Adaptations
<i>Personnel Coverage</i>	<p>Personnel coverage was an immediate consideration for all systems due to distancing and the risk of illness and the potential impacts on adequate personnel coverage. Other broader issues impacting personnel not initially seen: Childcare issues, staff with health concerns, or concerns for vulnerable family members, extra burden on people longer term like burn-out from trying to manage restrictions and be available for work. Ensuring flexibility was available for staff was and remains important.</p> <p><u>Personnel Coverage Adaptations from discussion during sessions</u></p> <ul style="list-style-type: none"> <li>• Decentralization of workforce and use of cohorts</li> <li>• Created designated separate stations for cohorts of operators and designated samplers for each area.</li> <li>• Staff took vehicles home at night and staff do not share vehicles</li> <li>• Operators report to their specific sites at the start of the day (staff no longer come together in shared spaces). In the short-term has worked well because staff are on site earlier.</li> </ul>

Impact	Challenges and Adaptations
	<ul style="list-style-type: none"> <li>• Creating cohorts ensures there is redundancy, staff remain cross trained on operations at different systems/facilities in case they are needed</li> <li>• Use of staggered starting times to reduce numbers</li> <li>• Alternating cohorts week to week for who enters the plant or office</li> <li>• Switched to running midnights made it easier to get smaller jobs done, but harder to get larger jobs done due to lack of resources</li> </ul>
<p><i>Certification and Training</i></p>	<p><u>Issues Getting CEUs</u></p> <ul style="list-style-type: none"> <li>• Issues where systems have waited too long to get CEUs and now courses aren't available</li> <li>• Suggestion to front load the hours, and do better at regular training throughout the three-year period</li> <li>• Proactively divide ministry training/CEU requirements over three years to keep consistency</li> <li>• Many systems are struggling with getting on the job training.</li> <li>• Suggestion to use recorded sessions for flexible use on demand. Prevents connection issues especially for operators that are in rural areas where they may lose connectivity during a live (virtual) session.</li> </ul> <p><u>Suggested Training</u></p> <ul style="list-style-type: none"> <li>• OMWA on the job training</li> <li>• WCWC on the job training for additional CEUs</li> <li>• Acclaims has also put together self-paced training (regulatory/DWQMS)</li> <li>• California state correspondence courses: These can only be completed once until edition number changes</li> <li>• Target Solutions Courses (can also post your own information through their website) for review by staff.</li> <li>• OETC training – Offers flexibility for scheduling staff to do online self-paced training. Many of the scheduled training session are not flexible for operators</li> <li>• On the job training: Created more formalized training using the technical bulletins provided by the ministry, and developed quizzes and discussions based on the bulletins</li> <li>• Some have also brought in trainers from the local fire department for the more safety related training</li> <li>• BSI – ISO 31000 Risk management training  <a href="https://www.bsigroup.com/en-CA/ISO-31000-Risk-Management/ISO-31000-Risk-Management-training-courses/">https://www.bsigroup.com/en-CA/ISO-31000-Risk-Management/ISO-31000-Risk-Management-training-courses/</a></li> <li>• HACCP training for Risk Assessments</li> <li>• OMWA Courses and Virtual Sessions</li> </ul>



## Impact

## Challenges and Adaptations

### *Risk Assessment, Emergency Response and Essential Supplies and Services*

#### Was a pandemic considered in your Risk Assessment previously?

- Some systems did have a pandemic in the RA, but was more based on personnel coverage
- Comments that considering a pandemic has too many variables, better to deal with as an emergency.
  - More important to have the personnel coverage aspects documented, but too hard to know what a pandemic would look like each time (type of disease, level of severity)
- Most confirm it has now moved up in risk ranking
- Some had considered water hoarding as a risk in the event things were in short supply

#### Other Risk Assessment Considerations

- What is the risk of not getting parts/supplies now if supply chains are impacted?
- What pieces of equipment are at or nearing end of life, do you have parts available?
- Typically, RA deals with issues that are geographical in nature (weather events, etc) not global and broad reaching such as this
- Important to look at all the look at the “what if” scenarios

