



Building Capacity

Future proofing your asset management program
through Knowledge and Skills Development

Jeff Bonnell, PEMAC
November 09, 2023



PEMAC Asset Management Association of Canada



PEMAC is a Canadian not for profit association enabling excellence in maintenance, reliability, and asset management through collaboration, applied learning, and leadership

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pemac.org



Education and Career Development



[Maintenance Management Professional Program](#)



[Asset Management Professional Program](#)



[Certified Asset Management Assessor](#)



[Leveraging Municipal Asset Master Data](#)



[Business case, funding](#)

Events and Knowledge Management



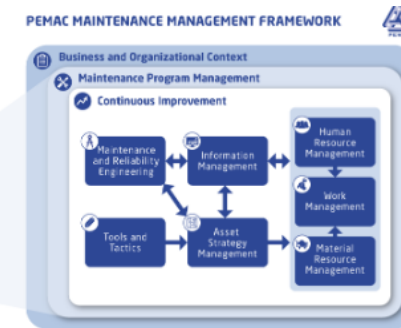
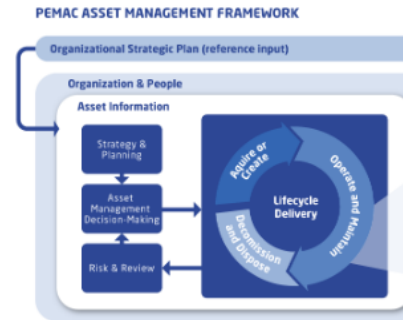
[The Premier Asset Management Event](#)



[Summer 2023 Issue of PEMAC Now](#)



[Learning library \(incl webinars, past conferences, and more\)](#)



[The PEMAC Body of Knowledge](#)

