

Operational Succession for Water & Wastewater Utilities

A Primer for Understanding and Local Discussion

Overview

Sustainable staffing of regulated utilities requires care, planning, and effort. This primer is for Alberta-based utility owners, managers and supervisors/lead operators of water and wastewater facilities and systems.

Emerging ideas about operational succession are outlined, including what it is, why it's important, and key relationships, roles and responsibilities. The primer can facilitate local conversations, including the local governance and utility management planning.

This primer's scope is an introductory summary designed for busy people. It shouldn't be interpreted or used as a comprehensive treatment. A broad review of available practices has been commissioned, with attention to public utilities. It includes recognized practices suitable for small and larger utilities.

Internationally recognized succession practices have been adapted for a *made in Alberta* approach to help owners meet their obligations in law; to help management focus on meaningful succession; and to help the front-line engage succession as basic to safe water and wastewater operations.

Operational Succession – What it Isn't/What it Is

First impressions of succession may be about special processes reserved for only the most senior people in an organization. Other impressions may be about processes geared to groom a pool of people to fill in for managers or executives on a step in or step up basis.

Leading authorities discuss succession planning and management done well as

being proactive emphasizing *the importance of developing internal talent to meet current or future talent needs of the organization*.¹ These are common management succession practices. They're also important, but they're not the focus of this primer.

Operational succession is a particular form of technical succession planning. Operational succession links an owner's oversight duties in regulation, in facilitative ways² with senior management's responsibility to ensure a suitable process is in place (i.e., *execution*), and ties it to an operations responsibility to engage in the process (i.e., *doing an ongoing living, systematic process at the workforce*).

Owners assure a reasonable process is in place and being used; management ensures the process is useful and being used effectively; and operations personnel use and make the process meaningful as negotiated through dialogue about the local situation.

Technical succession planning has been practically defined as *any effort designed to ensure the continued effective performance of an organization, division, department, or work group by making provision for distilling, preserving, maintaining and communicating the fruits of the organization's institutional memory and unique experiences over time*.³ Operational succession:

- 1) combines technical succession planning with using a knowledge management focus (i.e., making *know how* accessible) and,
- 2) the governance oversight to discern its:
 - a) aligned with regulatory obligations and
 - b) being done by management and front-line staff diligently and appropriately as part of a package of activities to address what is commonly becoming referred to, including in utility sectors⁴, as *human capital risk*.⁵



As those directing and those managing are becoming more aware about the fiduciary, business performance, and program/operating impact of knowledge and skills loss due to attrition, driven largely by retirements of long-serving personnel with critical *know how*, more attention is being paid to oversight and management about *key* and *vulnerable* positions.

There is no *silver bullet* to operational succession. It can be done many ways. It can and should be practical. A risk-management approach is recommended. Insight and foresight, especially informed by notable Canadian experiences, could predictably play a role.

That is, insights about operational capacity and continuity as informed by the Walkerton, Ontario⁶ and North Battleford, Saskatchewan⁷ public inquiries in particular, could be used to establish that a reasonable person ought to have been able to foresee the impact of operational succession on public safety. Simple tried, tested, and award-winning succession practices, sensible to Alberta smaller communities can be used collaboratively or in a self-diagnostic format when there is a sole person.

Craft Process and Continuity

Before getting into the process, it's useful to consider water and wastewater operational succession, especially for smaller centres, through the lenses of the blacksmith's apprentice. One wouldn't reflect back and consider it reasonable that a local blacksmith give the community two week's notice before retiring out. Neither the blacksmith's operation, nor early western communities, would have survived without responsible succession. Blacksmith work was understood to be a craft skill that took the proper time, care, observation, and practice to learn as core methods *along with* a local community's needs. It's part of our community stewardship heritage (e.g., see museums in towns of Lacombe or Sexsmith).

The modern water or wastewater operation is not unlike that of the local blacksmith shop. Each is unique. Each is effectively its own system⁸. Each has evolved overtime with initial commissioning and various shut downs, tie-ins, and upgrades. No two water or wastewater

utility facilities or systems in Alberta are identical. Ongoing safe and responsible operation demands continuity. Continuity requires planning, learning and sharing of responsibility.

Many communities are learning too late it's the long-serving Certified Operator(s) who is the keystone binding systems together. The operator(s) involved with consulting engineers and contractors during commissioning or upgrades. The operator(s) who incrementally learn over time the types and optimal ways to tie-in new process technologies to *their* facility or system. Much of the practical *know why*, *know what*, and *know how* of local facilities and systems reside within the mind of the operator. This is referred to as unwritten or *tacit knowledge*.