#### Emergency Response

- Continuity of Operations Planning
- Used emergency response procedures for getting additional trained personnel and redeployed staff from other areas (like parks) and trained them in water so they could be used as trained persons if needed
- Using pandemic for emergency planning exercises
- Cohorts for staff so there is redundancy available
- Signing up for OnWarn
- Identifying limitations and bottlenecks that have come out during changes (reliance on one or two key individuals to provide critical information, what happens when they aren't available?)

#### Essential Supplies and Services

- Use of OnWarn if parts are needed, allows systems to purchase from other municipalities
- Sample bottle shortages for quarterly samples – suppliers starting to ask how badly they needed to ensure they do not run out
- UV bulb shortages for specific models– check with suppliers to confirm availability in advance
- Other considerations - Some suppliers are asking for orders to have minimum two weeks notice due to shipping delays
- Expect delays, ensure you have back-ups

Impact	Challenges and Adaptations
<p><i>Short-term Adaptations and Limitations</i></p>	<ul style="list-style-type: none"> <li>• Cohorting staff reduced availability. This created a need for additional resources. Documented a listing of acceptable third-party contractors to provide services for emergency repairs.</li> <li>• Started maintaining a list of certified operators even when they leave operations in case there is an emergency, they have a pool they can draw from</li> <li>• Developed an online screening tool for staff to use before coming to work</li> <li>• Having PPE and hand sanitizer shipped directly to staff homes</li> <li>• Operators no longer share vehicles or tools</li> </ul> <p><u>Limitations</u></p> <ul style="list-style-type: none"> <li>• How do you effectively train new staff remotely?</li> <li>• Missing out on that personal aspect networking with colleagues</li> <li>• Paper processes that had to immediately stop – and quick adoption of newer online processes</li> <li>• Supervisors needing to take on more administrative roles that staff can't do due to cohorting and work from home</li> <li>• Larger maintenance projects not getting done because not enough people can come together to complete them</li> </ul>
<p><i>Longer-Term Adaptations</i></p>	<p><u>Longer term changes (or things that would have been helpful in hindsight)</u></p> <ul style="list-style-type: none"> <li>• Are these changes practical longer term? How long will altered operations be impacted for?</li> <li>• Institution of flex time to help provide accommodation for staff who have family considerations to prevent burn-out</li> <li>• New expectation that everything is going to take longer and to factor that into timelines</li> </ul> <p><u>ONwarn</u></p> <ul style="list-style-type: none"> <li>• For sharing of resources with OA around Ontario i.e. sharing parts/or issues with equipment, or personnel if there are shortages.</li> </ul> <p><u>Communications with Suppliers</u></p> <ul style="list-style-type: none"> <li>• Developed a procedure for periodic check in with essential suppliers to ensure it was updated and establish regular updates from suppliers to confirm supplies are still available, or are there interruptions to supply chain, or delays due to the pandemic</li> </ul> <p><u>More adoption of technology</u></p>