Partners and Collaboration



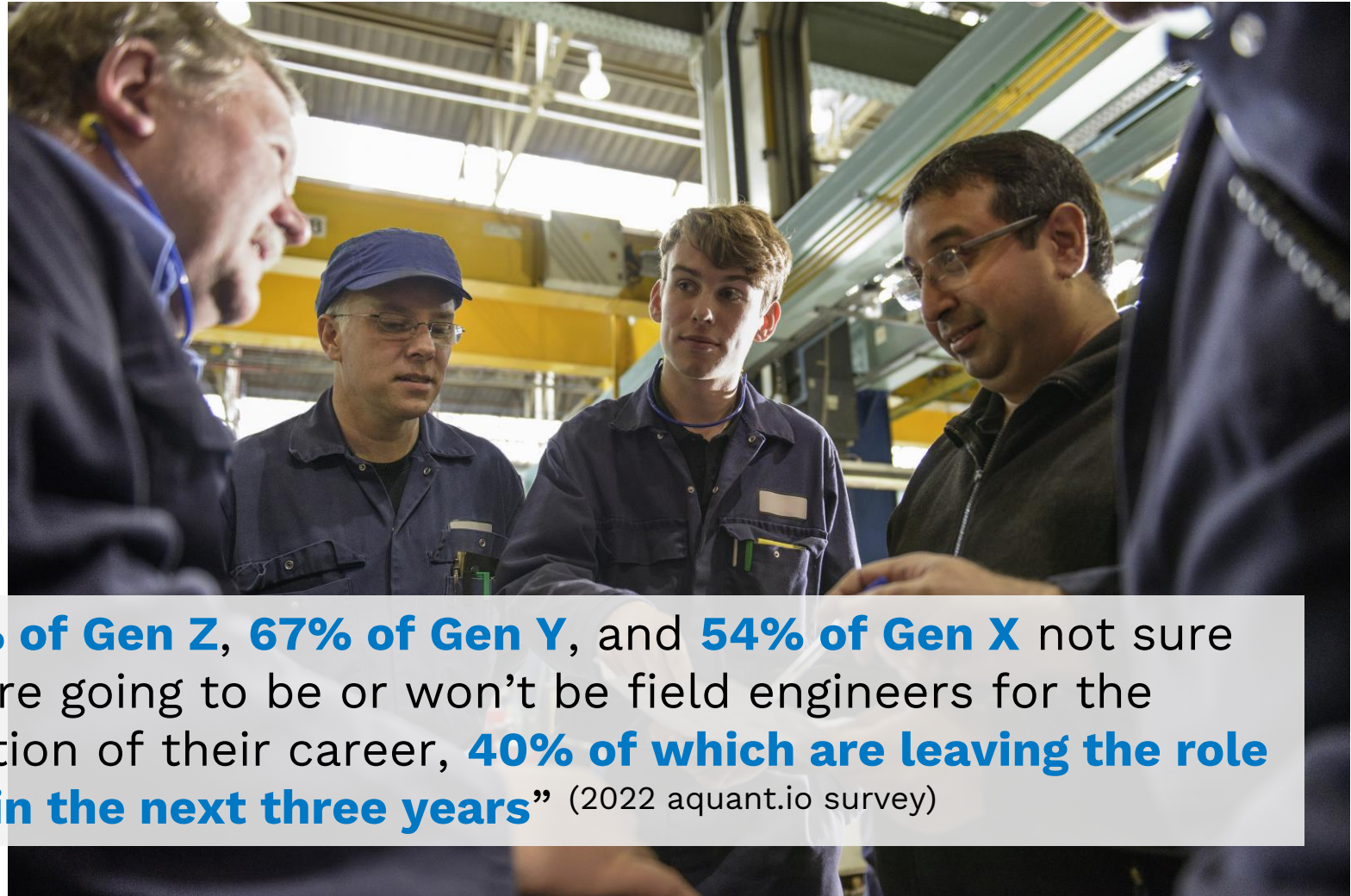
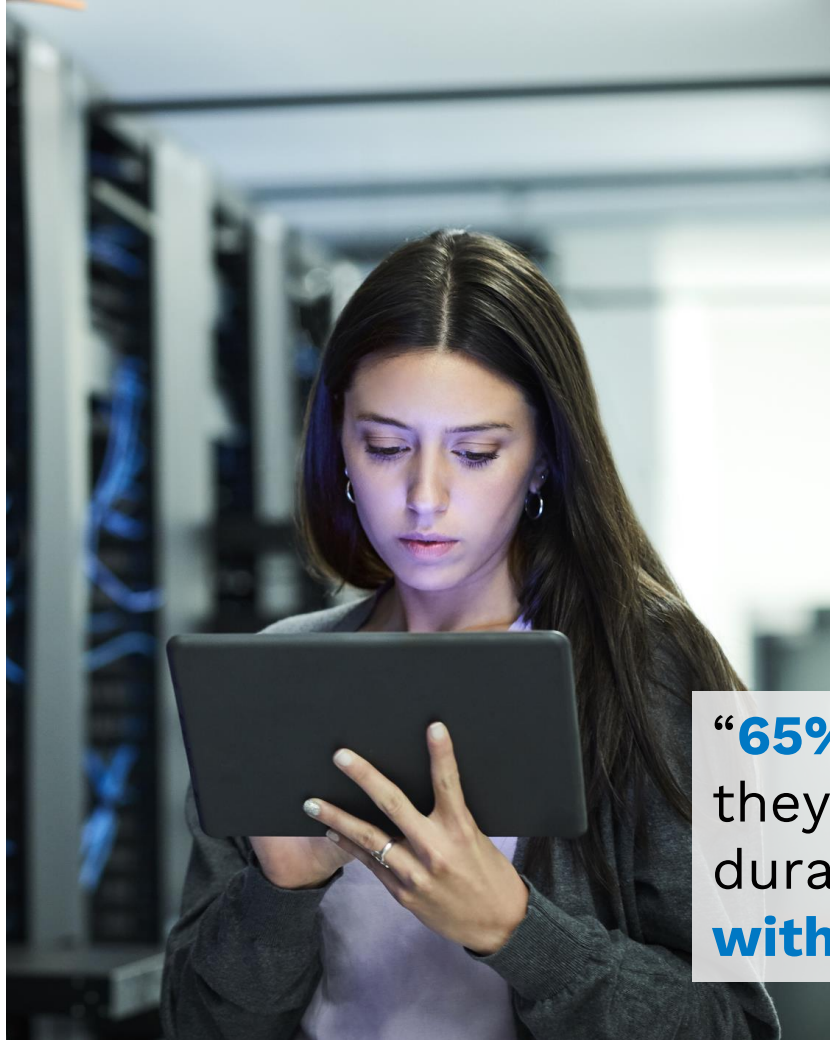
GFMAM
Global Forum on Maintenance & Asset Management