Experience illustrates many owners, managers, and engineers under-estimate the breadth and depth of critical knowledge necessary for safe, effective operations; they also don't understand operations issues or cultures and vice versa.⁹ Lack of shared understanding is a barrier to local learning and operational continuity. It's a weak link in Canada's multi-barrier approach to safe drinking water.

Succession contingencies for continuity not only envision attrition due to planned retirements, they also incorporate contingencies for catastrophic events, unexpected illness (e.g., debilitating influenza), disability/chronic illness, or sudden death (e.g., motor vehicle trauma, heart failure, stroke, aneurism, etc.) of persons in *key* and *vulnerable* positions.^{1,3}

Getting Started

Adaptable succession practices for Alberta water and wastewater utilities are informed by recent Canadian governance work co-led by the Institute for Corporate Directors (ICD) as well as the Canadian electrical utility and the international atomic energy sectors. Getting started has been distilled to a three part process, with a companion three step process for retaining critical knowledge. For users in smaller Alberta communities, it should be noted similar processes could be applied for other critical local health care and essential public service roles.

Part I – Committing

So, why care when so many other local issues are competing for attention? The best available Canadian information to-date indicates the most common barrier to *human capital risk* is a lack of clarity and agreement at the governance and senior management levels about roles, relationships and responsibilities.

A credible, recent 2011 Canadian study undertaken by Knightsbridge and the ICD determined some 62% of large, not-for-profit participants are concerned their boards don't believe they're responsible for human capital oversight **at all**.⁵ The main underlying issues appear to be that CEO/CAOs and management teams may feel threatened when the governance function gets too involved with human capital issues and risks. Directors also hold the belief that the CEO/CAO is their sole employee, confusing lines of reporting with other binding oversight duties.

This recent finding is, and ought to be, serious cause for concern especially for the *directing minds* of Alberta water and wastewater utilities, as detailed in the *Environmental Protection and Enhancement Act* (EPEA) and other regulation. Within the scope of legally-binding commitments, owners of water and wastewater utilities have a duty of care, which suggests as a *minimum standard*, they **oversee** that processes are in place and being followed, to assure human capital risks of key and vulnerable positions are mitigated. This is core to the operational succession commitment.

More about the specific Alberta requirements has been detailed in *Taking Care of Your Drinking Water and Wastewater: A Guide for Members of Municipal Councils*.¹⁰ Local governments are advised not to be complacent in committing about operational succession. If in doubt, never delay consulting with appropriate counsel.

A 2004 critically-reflective analysis of the Walkerton Tragedy illustrates that while multiple levels of government shared responsibility for the conditions which enabled the waterborne illness to occur, a higher-level of government controlled the scope of public inquiry. It's been well-argued that a higher-level of government's ability to frame inquiry scope is why the official narrative of Walkerton

is largely recounted as a local failure coupled with incompetence and criminal misconduct by management and operations.¹¹

So, it's in the local interest to adopt operational succession as rooted in safety and accountability, to document said commitment within a recognized governance process (e.g., planning or risk management policy, bylaw section, Board policy or resolution, etc.), to use it, and to see its being used as intended as an ongoing process. This commitment to operational succession could be integrated within emerging Drinking Water Safety Plan (DWSP) processes.

Part II – Assessing Risk¹²

The suggested human capital risk process for operational succession has been in use within the nuclear power industry since 1999 and noted for being adaptable across sectors.¹² It's a simple three question process of asking: *What? So What? Now What?* The three core questions every utility ought to be asking is:

- Specifically, what knowledge is being lost? (*What?*)
- What are the operational and business consequences of losing each item of knowledge? (*So What?*)
- What can we do about each item (*Now What?*)

The first step is to conduct a *Knowledge Loss Risk Assessment* by determining which people and/or positions have the greatest potential of knowledge loss and impact. It's done by a ranking of a) time until retirement and b) criticality of a position. Leading organizations have found lawful, voluntary ways to regularly survey employees about their plans to retire. Sufficient trust is required to assure the information is used for operational continuity and not individual staffing decisions. So, who is nearing retirement? How do we plan for that? Voluntary reporting of retirement information is not binding, but guiding as part of a shared commitment. Where retirement aspirations are not voluntarily disclosed, an average default age is used for planning.

The second step is to identify what the unique knowledge or skills are of the people who plan to leave. This takes the form of inquiring generally such, as: *What knowledge or know how will we miss most when you leave?* It involves *task* questions including how to conduct specific tests, document required compliance information, or operate certain pieces of equipment. It involves *fact/information* questions to generate lists of key contacts, locations of critical supplies and spare parts, maps, manuals, compliance documents, undocumented tie-in/upgrade *know how*, etc. It involves *pattern recognition* questions about lessons learned, insights about what is likely to occur based on past performance of the facility or system, and how to troubleshoot, etc.