Impact	Challenges and Adaptations
	<ul style="list-style-type: none"> <li>• Use of online documents/records to improve accessibility</li> <li>• Use of tablets for staff in the field</li> <li>• More online training</li> <li>• Transitioning to laptops if weren't previously using</li> <li>• Will likely continue with virtual meetings</li> </ul> <p><u>Adding flexibility where procedures too rigid</u></p> <ul style="list-style-type: none"> <li>• Procedures that are too prescriptive can cause issues when additional flexibility was needed in an emergency. For example, adding flexible terminology for roles like “<i>or designate</i>” to cover off an additional person if needed.</li> <li>• Rigid sampling plans that relied on specific sampling locations that weren't available during the pandemic once closures/distancing measures occurred. Systems installed distribution sampling points.</li> </ul> <p><u>Budget Considerations</u></p> <ul style="list-style-type: none"> <li>• Could municipalities allow for deferral of capital projects? Is there potential to institute budget carry over to make funds available for projects delayed for these sort of emergency circumstances?</li> <li>• Creation of an emergency reserve outside of the regular reserve to ensure there are funds there to pay off suppliers etc.</li> </ul> <p><u>Documentation of Changes that Can't Continue Long-term</u></p> <ul style="list-style-type: none"> <li>• Many municipalities are faced with financial constraints.</li> <li>• Important document the <b>temporary/pandemic</b> related changes that <b>aren't</b> working and why,</li> <li>• Ensures you can inform questions about longer term reduction of resources, or longer-term use of online tools instead of in person (i.e. why these things can't be permanent when push comes to save on budgets)</li> </ul>
<p><i>Did you contact MECP to discuss the impacts on your system?</i></p>	<p>Did you seek advice or support from your local office?</p> <ul style="list-style-type: none"> <li>• Contacted inspector with respect to the Annual Report and altered the process to have it submitted online with email approval from council.</li> </ul> <p>Pandemic related temporary-regulatory relief is available where flexibility is needed:</p> <ul style="list-style-type: none"> <li>• Example: temporary reduction of lead sampling within homes</li> <li>• Extension of requirements for calibration/operational checks due to distancing considerations</li> <li>• Extension for due dates for annual reports</li> <li>• Contact <a href="mailto:MDWLP@ontario.ca">MDWLP@ontario.ca</a> to discuss</li> </ul>

**Breakout**    *Electronic Records Management – Is your data a dump or a gold mine?*

**Facilitator**    **Janine DeBoer, WCWC Trainer**

*The session reviewed some of the options available to Municipalities to manage and control data with a focus on electronic record and document management systems.*

*The session involved:*

**Summary**

- *Review and discussion of the requirements of Element 5 of DWQMS 2.0 and of the MDWL/DWWP with respect to document and record control*
- *Review of currently available programs and services for controlling and maintaining data*
- *Gaining knowledge on best management practices on how other municipalities have been able to leverage electronic data management tools*

**Electronic Records Management Discussion Points**

Programs that have been used for electronic record management include:

- eRis (demo provided)
- SharePoint (demo provided)
- Intellex
- Compliance 365
- Excel
- Laserfiche
- Various In-House designs

Considerations:

- When changing to electronic records/logbooks ensure that all interested parties are contacted including the MECP
- Most municipalities have a Record Retention bylaw that must be referred to and sometimes updated when using electronic records
- The electronic data must be in a form that can be accessible to the MECP during inspections

Success Requires:

- Effective data management tool
- Engaged workforce
- Change management program
- Desire to do better

<b>Breakout</b>	<b><u>Transition to DWQMS 2.0</u></b>
<b>Facilitator</b>	<b>Marco Brunato, SAI Global</b>
<b>Summary</b>	<i>The session reviewed the SAI Global audit results from 2019 where the majority of systems completed their reaccreditation audit transitioning to DWQMS version 2.0. Trends in major and minor non-conformances to version 2.0 were identified and the suggestions on how to improve future results were discussed. A summary of the non-conformances and suggested improvements are summarized below by DWQMS Element.</i>