WPiAM
World Partners in Asset Management

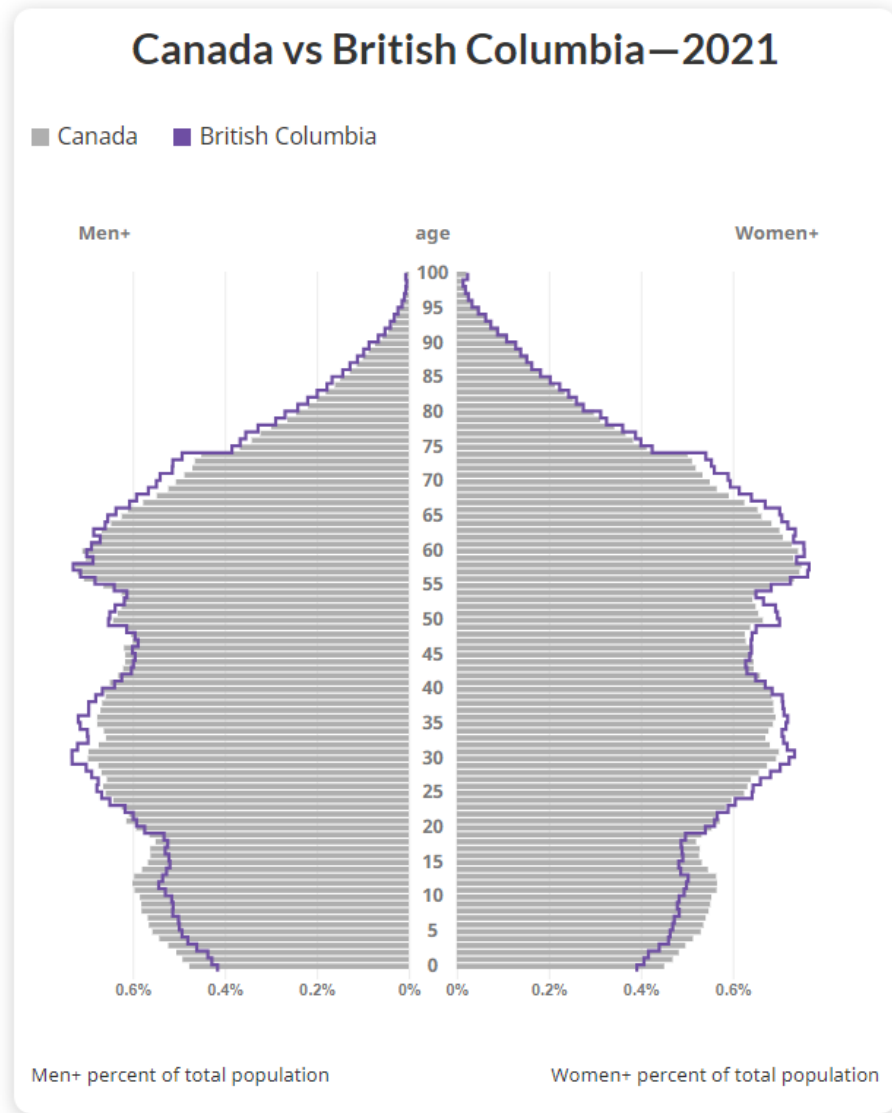


Building capacity in people; **educate, enable, and empower** individuals & teams



“65% of Gen Z, 67% of Gen Y, and 54% of Gen X not sure they’re going to be or won’t be field engineers for the duration of their career, **40% of which are leaving the role within the next three years**” (2022 aquant.io survey)

What does the demographic pyramid look like for your organization?