Informed by a job's specific content, risk lenses are applied to the knowledge loss. Four key questions should be considered:

- What is the relative *importance* of this knowledge?
- What is the relative *immediacy* of knowledge loss?
- What is the *cost* and *feasibility* of recovering the knowledge, if lost?
- How difficult is it to *transfer* this knowledge?

Following this inventory of operational knowledge and insight, decisions can be made about priorities, including which issues to ignore, what requires immediate action, or what could be redesigned, reconfigured, or engineered out.

It's noted in the review work and self-reports from the field in Alberta that cultures of *hoard and protect* about critical operations knowledge still persist among some. It's a shared effort to help change attitudes and create insights to instill the importance of operational succession as core to safety for Albertans.

Knowledge Loss Risk Assessment¹⁴

$$\text{Attrition Risk Factor} \times \text{Position Risk Factor} = \text{Total Risk Factor}$$

Attrition Risk Factor – Projected retirement dates are assigned the risk factor

5 – within current or next fiscal year; 4 – within 3rd fiscal year; 3 – within 4th fiscal year; 2 – within 5th fiscal year; 1 – within or greater than 6th fiscal year

Position Risk Factor

5 – Mission-critical knowledge/skills. Knowledge undocumented – unique, no duplication – requires three to five years of training/certification/applicable experience

4 – Critical knowledge and skills. Some limited duplication exists at other plants/sites and/or some documentations exists – required two to four years of focused training/certification/applicable experience

3 – Important, systematized knowledge and skills. Documentation exists and/or other personnel on-site possess the knowledge/skills

2 – Proceduralized or non-mission critical knowledge and skills. Training programs are current and effective and can be completed in less than one year

1 – Common knowledge and skills

Total Risk Factor

20-25 – High Priority – Immediate Action Needed. Specific replacement action plans with due dates will be developed to include: method of replacement, knowledge management assessment, specific training required, on-the-job training/shadowing with incumbent.

16-19 – Priority – Plans should be established to address method and timing of replacement, recruitment efforts, training, shadowing with current incumbent.

10-15 – High Importance – Look ahead on who the position will be filled/work will be accomplished. NAIT/related program recruiting, direct-entry from community, training programs, process engineering, reinvestment.

1-9 – Important – Recognize the functions of the position and determine the replacement need.

Part III – Stewarding Critical Knowledge

Once risk is assessed, *Now what?*, decisions can be implemented. This will likely take the form of multiple practical processes. In some cases it involves documenting the locations of the facility or system approval(s) as well as other key paperwork, procedures, key contacts, checklists, inventories, etc., and developing a

regularized operations program within a *know your own system* (KYOS) approach to drinking water safety.

A novel, practical, and cost-effective way to document the more intricate, undocumented knowledge of a local operation could come from videotaping *point-of-view* narration of staff walking through what they do, why they do it, and why it's important to do. Low-cost, hands free, point-of-view (POV) digital video helmet cameras can be obtained from a local or chain consumer electronics stores such as *The Source*, *Best Buy*, or *Future Shop*, or they can be brought in from specialty stores like *Vistek* or *JB's Power Centre* in Edmonton or Calgary.

Stewarding critical knowledge sometimes involves determining what things can be

engineered out or otherwise optimized. Some small central Alberta communities have reported formalized collaborations of operator consortia, which include cost-sharing and shared remote monitoring systems to optimize the use of skilled Certified Operators. At least a few regional commissions are known to be engaged in planned technical succession, bringing on operations staff from the local area and who are likely to stay in the local area, to obtain provincial certification and learn from long-service, lead operators.

Stewarding also involves ongoing monitoring and evaluation by management as well as oversight by the governance function of the owners. This helps assure the local operations succession process remains responsive, useful,

and used. Self-reports from across the province indicate this may become more important as the idea that owners and management can continue to rely on very long-service operations staff as in the past appears to be changing.¹³

Concluding Thoughts

Operational succession is a combination of personal awareness, culture change, leadership commitment at all levels, process design, and discipline to implement, engage and evaluate. Done well, it's a thread that weaves together an adhering to regulation, while assuring continuity in safe, efficient and effective water and wastewater utility operations.

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This primer has been independently prepared by M.J. Aherne, CMC. Mr. Aherne is a Certified Management Consultant (CMC) with a practice in workplace learning, talent-, and knowledge-management of clinical, engineering, operations, and other mission-critical staff; with special skills collaborating with rural and remote professionals in Canada's 13 provinces and territories.

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