DWQMS Element	Non-conformances Identified / Suggested Improvements
<i>Element 2 – QMS Policy</i>	<ul style="list-style-type: none"> <li>• Three NCRs in 2019. Most related to policy not being made publicly available</li> <li>• Some had minor issues with language in the policy statement Ensure policy made available in a format <i>easily</i> communicated to the public</li> </ul>
<i>Element 6: DWS Description</i>	<ul style="list-style-type: none"> <li>• Four NCRs issued (Minors)</li> <li>• Systems typically do a really good job with this one, auditors like using this element when starting an audit to help understand the system. Helps to understand system when doing onsite audits. They like to compare to the actual system.</li> </ul>
<i>Element 7: Risk Assessment</i>	<ul style="list-style-type: none"> <li>• 12 NCRs issued</li> <li>• Most were issued because their procedure wasn't followed fully, or when the 36-month RA was completed, the new hazards were not included, or were not fully explored in the process.</li> <li>• Important to document why risks were not relevant during to process to show they were considered.</li> <li>• Version 2.0 includes big changes with the addition of the climate change review. The new risks were to be considered at the time of the next scheduled risk assessment (every 36 months).</li> </ul>
<i>Element 8: Risk Assessment Outcomes</i>	<ul style="list-style-type: none"> <li>• Linked to non-conformances seen in Elements 14 and 15 as the RA outcomes must be considered during infrastructure review and long-term forecast activities</li> <li>• Conformance with 14/15 may involve documentation of infrastructure related activities in the RA tables to show they were considered.</li> </ul>
<i>Element 12: Communications</i>	<ul style="list-style-type: none"> <li>• Five NCRs issued</li> <li>• Most related to not having the evidence that communication to the owner or to essential suppliers occurred</li> </ul>

<p><i>Element 13: Essential Supplies and Services</i></p>	<ul style="list-style-type: none"> <li>• 11 NCRs issued (Minors)</li> <li>• Related to not having supply list available or up to date</li> <li>• Or suppliers/services that were essential were not on the list and should have been</li> <li>• Lots of discussion on what supplies and services should be considered essential. Variation between how systems document these as some list everything, and other list only the supplies/services necessary for provision of safe drinking water</li> <li>• The definition of “essential” is system dependent and each system’s procedure should define this and then create the list of supplies/services based on their interpretation</li> </ul>
<p><i>Element 14: Review and Provision of Infrastructure</i></p>	<ul style="list-style-type: none"> <li>• 35 NCRs issued – Element with the third most NCRs in 2019</li> <li>• The most significant change included having to consider the outcomes from element 8 and tie them back to the review or infrastructure</li> <li>• Also included language change to once every <i>calendar year</i> (this didn’t play a big role in NCRs)</li> <li>• Most related to a failure to demonstrate the connection between Risk Assessment Outcomes and the Infrastructure Review process e.g. What do the outcomes mean for your equipment?</li> <li>• Auditors like to see tables that include a column that spoke to the review and provision on infrastructure in the RA outcome tables</li> <li>• Or reference to updating maintenance programs/schedules, or capital planning activities</li> </ul>
<p><i>Element 15: Long-term Forecast</i></p>	<ul style="list-style-type: none"> <li>• 47 NCRs Issued – Element with second highest NCRs issued in 2019</li> <li>• Most relate to not being able show how the long-term forecast program has been maintained relative to the risk assessment outcomes.</li> <li>• Forecast was not updated/current, or renewed, based on the additional risks</li> <li>• Needs to include evidence of the review in relation to the risks</li> <li>• Needs to confirm the forecast is reviewed once every calendar year (even if no changes occur) and provide evidence</li> <li>• Not traditionally audited during the surveillance audit. Auditors will do a deeper dive into conformance with this element every third year.</li> </ul>
<p><i>Element 19: Internal Audit</i></p>	<ul style="list-style-type: none"> <li>• 24 NCRs Issued</li> <li>• Most were issued because the internal audit was conducted using DWQMS version 1, and not version 2.0. No gap analysis between v1-v2, or evidence that new elements in v2 were considered</li> <li>• Other reasons were because elements were missed in the internal audit process. It’s understandable that systems may only audit some elements in a particular year, but you need to switch these up in other</li> </ul>