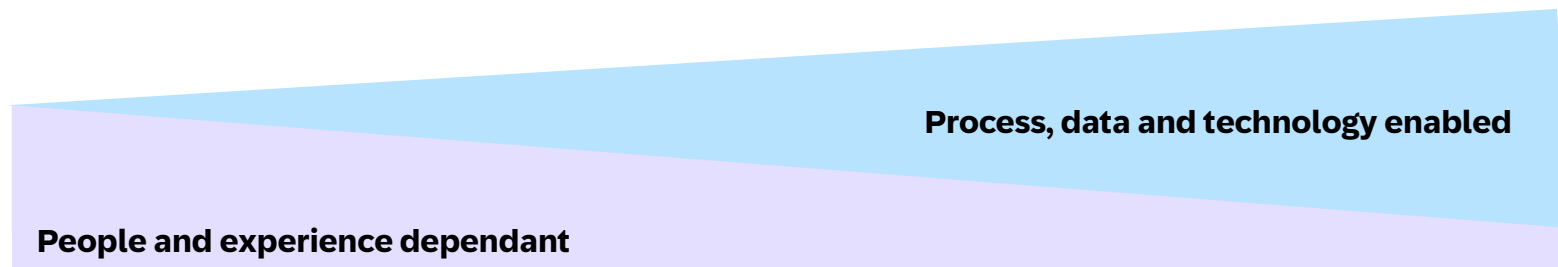
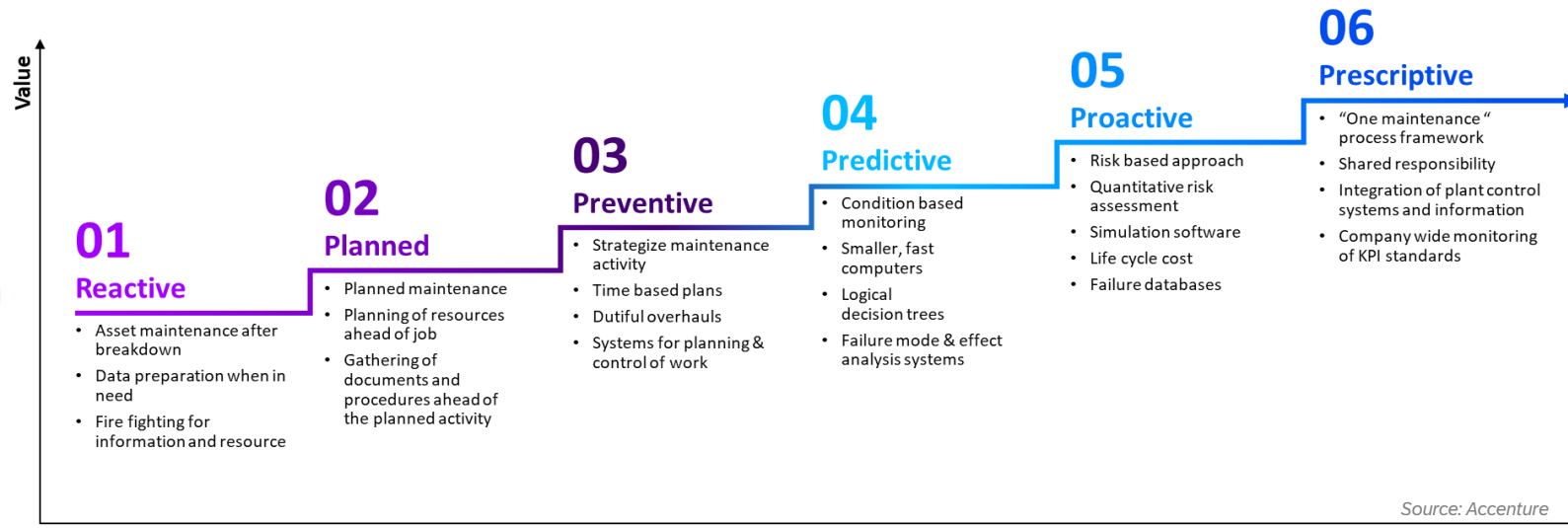