	<p>years to ensure they are all covered by the time reaccreditation occurs</p> <ul style="list-style-type: none"> <li>• Helps to have a clearly defined process around what elements will be covered each year.</li> <li>• NCRs raised because the same limited elements audited every year</li> <li>• Suggestion to use the top nonconforming elements mentioned in this breakout in your internal audit to ensure there are no issues in these areas (elements 14, 15, and 21)</li> </ul>
<p><i>Element 20: Management Review</i></p>	<ul style="list-style-type: none"> <li>• 14 NCRs issued</li> <li>• Previously this was the top element for NCRs issued in 2018 with the previous version of the standard</li> <li>• Issues were related to some of the required items being missed in the process</li> <li>• Also issues with missing evidence showing that the management review outcomes were communicated to the owner</li> </ul>
<p><i>Element 21: Continual Improvement</i></p>	<ul style="list-style-type: none"> <li>• This was the top element for NCRs issued in 2019</li> <li>• This element has a lot of requirements including those for Corrective Action, Preventive actions and BMP considerations</li> </ul> <p><u>Corrective Actions</u></p> <ul style="list-style-type: none"> <li>• The most common reason for NCRs was failing to properly identify the cause of the issue through a root-cause analysis. These should be done for both non-conformances and non-compliances in the system</li> <li>• Makes sure you address the cause and not just the correction</li> </ul> <p><u>Preventive Actions and BMPs</u></p> <ul style="list-style-type: none"> <li>• Preventive Actions are different that Corrective actions and more difficult to identify</li> <li>• Use the RA process to help with this. Where risks are identified, flag for consideration of preventive action. Include these in your discussions for consideration of preventive actions, and development of BMPs</li> <li>• Reminder that preventive actions just need to be considered through your process, not every item considered need to move to implementation.</li> <li>• Ex. If risks show the possibility of a leak is high due to age of equipment the outcome is to increase maintenance or inspection – this become the preventive action.</li> <li>• Many systems likely do this already, but it's not documented in a structured way to show its being done</li> <li>• Consider adding a table to the Risk Assessment to indicate linkage to Preventive Actions and BMPs</li> <li>• Similarly, use review of essential supplies for end of life equipment,</li> </ul>

- Documentation when you replace items earlier than your existing maintenance schedule
- Find ways to document the action you took with relation to infrastructure/equipment to show that you're thinking proactively
- Could use work order forms to show maintenance is proactive/preventive
- Remember: Also need to be able to show the owner the steps you're taking to be proactive



**Breakout**     **Asset Management Planning**

**Facilitator**     **Ted Joynt, WCWC Trainer**

**Summary**     *In these breakout sessions, participants took a high level look at how to make asset management work for their systems with a focus on the benefits of asset management planning and best practices. Five core framework questions were addressed to provide the foundation for many asset management best practices.*

**Asset Management Planning Discussion Points**

The main topics discussed were:

- What asset management means and the benefits,
- Best practices in asset management and How to implement an asset management program.
- Other topics covered were Identifying what an asset is and how to classify the asset, whether the asset is critical or not. What the life cycle of an asset is and what role does life cycle play in asset management.

Participants included those who had little or no experience in Asset Management Planning to those who had considerable experience of how AMP works and the role it plays. A comment that came up often was that sometimes there was a disconnect between those who administrate the Asset Management Plan and those who actually use the various assets. Everyone agreed that in order to have a successful AMP all parties involved needed to communicate.

AMP is closely tied into DWQMS (Elements 14/15, Review and Provision of Infrastructure, and development and maintenance of a long-term forecast). A question came up about the lack available training on Asset Management Planning for staff who are required to take on the task.

**Breakout**     *What's New? Ontario Watermain Disinfection Procedure*

**Facilitator**     ***Tony Santos, City of Thunder Bay/WCWC Trainer***

**Summary**     *The session discussed to revisions made to Ontario's Watermain Disinfection Procedure, published by the Ministry August 1, 2020. Participants discussed implementation of the new procedures and considerations for adopting these in the drinking water system*