- Cost per maintenance resolution significantly higher (20%-70%) for bottom 20% of performers vs. top 20%
- Tailor training and enablement to:
 - Current asset management maturity
 - Organizations' demographic pyramid, needs, and ambitions
 - Local market conditions
- Technology is important today; increasingly critical in the future
- Business networks important to address skills and resource gaps; amplified by digitalization, automation, equipment as a service, AI

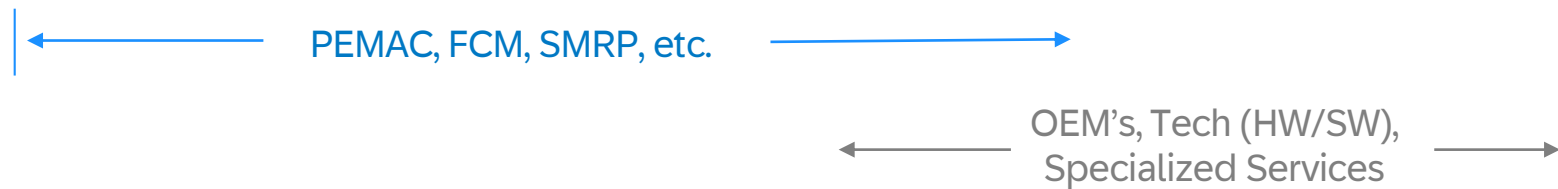
Building Organizational Capacity – People, Processes, and Technology

Considerations for training and enablement programs

Can you measure maturity in your organization?



Agility to adapt to changing operating context



Where do I start?

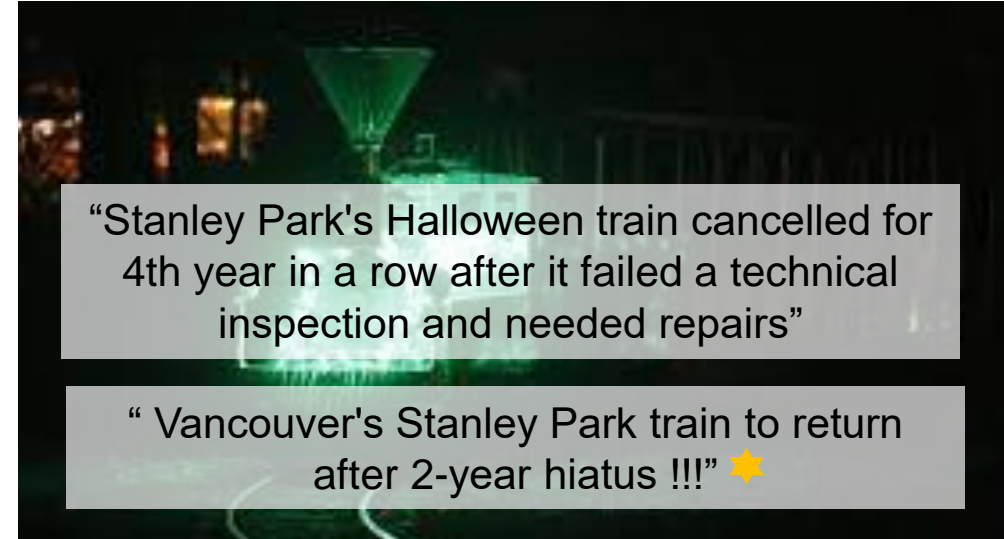


Maturity, capability, and readiness assessment

- FCM [Asset Management Readiness Scale](#)
- [GFMAM Guidelines](#)
- Specialized Professional Services Firms (\$). Standards based/bespoke

Establish metrics and KPI's to measure current situation and provide the baseline to track progress

Getting the basics right matters!