WDP Revisions	Discussion Points
<i>Definitions</i>	<ul style="list-style-type: none"> <li>• Improved definitions will be helpful when implementing</li> <li>• Will require review with staff</li> <li>• Should alleviate concerns when staff overseeing final connections</li> </ul>
<i>Backflow prevention</i>	<ul style="list-style-type: none"> <li>• New requirement to use reduced pressure principle (RP) backflow preventers. Most Municipalities already using RP's so not a concern</li> <li>• Municipalities still using DCVA will need to purchase RP's and change procedures to accommodate RP's</li> <li>• Operator training will need to be conducted for moving BF devices on the same day</li> <li>• May not have staff resources to implement operators moving BF</li> <li>• Will need to develop documentation requirements ensuring that date tested, who moved the BF preventer etc.</li> <li>• SOP will need to be adjusted to accommodate change (currently must be re-tested if moved)</li> <li>• Consider how new requirements will be communicated to those performing testing               <ul style="list-style-type: none"> <li>• Some municipalities have operators with BF testing licence, some have internal staff licensed (plumbers) and others contract it out to plumbing companies etc.</li> </ul> </li> <li>• Consider the new requirement related to responsibility for provision of BF prevention devices.               <ul style="list-style-type: none"> <li>• Some systems are supplied by the municipality, for others it's a requirement for contractors to supply during capitol projects</li> </ul> </li> </ul>
<i>Microbiological Samples for New Mains</i>	<ul style="list-style-type: none"> <li>• Most municipalities were not in favor of allowing non-certified operators to collect and verify samples on new mains, some said "not a chance"</li> <li>• Some municipalities would allow city staff (inspectors) take samples</li> <li>• None indicated that they would allow contractors to take samples</li> <li>• The Operating Authority is responsible for documentation requirements               <ul style="list-style-type: none"> <li>• Consider how the operating authority will be able to ensure that sampling and documentation completed correctly</li> </ul> </li> <li>• Difficult to control if non-certified persons collect samples</li> </ul>

WDP Revisions	Discussion Points
	<ul style="list-style-type: none"> <li>• How can operating authority be sure that samples were taken where they said they were</li> <li>• Participants expressed concerns relating to documentation as contractors do not have access or training</li> <li>• Seems like this section is taking a step backwards in operator responsibility</li> <li>• Operators are trained on sampling protocols, documentation etc. have confidence in results</li> <li>• Some municipalities already had some form of mapping system to indicate where samples were taken, some used printed maps, some used hand drawn maps, and some used descriptions. Will need to review procedures to ensure that schematic is included (to meet documentation requirements) and provide staff training</li> </ul>
<p><i>Connections Less than one pipe length</i></p>	<ul style="list-style-type: none"> <li>• Like the idea that final connections do not need to be overseen</li> <li>• Will require communication with contractors of final connections so that sampling can occur</li> <li>• Some participants indicated that they were concerned that final connections may not be kept sanitary if not overseen</li> <li>• The WDP still requires operators to take samples, operate valves, flush, just easier to oversee the connection</li> <li>• If not overseen by an operator, will slow the project down by a day at least</li> <li>• Like the new documentation requirements, makes it easier for operators</li> <li>• Not all connections are connected to a valve, may be cumbersome to keep it isolated</li> <li>• Will require SOP review and amendments to allow for connections to not be overseen</li> <li>• Will require communication with contractors to ensure that they understand the process. Who approves the connection without oversight will need to be discussed</li> </ul>
<p><i>Connections greater than one pipe length</i></p>	<ul style="list-style-type: none"> <li>• Liked the idea that an exception can be used without going to the MECP for an exception to the standard</li> <li>• Systems will need to develop documentation if exemptions are used</li> <li>• Systems will require communication with engineering, contractors etc. on how/when an exemption can be applied</li> <li>• This will require training of operators to oversee the connection</li> <li>• SOP's will need to be implemented or revised</li> </ul>
<p><i>Placing a new main into service</i></p>	<ul style="list-style-type: none"> <li>• Not much comment, everyone understood that valves, flushing etc. must be completed by certified operator</li> </ul>

WDP Revisions	Discussion Points
<i>Planner Watermain Inspection and Cleaning</i>	<ul style="list-style-type: none"> <li>• Discussion on how to ensure that an inspection tool (from contractors) are only used on drinking water, would need to be put in tender documents and have trust in contractors. This may be difficult to control. Systems will need to have procedure in place and training for staff</li> <li>• Disinfection of equipment is not an issue, already being done</li> <li>• Most municipalities had internal processes to separate tools etc. used for water or wastewater, separate cages for tools, paint tools green or blue, separate trucks, separate crews</li> </ul>
<i>Live Taps</i>	<ul style="list-style-type: none"> <li>• Most liked the idea that there were options for oversight by an operator, provides clarification to the regulations</li> <li>• Larger systems would continue to use certified operators to perform wet tapping</li> <li>• Some indicated that they would continue to isolate the mains for tapping so that operator oversight would not be required</li> <li>• May be difficult to oversee due to resources constraints</li> <li>• Would require SOP reviews to include oversight option</li> <li>• Would require communication and training with contractors</li> </ul>
<i>Returning isolated watermains to Service</i>	<ul style="list-style-type: none"> <li>• Some municipalities indicated that they would continue with current practice, i.e. regular flushing and maintaining residual</li> <li>• Most liked the idea that a process could be put in place, as it saves staff resources for flushing.</li> <li>• There was some questioning as to when a watermain becomes the responsibility of the water authority, further training may be required to clarify this issue (primarily on subdivision work that is done in multiple stages).</li> <li>• Would require procedures on return to service, including time frames, procedures, training of staff, documentation ensuring that contractors or builders do not operate valves etc. on attached mains where the beneficial owner is the water authority etc.</li> <li>• Requires development of documentation for return to service</li> <li>• May want to engage local MECP inspectors and health unit</li> </ul>
<i>Categorization of watermains</i>	<ul style="list-style-type: none"> <li>• Training of staff on changes is important as all watermain breaks start as category 2 and move to cat 1 (with OIC oversight) – may be difficult at first</li> <li>• OIC required to be on site for the entire procedure especially on big breaks that may include multiple crews (to keep it as a cat 1) – may be difficult to do as requires additional resources</li> <li>• Will need to devise procedure to transfer responsibility from one crew to the next</li> </ul>

WDP Revisions	Discussion Points
<i>Public Agency Notification</i>	<ul style="list-style-type: none"> <li>• Most indicated that Health units did not exercise their rights to be notified of watermain breaks under the standard, only wanted notification based on risk.</li> <li>• Northwestern Ontario health units have exercised their right to be notified for cat 2 breaks, most issue BWA's (self imposed) or imposed by health unit</li> <li>• Procedures will need to be developed to ensure that SAC is notified when BWA is issued, all documentation will need to be completed (verbal notification, written form 2a, resolve 2b)</li> <li>• SAC will issue AWQI for BWA when reported</li> <li>• Regardless of who issues BWA or type (self imposed or health unit) it must be reported to SAC</li> <li>• Will require training for staff especially in areas where they are rare</li> <li>• New process has made public agency notifications cumbersome (more paperwork)</li> <li>• BWA is not an adverse under the regulations, SAC should develop a different category for these</li> </ul>
<i>Documentation Requirements</i>	<ul style="list-style-type: none"> <li>• Most indicated that the documentation requirements listed are already covered or could be covered in existing records</li> <li>• Will require cross checks with current forms and mandatory lists</li> <li>• Will require training for staff on changes</li> </ul>
<i>Overall Comments</i>	<ul style="list-style-type: none"> <li>• Changes well received and will be helpful moving forward</li> <li>• Not all changes will be utilized in all organizations</li> <li>• Most indicated that DWQMS link is between Document and Record Control and Competencies</li> <li>• Staff will need to be trained prior to implementation</li> <li>• Some exceptions may cause disputes between contractors (non-certified) and the operating authorities</li> </ul>