“never mistake activity for accomplishment”

Jack Welch – former GE CEO

Building Capacity

The Basics to Move from Break/Fix Mode



**Asset
Criticality**

**Asset
Management
Strategy**

**Maintenance
Plan
Optimization**

**Master Data
Quality**

**Work
Execution
Management**

**Asset
Reliability
& Inspection**

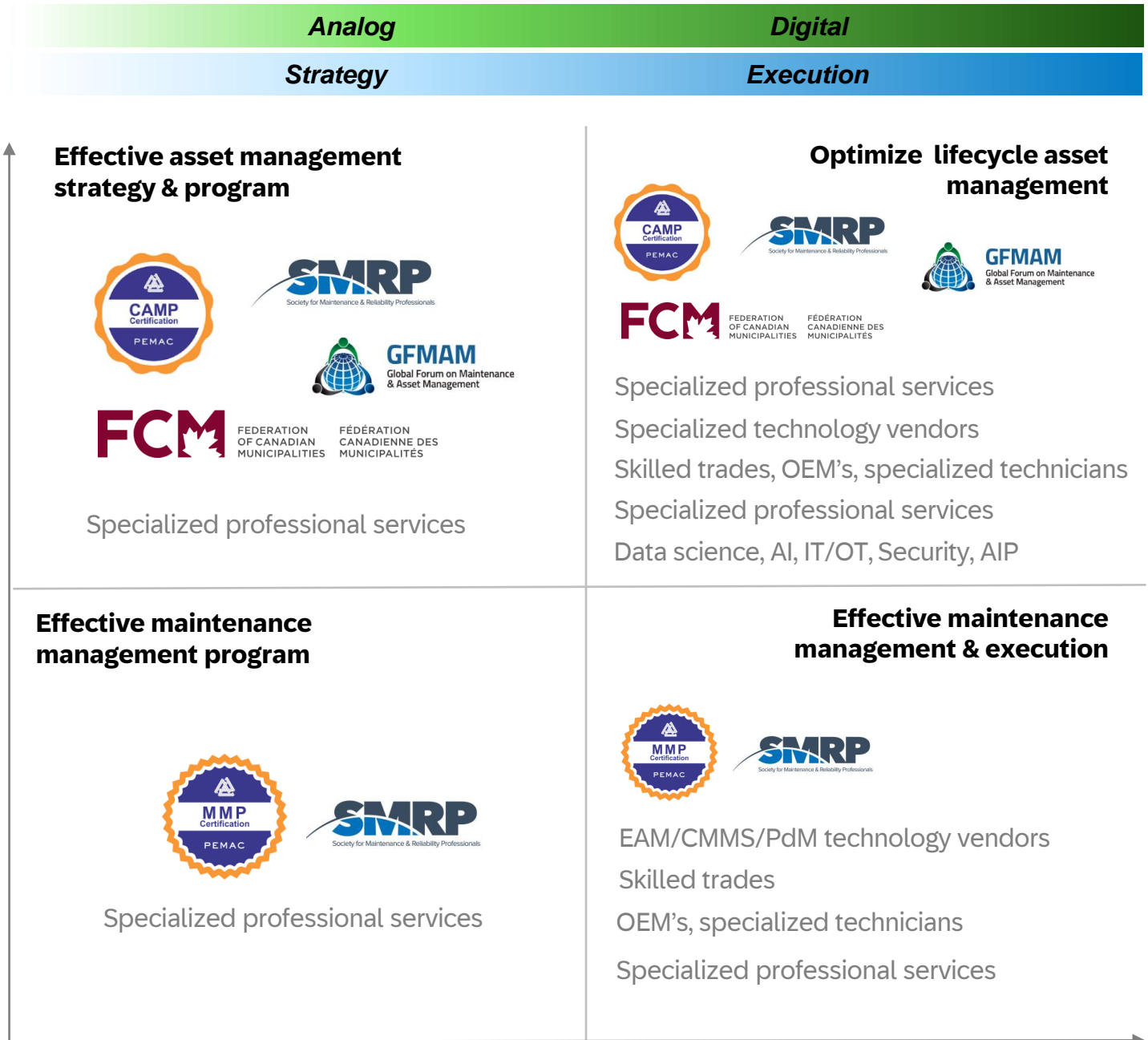
**Analytical
Decision-
Making
Capability**

**KPIs and
Performance**

Simple resource guide (not exhaustive)



Program
Management
capacity



Technical capacity to execute

Building Capacity

Key considerations and digital enablers for the future



**Asset Health
Monitoring,
Anomaly
Detection**

**Asset
Investment
Planning**

**Remote &
visual
inspections**

AI

**Edge
computing
IT/OT**

**Connected
Worker**

**Business
Networks and
Collaboration**

**Mobility
AR/VR, Visual
Work
Instructions**

**Advanced
analytics,
data
visualization**

Beyond the basics

Integrated Asset Management and Asset Investment Planning (AIP)

- Capex/Opex Optimization – reduce Totex by 5% and reduce risk
- Align asset investment and asset management strategy with organization objectives
- Resiliency and agility - operating context continually changing (climate, budget, market forces, supply chain, ...)
- Closed loop: Asset investment planning, capex and opex plan, asset performance management, monitor, improve



Beyond the basics

AI and Gen AI

Semi-automate criticality analysis, FMEA and RCM to generate and implement maintenance recommendations

Generate **optimized** asset investment plans, maintenance strategies, maintenance plans and tasks

Asset health monitoring

- Anomaly detection, new algorithms, virtual sensors
- Computer vision, AGV's, drones to automate inspection mgt. (roads, veg mgt, etc.)

Leverage GenAI, NLP to **accelerate knowledge transfer from and new employee enablement**

- Train models on maintenance/work/reliability history
- Augment task execution with AR/VR guidance



Beyond the basics

Business Networks & Collaboration



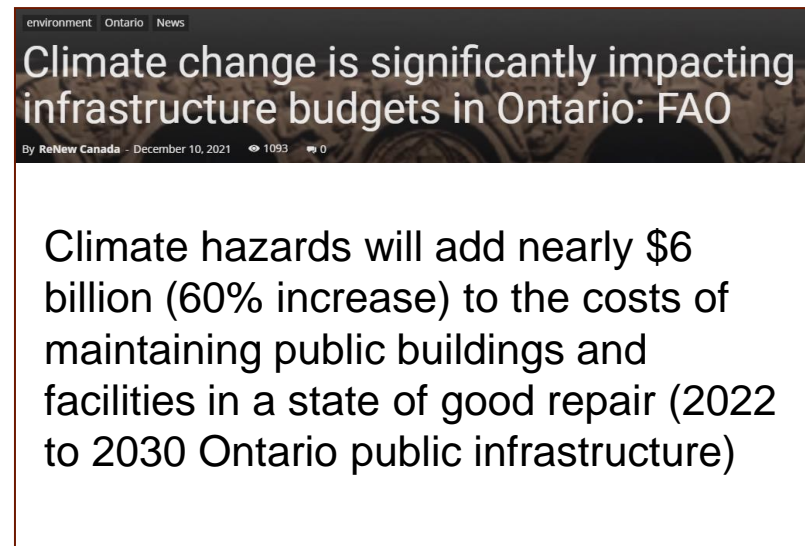
Engage **OEM's and independent service providers** address skills and capacity gaps for complex and specialized assets

Enable “**equipment as a service**” business models to access new innovations

Learn from peers and communities of practice; **share** knowledge and resources to **scale**

Planning for the future

Agility and resiliency when the operating context continually changes



Why invest to build asset management capacity in your organizations?

The cost to perform service/maintenance 20% to 70% higher for less proficient employees; impacts costs, response times, schedules, SLA's

Engaged employees – easier to attract, retain, and perform better

Sustainability and circular economy; lower energy costs, reduced leak rates, reduced fuel consumption and emissions, longer asset life, reduced and more predictable parts and consumables usage

Agility to adapt asset investment plans and asset management strategies to changing operating context (climate, economic, regulatory, ...)

Scale capabilities through collaboration with your business network; OEM's, service and maintenance partners



Next Steps

Join a community of practice, become a member

Attend local chapter or virtual events and build relationships with peers

Leverage expert (often free) knowledge

Subscribe to LinkedIn Live sessions, webinars, post conference presentations, blog series, ...