## Breakout *Change Management*

**Facilitator** *Andre Pepin, WCWC Trainer*

### **Summary**

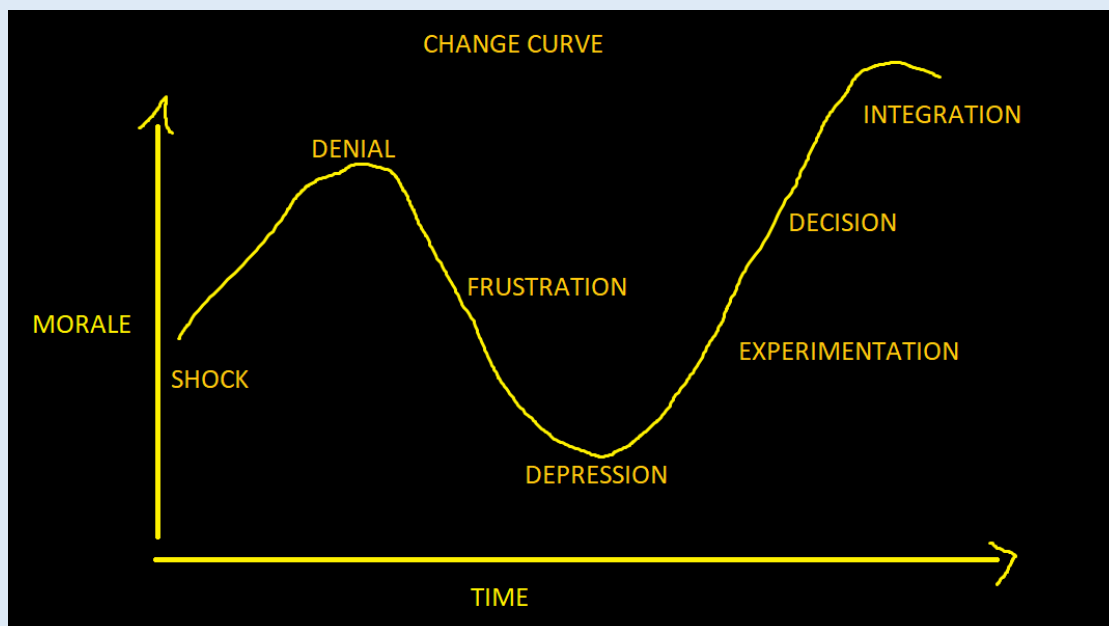
*In this breakout session we discussed the stages of emotions people generally follow when experiencing change. The display of emotional stages during change is commonly known as the “Change Curve” and is known to be closely related to the emotions experienced when feeling grief. There are many versions and variations of the curve to be referenced, however they all follow a similar path. The advantage to knowing about the Change Curve (Figure 1) and its steps, is the ability to better relate with the people experiencing change. It can be a very useful tool for predicting how people are going to react when implementing a change. Note, not everyone is the same and can find themselves starting at different parts of the curve. The participants were eager to share how they could either find themselves or their peers along the curve.*

## Change Management Discussion Points

Many different examples were discussed with respect to change within our organizations and the pandemic. Some of the change participants were experiencing:

- Difficulties and advantages of working from home.
- Dealing with staff opinions and fears of the pandemic.
- The sometimes-quicker adoption of technologies today as opposed to 10 years ago.
- Communication between staff has either increased or decreased.

Figure 1: Change Curve



## Change Management Discussion Points

Other key take-aways highlighted during every breakout:

- Implement clear lines of communication when implementing change. Do not change just for the sake of change. Communicate the purpose and expected results.
- Seek opportunities for change after a small set-back or disagreement. Use the disagreement to investigate the “best way”.
- Storming and norming. Healthy debate and disagreement are good for the formation of a committee. It shows dedication and passion towards a particular subject.

Conclusions

- Based on feedback it was a timely breakout topic, due to the times we were in currently. The change curve is a good reference to use when navigating change, organizationally or personally. Many participants had never seen the displayed this way. There was interest in exploring other management type subjects.