Host internal knowledge sharing and enablement (Scale from one to many)

- Host formal enablement sessions (virtual and in-person); invite experts
- Regularly share progress, updates, what's new, available content, training, and more with internal stakeholders
- Develop internal KB of content, recordings and more available on-demand
- Report on progress against goals to ensure continued support

Connect with your business network for support

Leverage the expertise and resources from PEMAC, FCM, SMRP, peers (other municipalities), consultants, and vendors



Thank you.

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Appendix

Resources that can help you



Maintenance Management Professional Certification Program

[Overview of Courses](#) [MMP Certification](#) [Features and Benefits](#) [Enroll Now](#) [Success Stories](#)

[Download the brochure](#)

[Get Started with MMP](#)

The Maintenance Management Professional certification program focuses on the tools, techniques, strategies and skills necessary for effective management of a business's existing physical assets. Graduates have the knowledge and skills to drive improvements in uptime, production capacity, equipment reliability, safety, environmental compliance, economic life of assets, return on investment and effective communication between departments.

Teams of PEMAC member subject matter experts have developed and maintain the MMP program curriculum. PEMAC qualifies the instructors and authorizes teaching institutions to offer the program.

The Courses

+ Module 1 – An Integrated Strategy for Maintenance Management

(15 hours)

+ Module 2 – Production and Operations Management for the Maintenance Manager

(30 hours)

+ Module 3 – Human Resources Management for the Maintenance Manager

(30 hours)

+ Module 4 – Financial Management for the Maintenance Manager

(30 hours)

+ Module 5 – Maintenance Strategy Development – **New Course** -

(30 hours)

+ Module 6 – Maintenance Work Management

(30 hours)

+ Module 7 – Maintenance Information Management

(30 hours)

+ Module 8 – Capstone Project

It is recommended that Module 1 be studied first and required that Module 8 be taken last. Otherwise, the courses can be undertaken individually and in any order.



Asset Management Professional Certification Program

[AMP for Cross-Functional Municipal Teams](#)

[Download the brochure](#)

[Upcoming Schedule](#)

[Enroll Now](#)

COURSE 1

ASSET MANAGEMENT PRINCIPLES AND STRATEGIC DEVELOPMENT (30 Hours)

COURSE 2

ASSET MANAGEMENT CAPABILITIES DEVELOPMENT (30 Hours)

COURSE 3

RISK MANAGEMENT & PERFORMANCE IMPROVEMENT (30 Hours)

COURSE 4

DEVELOPING AND IMPLEMENTING ASSET LIFECYCLE DELIVERY ACTIVITIES (30 Hours)

COURSE 5

ASSET KNOWLEDGE MANAGEMENT (30 Hours)

COURSE 6

CAPSTONE (30 Hours)



Leveraging Asset Master Data & Information Course

A Federation of Canadian Municipalities MAMP grant-subsidized Project for Municipalities



[Application Package](#)

[Research Study](#)



[HOME](#) > [PROGRAMS](#) > [MUNICIPAL ASSET MANAGEMENT PROGRAM](#)

Municipal Asset Management Program

We offer funding, training and resources to help you strengthen your asset management practices

Society of maintenance and reliability professionals



FCM Municipal Asset Management Program ([Link](#))

Asset management resource library
We've gathered resources to explain infrastructure planning and asset management, and listed sources of training, conferences and more. Take a look!

Asset management resources for beginners
Check out these beginner asset management resources from across the country.

How to implement asset management in your municipality
Discover how to make asset management practices a part of your municipality's daily business decision-making framework. Learn from a video, case study and checklist, developed to support your municipality.

Tips for working with an asset management consultant
Is your municipality thinking of hiring an asset management consultant? Discover tips that help you avoid challenges, get the most value and articulate what you need to make your project a success.

Tools: Operations and maintenance for climate resilience
Learn strategies to improve your community's climate resilience through your existing assets and programs. Check out our handbook, worksheet and factsheets.

Tool: Asset management readiness scale
Use our Asset Management Readiness Scale to assess your municipality's asset management practices and identify areas for improvement to help you advance.

Asset management training
Sign up today for one of the training opportunities listed below. There are national and local events tailored to meet your community's needs.

★ Good resources to help you get started